Revisiting the Role of Islamic Bank on SDGs: Sharia Financing, Inequality, and Poverty

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Abstract

This study aims to reassess the impact of Sharia financing provided by Islamic banks on the advancement of Sustainable Development Goals (SDGs), with a particular focus on reducing inequality and poverty. Given the uneven distribution of Sharia financing among regions in Indonesia, we adopt a clustering approach using the k-means clustering method. This approach considers two critical criteria: the nominal amount of Islamic financing and the proportion of Islamic financing. The clustering process resulted in the creation of two distinct clusters. The Lower cluster comprises regions characterized by a low market share and nominal Sharia financing, while the Upper cluster encompasses regions with a high market share and nominal Sharia financing. We utilized annual data from 33 provinces for the period spanning 2012 to 2020. Through the application of a fixed-effect panel regression with the Generalized Least Squares (GLS) approach, our analysis reveals that in the Upper cluster, the presence of Sharia financing plays a pivotal role in reducing financing inequality, inequality in job opportunities, and notably lowering the poverty rate. In contrast, only nominal Sharia financing appears to contribute to the reduction of poverty, with no discernible impact observed regarding financing inequality and disparities in employment opportunities.

Keywords: Islamic Bank Financing; Sustainable Development; SDGs; Inequality; Poverty.

1. Introduction

The existing body of literature emphasizes that Islamic banking has the potential to serve as an effective instrument for advancing the Sustainable Development Goals (SDGs), particularly in the context of mitigating income inequality and poverty [1, 2]. This potential is deeply rooted in the foundational principles of Islamic finance, such as equity, wealth redistribution, and social welfare, which closely align with the objectives of the SDGs [3, 4]. In adherence to these principles, Islamic banking places a significant emphasis on business practices that prioritize not only profitability but also social responsibility and mutual benefit, ultimately leading to enhanced social welfare, including the reduction of unemployment and poverty [5, 6]. Extensive research has demonstrated a strong connection between financial inclusion and the reduction of income inequality and poverty [7], with Islamic banking playing a role in fostering inclusivity [4, 8]. Furthermore, in addition to financing, other Islamic banking products such as waqf and zakat also serve as crucial tools for expanding financial inclusion and targeting objectives related to reducing inequality and poverty [4, 9, 10].

Studies encompassing 24 member countries of the Organization of Islamic Cooperation (OIC) from 2006 to 2013 have shown that Islamic banks positively contribute to promoting equality [11]. Subsequent research further affirms the effectiveness of Islamic financing in mitigating inequality in both low- and high-income countries [12]. However, research specifically focused on 12 Indonesian provinces suggests that financing from Islamic banks may lead to increased income inequality. This phenomenon is attributed to the prevalence of household financing [13]. Another study, based on data from 33 provinces between 2010 and 2018, reveals that sharia financing and its depth, measured by the ratio of regional sharia financing to GRDP, are associated with an increase in the Gini ratio [14]. The divergence from previous studies [11–13], particularly the tendency toward the negative impact of sharia financing on income inequality in Indonesia [12–13], is likely due to differences in the research models employed. This is quite reasonable because Yuliani & Rohman [12] and Biancone et al. [13] assume that the distribution of Sharia financing in nominal terms and market share is uniform, despite the uneven development of sharia financing in various regions of Indonesia. This condition is further reinforced by the fact that, even though Indonesia has a Muslim majority, not all regions have a dominant Muslim community.

In contrast to the connection between financing and inequality, the literature largely concurs on the positive impact of bank financing on poverty alleviation in regions with higher rates of financial inclusion [15, 16]. In the Indonesian context, research indicates that regions with higher levels of banking financing do not necessarily exhibit improved poverty rates [17]. Although studies with different timeframes and methodologies confirm that bank financing in Indonesia stimulates economic growth, reduces unemployment, and subsequently lessens poverty [18], the existing literature predominantly focuses on conventional banks, and studies investigating the relationship between sharia financing and poverty reduction are limited.

In light of the aforementioned literature, we conclude that there is a need to refine the research model for measuring the impact of sharia financing on inequality. Additionally, in-depth studies are warranted to explore the role of sharia financing in poverty reduction. To account for the non-uniform development of sharia financing across different regions in Indonesia, this study introduces a clustering method based on two key categories: the share of Sharia financing and nominal financing. The utilization of these categories aims to encompass the full spectrum of regional characteristics, spanning from high shares of Sharia financing with relatively low nominal terms to the opposite scenario. This clustering framework is informed by the findings of Yuli & Rofik [19], which establish a positive relationship between the total amount of financing and reduced unemployment, with a diminishing impact as the share of Sharia financing increases. Additionally, Ndlovu & Toerien [15] and Kumar & Jie [16] found a varying role of financing in poverty reduction in regions with varying levels of financial inclusion.

The clustering approach for these two categories employs an unsupervised learning methodology, utilizing the k-means clustering technique. K-means clustering was chosen due to its efficacy in grouping, as opposed to traditional methods such as data centers or data distribution approaches. Moreover, k-means clustering offers the advantage of grouping multiple categories, a capability not feasible with conventional statistical methods like averaging or median calculations. Additionally, as a non-hierarchical clustering algorithm, k-means clustering ensures that data points do not overlap. Subsequently, each formed cluster undergoes estimation using the panel data regression method. This method is inspired by the work of Ntani et al. [20], which illustrates that models lacking cluster considerations tend to produce less accurate confidence intervals. This finding aligns with results from other studies, such as those by He et al. [21] and Zuhroh et al. [22].

In contrast to several earlier studies that exclusively relied on the Gini ratio as a proxy for income inequality, this research investigates both inequality in financing and inequality in job opportunities. An examination of how Sharia financing impacts financing inequality and the inequality of job creation can shed light on previous research that suggests Sharia financing has not played a significant role in reducing income inequality. Furthermore, as previously mentioned, given the limited evidence regarding the role of Sharia financing in poverty reduction, this study not only assesses its impact on inequality but also its influence on poverty rates.

This study makes a substantial contribution to a better understanding of how Islamic banks operate in mitigating inequality and poverty within Indonesia. The results of this study offer initial findings, shedding light on current conditions and the potential of Sharia financing to bolster sustainable development, particularly in reducing inequality and poverty. Furthermore, this study enriches the literature by introducing alternative methods for assessing the effect of Sharia financing from a clustering perspective, especially when dealing with heterogeneous data. Additionally, it underscores the significance of considering alternative variables, such as access to financing and job opportunities, as options for measuring inequality rather than solely relying on the Gini ratio.

2. Research Methodology

2.1. Data

For this study, we collected annual data from 33 provinces in Indonesia, covering the period from 2012 to 2020. The data sources included unemployment statistics, poverty rates, regional government expenditure, and gross regional

domestic product, all of which were acquired from the Indonesian Central Bureau of Statistics. Furthermore, data pertaining to the total amount of financing and Sharia-compliant financing were sourced from statistical reports on the Indonesian economy and banking, as published by the Indonesia Financial Services Authority.

2.2. Variable Measurement

The data related to Sharia financing reflects the distribution of Sharia-compliant banking financing to non-bank third parties within each region. The share of Sharia-compliant financing is calculated by dividing the total Sharia-compliant bank financing by the combined total of bank financing, which includes both Sharia and conventional lending, specific to each province and time period. Furthermore, the decomposition ratio of Sharia financing results from dividing each type of financing (namely working capital financing, investment financing, and household financing) by the overall Sharia financing in each province within the same year.

Additionally, financing inequality is determined through the absolute value of the z-score of the per capita banking financing ratio. This per capita financing ratio is calculated by dividing the total banking financing by the population within each region during a given year. The absolute value of the z-score is also used to assess the inequality of job opportunities. Inequality in job opportunities is represented by the z-score value of the unemployment rate in each region during the same year. The z-score formula in this study follows Equation 1, where x is the value of per capita banking financing or the unemployment rate, μ is the mean value, and σ is the standard deviation.

$$Z_i = ABS \ \frac{x_{ij} - \mu_j}{\sigma_j} \tag{1}$$

Regarding control variables, this study incorporates both direct and indirect expenditure variables. These expenditure categories are distinguished due to the routine and planned nature of direct expenditures, as opposed to the more socially-oriented nature of indirect expenditures, such as grants and disaster relief [19, 23, 24]. Another control variable used is Gross Regional Domestic Product (GRDP). The inclusion of GRDP is based on a substantial body of literature indicating that economic growth within a region has a significant impact on inequality and poverty [19]. Detailed information for each variable in this study can be found in Table 1, and the general research framework is illustrated in Figure 1.

Figure 1. Research's framework

Table 1. Measurement variables

No.	Dependent variable	Symbol/Abbreviation	Formula/Sources
1	Total financing	TF	Financial Services Authority
2	Sharia financing	SF	Financial Services Authority
3	Working capital financing	WCF	Financial Services Authority
4	Investment financing	IF	Financial Services Authority
5	Household financing	HF	Financial Services Authority
6	Unemployment	Un	Central Bureau of Statistics
7	Poverty	POV	Central Bureau of Statistics
8	Inequality of financing	INQ_F	Equation 1
9	Inequality of job opportunity	INQ_JOB	Equation 1
10	Direct expenditure	DE	Central Bureau of Statistics
11	Indirect expenditure	IE	Central Bureau of Statistics
12	Gross Regional Domestic Product	GRDP	Central Bureau of Statistics
13	Share of sharia financing	SSF	$\frac{SF_i}{TF_i}$
14	Decomposition ratio of sharia working capital financing	DRWCF	$\frac{WCF_i}{SF_i}$
15	Decomposition ratio of sharia investment financing	DRIF	$\frac{IF_i}{SF_i}$
16	Decomposition ratio of sharia household financing	DRHF	$\frac{CF_i}{SF_i}$

2.3. Clustering

Given the inherent heterogeneity of Sharia financing in Indonesia, encompassing both nominal and market shares, we employ an unsupervised clustering methodology to categorize each province. This clustering process draws inspiration from the work of Yuli & Rofik [19], who demonstrate that regions with distinct proportions in the Sharia financing market can exert influence over growth and unemployment rates. Additionally, our clustering approach aligns with the findings of Zuhroh et al. [22] and Utami et al. [25], which suggest that the use of cluster-based regression techniques can enhance the confidence interval.

The research uses k-means clustering method. Formally, the method can be presented as follows. Assuming there is a set of observations $(x_1, x_2, x_3, \ldots, x_n)$ where each observation is a real vector with d-dimension, k-means clustering aims to divide n observations into k cluster $(k \leq n)$. The set $S = \{S_1, S_2, S_3, \ldots, S_k\}$ thus minimizing the within-cluster sum of square-like variants. The purpose of minimizing this variant can be stated

$$\frac{\arg\min}{s} \sum_{i=1}^{k} \sum_{x \in S_i} \|x - \mu_i\|^2 = \frac{\arg\min}{s} \sum_{i=1}^{k} |S_i| \, Var \, S_i \tag{2}$$

where μ_i is the mean of points in S_i. This is equivalent to minimizing the paired square deviations of points in the same cluster.

$$\frac{\arg\min}{s} \sum_{i=1}^{k} \frac{1}{2|S_i|} \sum_{x,y \in S_i} \|x - y\|^2 \tag{3}$$

The equivalence can be deduced from identity $\sum_{x \in S_i} \|x - \mu_i\|^2 = \sum_{x \neq y \in S_i} (x - \mu_i)(\mu_i - y)$. Since the total variance is constant, it is equivalent to maximizing the sum of the squared deviations between points in different clusters following the law of total variance [26]. In this paper, the total observations are 33 of average of nominal of shariah financing and share of shariah financing from each province in Indonesia. The elbow and silhouette coefficient use as method to find the maximum cluster.

2.4. Panel Regression

To accommodate the unique characteristics of each region, this study utilizes a fixed-effect panel data regression approach and employs the Generalized Least Squares (GLS) estimation method. GLS is selected to effectively address concerns related to heteroscedasticity and autocorrelation [27, 28]. The GLS technique is employed to generate optimal estimates of the regression coefficients. This method involves assigning weights to individual observations based on the covariance between the dependent and independent variables, as well as the covariance across observations from different regions and time periods. By judiciously applying appropriate weights, GLS estimates can yield more efficient and consistent results compared to alternative regression methods [28]. The model adheres to Equation 4. Y, x, β, α, and ε represent the dependent variable, independent variable, coefficient of the independent variable, constant, and error term, respectively. The subscripts i, t, and j indicate the ith observation at time t, and j represents the jth independent variable.

$$Y_{it} = \alpha + \sum_{i=1}^{j} \beta_i x_{it} + \varepsilon_{it} \tag{4}$$

3. Result and Discussion

The results obtained from both the elbow and silhouette coefficient methods for cluster determination suggest the presence of a maximum of two clusters (see Figure 2). Furthermore, the outcomes from the k-means clustering technique, as depicted in Figure 3, reveal that the Upper cluster consists of regions characterized by a higher nominal and market share of household financing, while the Lower cluster encompasses areas with a lower nominal and market share of household financing. To provide more specific details, the Lower cluster includes 14 provinces, whereas the Upper cluster comprises 19 provinces. The cluster centers are also presented in Table 2. Moreover, Table 2 highlights a significant disparity between the total amount of Sharia financing and the share of Sharia financing in the Lower and Upper clusters.
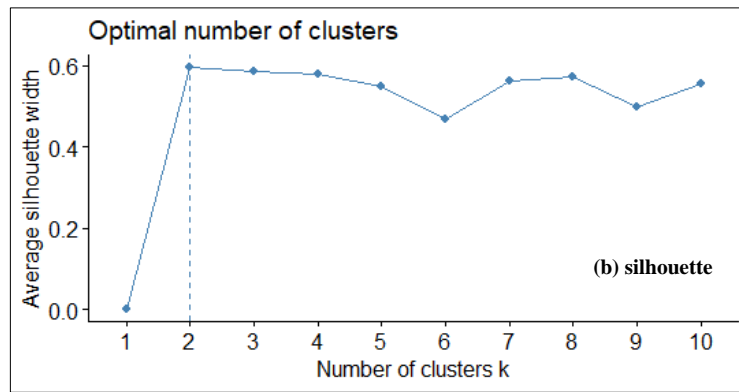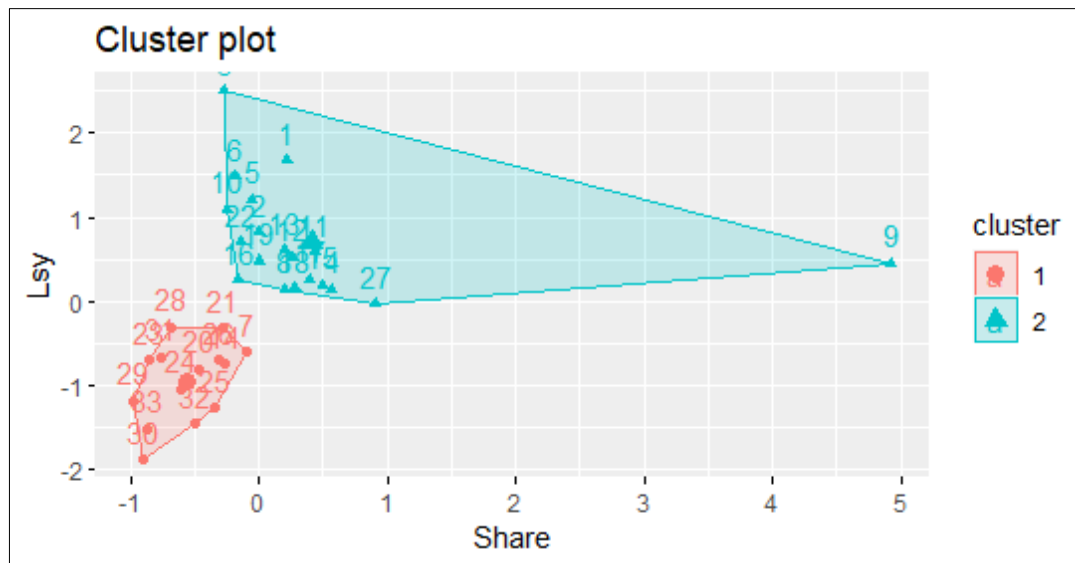

(a) Elbow
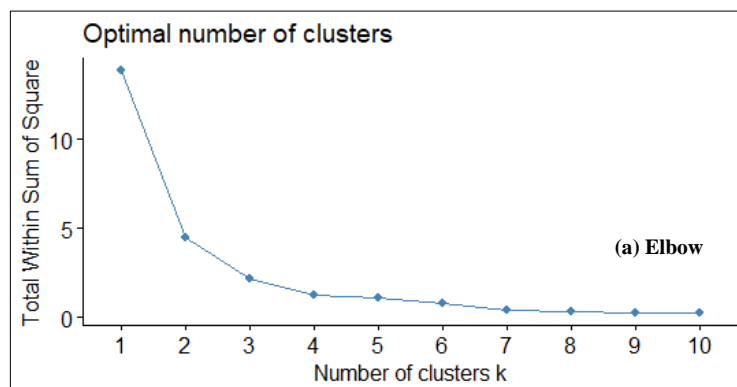
Figure 2. Optimal cluster

Cluster 2 (Upper cluster):

Jawa Barat (1), Banten (2), Jakarta (3), Yogyakarta (4), Jawa Tengah (5), Jawa Timur (6), Jambi (8), Aceh (9), Sumatera Utara (10), Sumatera Barat, (11) Riau (12), Sumatera Selatan (13), Kep. Riau (15), Lampung (16) Kalimantan Selatan (17), Kalimantan Barat (18), Kalimantan Timur (19), NTB (27).

Cluster 1 (Lower cluster)

Bengkulu (7), Bangka Belitung (14), Kalimantan Tengah (20), Sulawesi Tengah (21), Sulawesi Selatan (22), Sulawesi Utara (23), Gorontalo (24), Sulawesi Barat (25), Sulawesi Tenggara (26), Bali (28), NTT (29), Maluku (30), Papua (31), Maluku Utara (32), Papua Barat (33).

Figure 3. Cluster result

Table 2. Descriptive statics and cluster center

Cluster		Mean	Median	Max	Min	Std. Dev	Center of cluster	Obs.
Upper	INQ_F (z-score)	0.600263	0.122144	11.64152	0.000335	2.024979	0.083 (share) 3.592 (SF)	171
	INQ_JOB (z-score)	0.698873	0.536198	2.593445	0.014731	0.578983		
	POV (Percent)	9.593860	8.770000	18.58000	3.420000	3.795613		
	SSF (Percent)	0.083118	0.072044	0.766599	0.001207	0.080288		
	SF (million IDR)	12.274.29	4512.922	156021.0	49.98300	24441.04		
	DE (million IDR)	45,139.18	26755.92	353739.5	8147.116	55440.91		
	IE (million IDR)	6,905.918	4010.627	31121.00	626.0000	6994.228		
	GRDP (million IDR)	449,960.2	243297.8	1836241	66340.81	463641.3		
Lower	INQ_F (z-score)	0.152701	0.139508	0.417131	0.000470	0.094099	0.031 (share) 2.517 (SF)	126
	INQ_JOB (z-score)	0.825130	0.793985	2.389741	0.008418	0.467711		
	POV (Percent)	13.84706	13.39500	31.53000	3.610000	7.367177		
	SSF (Percent)	0.031065	0.028713	0.080487	0.000000	0.020346		
	SF (million IDR)	557.2424	414.9602	2536.000	0.000000	519.2399		
	DE (million IDR)	15,841.82	12810.16	64738.36	4199.212	10871.90		
	IE (million IDR)	2,118.856	1513.164	8808.000	328.5341	1734.155		
	GRDP (million IDR)	64,386.41	56839.38	162693.4	17120.07	38332.96		

The regression results presented in Table 3 reveal that within the Upper cluster, both the market share and the presence of Sharia financing significantly contribute to reducing financing disparities. However, in the Lower cluster, no such impact was observed from these two financing measurement types in terms of reducing financing inequality. Shifting to the employment gap, within the Upper cluster, the market share of Sharia financing has a positive effect on narrowing the inequality of job opportunities, while Sharia financing doesn't yield the same impact. Conversely, in the Lower cluster, neither the market share nor the presence of Sharia financing significantly influences the inequality of job opportunities. Notably, this study uncovers an intriguing observation: an increase in financing inequality is associated with a reduction in the inequality of job opportunities, but this effect is significant only in the Lower cluster and not in the Upper cluster. These findings provide a significant perspective that financing inequality does not always have a negative impact. In regions within the Lower cluster, financing inequality can actually contribute to reducing the inequality of job opportunities.

Table 3. Regression results of total Sharia financing

	Upper cluster					Lower cluster				
	INQ_F	INQ_JOB		POV		INQ_F	INQ_JOB		POV	
SSF	-0.229**	-2.785*	-2.838*	-2.828*	-2.086*	0.141	2.565	2.386	9.415	11.212***
LOG(SF)	-0.000	0.119*	0.118*	-0.155*	-0.140*	-0.003	0.012	0.010	-0.127**	-0.138*
INQ_F	-	-	-0.193	-	0.346*	-	-	-0.913***	-	1.131
INQ_JOB	-	-	-	-	0.242*	-	-	-	-	-0.149
LOG(DE)	-0.147*	0.031	-0.019	-1.143**	-1.075*	-0.072*	-0.039	-0.121	-0.427	-0.489
LOG(IE)	0.005	0.229**	0.245*	-0.306	-0.444*	-0.020	-0.310	-0.293	-0.640	-0.674
LOG(GRDP)	1.98**	-0.452	-0.350	-1.533**	-1.702**	-0.191*	0.560	0.413	-1.044	-0.679
C	-0.390	3.315	2.570	44.87*	46.890*	3.091*	-2.762	-0.341	34.436	31.246*
Obs.	171	171	171	171	171	126	126	126	126	126
R^2	0.872	0.720	0.727	0.984	0.988718	0.890	0.532	0.522	0.992	0.991
F-stat.	43.72 (0.000)	16.444 (0.000)	16.211 (0.000)	408.5 (0.000)	508.295 (0.000)	48.345 (0.000)	6.782 (0.000)	6.109 (0.000)	740.810 (0.000)	629.398 (0.000)
Root MSE	0.220	0.339	0.335	0.482	0.456763	0.0513	0.327	0.324	0.704	0.693

Notes: *, **, and *** respectively represent significance levels of 1%, 5%, and 10%.

Our findings significantly update the conclusions made in Mohamad et al. [11], Yuliani & Rohman [12], and Biancone et al. [13], which previously suggested that Sharia financing has a positive impact on reducing income inequality in both high and low inclusion areas. As a consequence, it may be necessary to reevaluate these findings using a clustering approach, as we did in this study, to test the consistency of the results, given that the sample has traditionally been considered homogeneous. Furthermore, the findings in this study also broaden the perspective on the relationship between banking financing, especially Sharia financing, and job creation, which is in line with references [24, 29–32], who also argue that Sharia financing has a positive impact on reducing unemployment. Consequently, we now have an understanding that Sharia financing not only promotes greater employment opportunities but also reduces the inequality of job creation.

In the context of poverty reduction, disparities also emerge between the Upper cluster and the Lower cluster. In the Upper cluster, both the market share and Sharia financing have a positive influence on reducing the poverty rate. However, within the Lower cluster, only Sharia financing significantly impacts poverty reduction. Additionally, in the Lower cluster, an increase in the market share of Sharia financing is associated with a rise in the poverty rate. It's important to acknowledge the complexities inherent in the interactions between these variables. In the Upper cluster, a reduction in financing inequality and inequality of job creation synergistically contribute to poverty reduction. Meanwhile, in the Lower cluster, no significant relationship is found between financing inequality, the inequality of job creation, and the poverty rate.

This study aligns with previous findings, as seen in Ndlovu & Toerien [15] and Kumar & Jie [16], which indicate that higher levels of Sharia financing have a positive impact on reducing poverty. Furthermore, this study is in line with Ndlovu & Toerien [15] and Naili et al. [33], who found differences in impacts for areas with high and low inclusion levels. Therefore, we believe that in line with the fundamental principles of Sharia financing, which aim for mutual benefit and not solely profit, it is only natural that strategic efforts need to be made to increase Sharia financing in Indonesia, both in terms of nominal and market share. Additionally, since several regions in Indonesia have a Muslim-majority population, it is only natural that Islamic banking is a cornerstone of sustainable development, especially in reducing inequality and poverty [5, 6].

The breakdown analysis indicates that the specific category of Sharia financing has a minimal influence on its ability to diminish discrepancies in financing and gaps in employment opportunities. This is clearly demonstrated in the regression findings for working capital, investment, and household financing within both the Upper and Lower clusters (as shown in Tables 4 to 6). None of these variables exhibit statistically significant effects, whether in nominal terms or in their proportions, on financing inequality and disparities in employment opportunities. Furthermore, when

considering a regression model with poverty as the dependent variable, it becomes apparent that the overall increase in financing takes precedence over the specific type of financing. However, increasing the proportion of Sharia financing is the only aspect of financing that contributes to poverty reduction. This finding challenges the idea that the impact of Sharia financing has been suboptimal due to the predominance of household financing [13].

Table 4. Regression results of Sharia working capital financing

	Upper cluster					Lower cluster				
	INQ_F	INQ_JOB		POV		INQ_F	INQ_JOB		POV	
DRWCF	0.088	0.434	0.491	1.870*	1.703**	-0.004	0.051	0.044	1.319**	1.541**
LOG(WCF)	-0.015	-0.010	-0.012	-0.189*	-0.183*	-0.002	0.042	0.038	-0.100**	-0.103**
INQ_F	-	-	-0.128***	-	0.342*	-	-	-0.905	-	1.446**
INQ_JOB	-	-	-	-	0.038	-	-	-	-	-0.153
LOG(DE)	-0.148*	0.057	0.020	-0.819*	-0.722*	-0.069*	-0.065	-0.142	-0.189	-0.148
LOG(IE)	0.009	0.051	0.080	-0.682*	-0.759*	-0.027	-0.259	-0.263	-0.829*	-0.826*
LOG(GRDP)	0.155	-0.168	-0.118	-0.975	-1.102	-0.193*	0.542	0.411	-0.882	-0.630
C	0.189	1.718	1.325	37.280*	38.266*	3.133*	-2.725	-0.380	31.531*	28.256*
Obs.	171	171	171	171	171	126	126	126	126	126
R^2	0.883	0.568	0.574	0.988	0.988	0.904	0.538	0.529	0.992	0.992
F-stat.	48.662 (0.000)	9.218 (0.000)	9.171 (0.000)	607.967 (0.000)	591.040 (0.000)	56.270 (0.000)	6.931 (0.000)	6.275 (0.000)	785.889 (0.000)	716.950 (0.000)
Root MSE	0.214	0.352	0.349	0.635	0.625	0.051	0.330	0.327	0.733	0.723

Notes: *, **, and *** respectively represent significance levels of 1%, 5%, and 10%.

Table 5. Regression results of Sharia investment financing

	Upper cluster					Lower cluster				
	INQ_F	INQ_JOB		POV		INQ_F	INQ_JOB		POV	
DRINVF	0.335**	-0.316	-0.025	2.729*	1.808**	-0.009	-0.555	-0.522	0.720	0.572
LOG(INVF)	-0.014	-0.011	0.026	-0.233*	-0.171*	-0.002	0.067*	0.063**	-0.107***	-0.102**
INQ_F	-	-	-0.169	-	0.339*	-	-	-0.944***	-	1.337**
INQ_JOB	-	-	-	-	0.322*	-	-	-	-	-0.145
LOG(DE)	-0.120*	0.171	0.007	-1.051*	-0.972*	-0.073*	-0.081	-0.160	-0.447	-0.466
LOG(IE)	-0.062	-0.044	0.193	-0.309	-0.457**	-0.027	-0.257	-0.263	-1.020	-1.046**
LOG(GRDP)	0.289*	0.054	-0.249	-1.652*	-1.938*	-0.184*	0.441	0.313	-0.557	-0.289
C	-1.218	-1.245	2.049	44.946*	48.290*	3.085*	-1.465	0.874	32.010*	29.372*
Obs.	171	171	171	171	171	126	126	126	126	126
R^2	0.872	0.018	0.708	0.981	0.987	0.888	0.533	0.527	0.991	0.991
F-stat.	43.570 (0.000)	0.619 (0.000)	14.793 (0.000)	337.903 (0.000)	473.770 (0.000)	47.326 (0.000)	6.798 (0.000)	6.230 (0.000)	682.669 (0.000)	611.995 (0.000)
Root MSE	0.2141	0.382	0.350	0.503	0.469	0.051	0.328	0.325	0.718	0.709

Notes: *, **, and *** respectively represent significance levels of 1%, 5%, and 10%.

Table 6. Regression results of Sharia household financing

	Upper cluster					Lower cluster				
	INQ_F	INQ_JOB		POV		INQ_F	INQ_JOB		POV	
DRHF	-0.008	-0.360	-0.387	-0.86***	-0.047	0.029	-0.175	-0.150	-0.773	-0.657**
LOG(HF)	-0.007	0.013	0.011	-0.387*	-0.270*	-0.005	0.049	0.044	0.013	-0.000
INQ_F	-	-	-0.181	-	0.338*	-	-	-0.909*	-	1.237**
INQ_JOB	-	-	-	-	0.248**	-	-	-	-	-0.111
LOG(DE)	-0.142*	0.032	-0.016	-1.127*	-1.178*	-0.074*	-0.065	-0.146	-0.067	-0.246
LOG(IE)	-0.015	0.191	0.204	-0.209	-0.494**	-0.028	-0.272	-0.275	-1.440*	-0.682
LOG(GRDP)	0.136	-0.264	-0.171	-1.016	-1.287**	-0.185*	0.508	0.382	-0.111	-1.002
C	0.557	2.151	1.521	39.380*	43.963*	3.102*	-2.224	0.092	26.736*	32.443*
Obs.	171	171	171	171	171	126	126	126	126	126
R^2	0.889	0.705	0.711	0.983	0.618	0.886	0.523688	0.519	0.989699	0.993
F-stat.	51.382 (0.000)	15.338 (0.000)	15.035 (0.000)	386.254 (0.000)	37.763 (0.000)	46.430 (0.000)	6.535 (0.000)	6.040 (0.000)	571.145 (0.000)	758.324 (0.000)
Root MSE	0.203	0.351	0.348	0.491	0.510	0.051	0.328562	0.325	0.743633	0.722

Notes: *, **, and *** respectively represent significance levels of 1%, 5%, and 10%.

Based on this comprehensive analysis, our study concludes that Sharia financing has the potential to reduce financing inequality, disparities in employment opportunities, and alleviate poverty. This potential is maximized as both the nominal and market share of Sharia financing increase. The debate regarding the prioritization of specific types of financing, such as working capital, investment, or household, appears unnecessary, as they lack statistically significant impact. In response to the findings of Yuli & Rofik [24] concerning the market share of Sharia financing, our study reveals an inverse correlation between the impact and its magnitude. This phenomenon specifically applies to regions within the Lower cluster, while in the Upper cluster, an increase in the nominal amount of financing and market share is associated with poverty reduction.

Regarding the control variables in play, there are indications that the control variables in the Upper cluster have more promising impacts compared to those in the Lower cluster. The results show that economic growth and government spending within the Upper cluster carry greater statistical significance than in the Lower cluster. Additionally, our study reveals that direct expenditure is more effective in mitigating financing disparities, bridging gaps in employment opportunities, and reducing poverty rates. These findings underscore the effectiveness of a direct expenditure approach in endeavors to alleviate economic inequality and promote economic inclusivity. These results are also supported by research conducted by Masduki et al. [34]. Furthermore, it has been observed that higher government spending has played a pivotal role in reducing poverty and income inequality in both developed and emerging countries [35]. These findings further reinforce the empirical evidence that fiscal policy plays a crucial role in sustainable development [36].

4. Conclusion

This investigation reveals the intricate interplay between Sharia financing and various crucial economic dimensions within the two clusters formed using the k-means method. In the group characterized by a higher total amount and market share of Sharia financing, the presence of Sharia financing takes on paramount significance, encompassing both market share and nominal value. This robust presence plays a pivotal role in reducing financing inequality, bridging gaps in employment opportunities, and notably decreasing the poverty rate. Conversely, within the group marked by a lower total amount and market share of Sharia financing, a scenario emerges where only nominal Sharia financing contributes to poverty reduction while no tangible effect is observed regarding financing inequality and disparities in employment opportunities. Furthermore, this study underscores the pivotal role of government direct spending in mitigating economic disparities and fostering comprehensive economic inclusiveness.

Our findings validate theoretical perspectives on the potential of Islamic banks in achieving Sustainable Development Goals (SDGs), particularly in reducing inequality and alleviating poverty. Therefore, especially for Indonesia, a predominantly Muslim country, the penetration of Sharia financing, both in nominal terms and market share, needs to be optimized. Furthermore, the current condition of the Muslim majority population is still not balanced with the high level of Sharia financing penetration. Additionally, this study expands the literature on the relationship between Sharia financing and employment opportunities, demonstrating that Sharia financing can not only reduce unemployment but also enhance equality in job opportunities. It's worth noting that we do not find household financing to be a hindrance in poverty alleviation efforts; in fact, household Sharia financing serves as a positive catalyst in reducing poverty.

5. Declarations

5.6. Declaration of Competing Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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