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Does Sukuk Create Employment? Empirical Evidence from 18 Sukuk Issuing Countries

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Abstract: It is observed that Sukuk gives rise to economic growth; however, the role of Sukuk in reducing unemployment is still an unexplored area. Therefore, this study investigates the impact of Sukuk issuance on unemployment. For this purpose, the study relies on panel data from 18 Sukuk issuing counties. It employs the advanced panel technique, i.e., the Generalized Method of Moments (GMM), to avoid endogeneity, variable bias, and simultaneity issues. The study's findings show that Sukuk issuance has a significant positive impact on job creation. For robustness, the data is also tested against Pooled OLS, Fixed, and Random effect models and found consistency in estimated coefficients. Thus, the study suggests that Sukuk can be used as a policy tool to reduce unemployment.

Keywords: Sukuk, Unemployment, GMM, Islamic Finance

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Introduction

The world's production sharply decreased in almost all developed countries in 2009, marking the first decline since World War II. The job insecurity caused by the recession has had long-term and destructive repercussions at individual and group levels. Societies suffer when industrial jobs are eliminated due to plant shutdowns, personnel layoffs, or even when young people migrate for better job prospects. Since 2008, significant employment losses have propelled numerous families into financial distress, causing more poverty, mortgage seizures, indebtedness, and bankruptcy, particularly in developed nations like the United States. Job losses and financial hardship have been linked to increased poor health, psychological distress, and family breakup (Stuckler et al., 2009). The economic downturn has also had varying effects on different socioeconomic groups. The Global Social Crisis has disproportionately harmed women, yet in some nations, the detrimental effects on men have been more severe. Less skilled workers, teenagers, older people, and migrant workers have all struggled regarding job losses, perks, and pay in various economies. These effects have also differed among and within countries and geographic regions.

Financial markets play a crucial role in the economy by facilitating the allocation of resources from those who have excess to those who need them. For example, when companies or governments need funds, they issue Sukuk, which investors purchase for investment purposes. Thus, funds are transferred from the surplus sector to the deficit one. Financial markets also create an environment for buyers and sellers to trade financial instruments. Recent financial crises have revealed many flaws in the traditional financial system. Islamic principles offer a comprehensive approach, covering all aspects of human life, including business and economic relations, and provide legal rules, regulations, and moral and ethical principles to guide human life. The Islamic banking structure, considered an alternative and viable model, has overtaken several countries' banking industries (Gedikli & Erdogan, 2016). Islamic banking derives its principles from Islamic financing, emphasizing ethical, societal, and ecological accountability, distinguishing it from the conventional financial system (Khan et al., 2017).

With its income-sharing strategy, the Islamic banking model promotes social equality (Noordin et al., 2018). Although it originated in Islamic countries, this banking structure has also been widely acknowledged in non-Muslim counterparts (Usai, 2017). Countries may adapt or transform the Islamic banking concept depending on their financial structure. According to the S&P Global rating system,

the scale of Islamic banking reached $2.2 trillion in 2021 and is predicted to expand to $3.02 trillion by 2027. The Global Sukuk issuance reached $726.8 billion in 2022 and is expected to reach $1.1 trillion by 2027. Islamic finance has proven to be more immune to crises and stable than traditional banking, particularly amidst the global economic crisis (Beck et al., 2013; Hasan & Dridi, 2010).

Sukuk, centered on Shariah principles, is considered an alternative investment tool (Alswaidan, 2013). The Sukuk market signifies the acceptance of Islamic law principles in Islamic investment and money market operations. Adherence to Islamic principles requires all financial instruments employed in Islamic investment markets to be Sharia-compliant (International Islamic Financial Market, 2010). The Sukuk market is widely regarded as the second leading market in the Islamic finance industry, spreading to the entire global finance market via Islamic and non-Islamic countries (COMCEC, 2018). Various states and organizations have provided and requested Sukuk in the international financial market, making it a new option for investors (Shapoor et al., 2015). The term "Sukuk" derives from the Arabic word Sakk plural, referring to an Islamic investment trust certificate. Sukuk bonds provide minimal-risk bonds for individual investors and a low-cost source of business funding (Rafay et al., 2017).

The global sukuk market has grown steadily, reaching US$ 1,063.3 billion as of 2023. In 2032, the market is expected to expand significantly, reaching US$ 3,619.3 billion at a remarkable compound annual growth rate (CAGR) of 14.1%. Sukuk plays a pivotal role in the economy by providing an alternative to conventional bonds. In Saudi Arabia, which forecasts a budget deficit of 3% of GDP in 2024 and 3.4% of GDP in 2025, sukuk issuance is expected to be active. Despite expecting surpluses, the UAE also diversifies funding sources by issuing sukuk.

Only in GCC, the total debt capital market is likely to surpass $1 trillion this year. In the first quarter of 2024 alone, the GCC debt market reached $940 billion. Over a third of this debt is in the form of sukuk, reflecting the growing prominence of Islamic finance. Sukuk issuance aligns with Sharia law, making it an ethical and interest-free investment option. Governments and corporations use sukuk to raise capital for infrastructure projects, refinance debt, and support economic development. Its asset-backed structure provides transparency and security, appealing to issuers and investors.

The global Sukuk market is dominated by GCC (Persian Gulf Corporation) and SEA (Southeast Asia) countries, with the UAE, Saudi Arabia, Bahrain, Qatar, and Kuwait leading the way. Malaysia, Indonesia, and Singapore are also significant

players. Nations such as Pakistan, Japan, the United States, the United Kingdom, Germany, Turkey, and Egypt also pay attention to the rising trends in the Sukuk market (Zolfaghari, 2017). A greater Sukuk market is associated with a larger economic size and a higher Islamic population in a country (Smaoui & Khawaja, 2017). Studies have shown that financial development improves growth performance (De Gregorio & Guidotti, 1995), and the Sukuk market's development can positively impact a country's economic growth. However, research on the influence of Sukuk on economic growth is limited. Some studies indicate that the Sukuk market boosts economic growth (Nayan & Norsiah, 2014; Echchabi et al., 2016), while others find no strong association (Smaouia & Nechi, 2017).

This study aims to explain the substantial linkages between the Sukuk market and developing countries' economic growth. The demand for Shariah-compliant products has increased, and Sukuk has significantly impacted countries' financial and economic health. The popularity of Islamic finance has led people to be more cautious about interest-free products. Islamic banking holds 71 percent of the total assets of the Islamic finance industry, followed by Sukuk (17 percent). Since the early 1990s, most Muslim countries have been issuing Sukuk, and empirical evidence shows that it leads to economic growth.

In countries such as Nigeria and Osun state, sub-sovereign Sukuk was issued to fund the construction and rehabilitation of 24 schools in 2013 (IIFM report, 2018). In 2014, the International Financial Facility for Immunization raised $500 million in Sukuk to fund vaccines for the world's poorest nations (IIFM report, 2018). In Saudi Arabia, $1.7 billion was issued in 2010 to finance electricity projects (Abdelghani & IDRISS, 2016). In Malaysia, $300 million of global Sukuk was issued to finance the Klang Valley rapid mass transit project (Smaoui & Khawaja, 2017).

Most Sukuk-issuing countries are OIC member countries and developing nations with high unemployment rates. The role of the capital market in reducing unemployment and improving people's lives, especially in countries where Islamic finance is growing, is significant. Several studies show the impact of Sukuk issuance on economic growth (Abdelghani & Idriss, 2016), but research on its impact on unemployment is limited. This study aims to find empirical evidence of the effects of Sukuk issuance on unemployment, controlling for various factors such as GDP, interest rate, inflation, investment, and education.

Literature Review

Like other asset-backed securities (ABS), Sukuk bonds differ primarily in their issuance requirements, which must adhere to Shariah law. The issuance of Sukuk involves a special purpose vehicle (SPV). Concerns have been raised regarding the current structure of Sukuk, suggesting that it does not fully comply with Shariah principles, indicating deviations in its application (Lahsasna & Lin, 2012). A fundamental difference between Sukuk and conventional bonds is the concept of risk sharing. Bond issuers are obligated to pay interest to bondholders regardless of financial outcomes, whereas Sukuk holders share risks with issuers based on the underlying financial contracts.

Impact of Sukuk on the Economy

Recent discussions highlight the similarities between conventional and Islamic bonds, with studies examining Sukuk's economic impact. Sukuk offers investors the advantage of portfolio diversification, reducing overall risk. Studies indicate that a mix of conventional and Islamic bonds results in lower value at Risk (VAR) than portfolios consisting solely of conventional bonds (Raei & Cakir, 2007). Combining Islamic bonds, conventional bonds, and government securities further reduces risk and enhances returns (Lahsasna & Lin, 2012).

An active Sukuk market in Malaysia shows that investing in Sukuk provides lower-risk returns (Ahmad & Radzi, 2011). Governments issue Sukuk for social benefits, such as job creation and economic improvement (Sundararajan, Marston, & Shabsigh, 1998). Financial institutions, particularly banks, are significant players in the Sukuk market, viewing it as an alternative to conventional bonds (Ahmad & Radzi, 2011). Malaysia leads in Sukuk issuance, with substantial growth noted in the global market (Jobst, Kunzel, et al., 2008). Sukuk has been used in various sectors, including project financing and infrastructure development. For instance, Sukuk issuance has facilitated job creation in the China-Pakistan Economic Corridor (CPEC) (IIFM, 2018). In 2016, the Islamic Development Bank collaborated with the United Nations Development Program to issue green Sukuk, targeting disaster recovery and youth employment.

Role of Sukuk in Economic Development

Sukuk is crucial for fund generation in both public and private sectors, driving infrastructure and agricultural financing (Tariq & Dar, 2007). In Indonesia, Sukuk funding in agriculture helps reduce poverty (Ahmad & Radzi, 2011). Public infrastructure

projects significantly demand Sukuk, accounting for much of the Islamic debt market and job creation. Despite criticisms, studies show Sukuk's positive impact on economic stability and development in countries like Malaysia, Indonesia, and Tunisia. In Tunisia, Sukuk issuance has contributed to economic and social stability (Araar, 2014). Research indicates a unidirectional relationship between economic growth and Sukuk issuance in Bangladesh (Echchabi, Aziz, et al., 2016). However, panel data studies in North America and the Middle East found no significant relationship due to varying economic structures. The demand for Sukuk bonds is influenced by GDP, income per capita, and gross domestic formation. Sukuk market development positively correlates with GDP per capita (Smaoui & Khawaja, 2017). Larger economies with diversified investment portfolios have better Sukuk markets (Smaoui & Khawaja, 2017). Other studies suggest that firms issue Sukuk when facing financial constraints or difficulty accessing short-term debt (Klein & Weill, 2016; Nagano, 2016).

Sukuk Issuance and Unemployment Reduction

Sukuk projects, such as Sunway Mall's RM 3.1 billion issuance in Kuala Lumpur, support investment activities and job creation. Dubai's use of Sukuk financing for mall developments exemplifies its potential for economic transformation. Emaar Mall and Majid Al Futtaim also plan Sukuk programs, indicating a broader regional adoption. Economic variables are commonly used to assess Sukuk's impact on development. However, small businesses and job creation opportunities should not be overlooked. Sukuk can significantly reduce unemployment, particularly in regions facing socio-economic challenges, such as Nigeria (Nafu, Abdelghani, & Mohammad Fany, 2012). The growth of the Sukuk market theoretically correlates with job creation, as both government and corporate sectors issue Sukuk to finance development projects. However, empirical evidence linking Sukuk issuance directly to job creation is still lacking.

Impact of Conventional Bonds on Employment

Conventional bonds also play a significant role in economic development and employment creation. Issuing conventional bonds can provide funding for various projects, including infrastructure development, which in turn creates job opportunities. For example, infrastructure projects funded by bond issuance in the United States have historically supported employment in construction and related industries (Bassanini et al., 2011). Furthermore, corporate bonds enable companies to expand operations and invest in growth, leading to new hiring (Greenwood, Hanson, & Stein, 2010). Although their mechanisms and compliance requirements

differ, Sukuk and conventional bonds can positively impact employment and economic growth. Understanding these impacts is crucial for policymakers and investors aiming to leverage these financial instruments for broader economic benefits.

In short, Sukuk bonds, adhering to Shariah principles, offer risk-sharing benefits and portfolio diversification advantages. They play a significant role in economic development, particularly infrastructure and poverty reduction. Conversely, Conventional bonds contribute to job creation and economic growth by funding diverse projects. While theoretical links between Sukuk issuance and job creation exist, more empirical research is needed to substantiate these claims. As the market for Sukuk continues to grow, it holds promise for contributing to economic stability and development globally.

Methodology

Panel data from 18 countries from 1995-2015 is taken for GMM estimation. To examine the impact of Sukuk on unemployment, we develop the following equation.

$$\boldsymbol{U_{it} = \alpha + \gamma\, U_{it-1} + \lambda\, Sukuk_{it} + \delta\, control_{it} + \mu_i + \nu_t + \varepsilon_{it}} \qquad (1)$$

In equation (1), U_{it} is the unemployment rate measure, and $Sukuk_{it}$ denotes the number of Sukuk issued per year per country. In contrast, control is a measure of control variables, i.e., GDP per capita growth, gross capital formation (inv), secondary education (edu), interest rate(is), etc., and are parameters to be estimated. One-period lag of the unemployment (dependent variable) is added in the right-hand side variable to control for possible persistency like unemployment and to overcome the chances that unemployment may remain smooth over time. Refers (period-fixed effect) and states country-fixed effect, *i* and *t* denote country and time, respectively. The error term contains all other variables that may impact unemployment and are not included in the model. Due to the nature of the dynamic model with adding lagged dependent ($\boldsymbol{U_{it-1}}$) variable as a repressor, OLS gives biased results Köster and Pelster (2017), and therefore we based on the GMM model result.

Variables and Data

This study focuses on the impact of Sukuk on employment. Thus, the data has been collected from Bloomberg, and the flowing variables have been used.

Total Sukuk: The number of total Sukuk is represented with ltsukuk in our study. It is the sum of the value of sovereign and corporate Sukuk issued. **Unemployment rate:** The unemployment rate is the dependent variable that shows the

total labor force subtracting the employed persons. Unemployment occurs when a person can work but is not employed in the current period. **Education:** Education is the number of people educated in a country. We have taken education as the unemployment control variable because a negative relationship exists between education and unemployment. If the number of educated persons increases in a country, it would directly reduce the unemployment rate. **Gross Domestic Product Per capita Growth:** Gross domestic product is the total monetary value of all the goods and services provided within the country's boundaries. According to this study, there is a negative relationship between unemployment and the gross domestic product. As the GDP increases, it will lessen the unemployment rate. **Gross capital formation (investment):** Gross domestic capital is a country's total capital for production. Capital involves the country's equipment, assets, and tools to produce goods and services. Gross capital formation causes a decrease in the unemployment rate. **Interest rate:** The interest rate is positively related to a country's unemployment rate. As the interest rate increases in a country, it will also increase its unemployment rate. So, the higher the interest rate, the higher the unemployment rate. So, this would not improve the economic conditions of the country. Following is the methodology to find whether Sukuk significantly impacts reducing unemployment. **Inflation:** Inflation and unemployment are the two economic variables that show the country's financial condition. Inflation and unemployment have an inverse relationship because when inflation increases, unemployment decreases, and the decrease in the inflation rate will increase unemployment in the country. Philip curves elaborately define the relationship between unemployment and inflation, which is inverse.

Results and Discussion

This research paper aims to determine the impact of Sukuk financing on job creation. For this purpose, we have taken unemployment as the independent variable and other control variables impacting the dependent variable, such as gross domestic product, education, investment, and interest rate. Control variables are those that might impact the dependent variable in the regression. So, to avoid such a problem, we have kept some control variables constant from 1995-2015 to find out the true relationship between independent and dependent variables. Table 1 shows descriptive statistics.

Table 1

Descriptive Statistics

Variable	Obs[1]	Mean	Std. Dev.	Min	Max
LSukuk	75	20.04693	2.471655	14.25286	25.07205
LGDP	98	0.596524	1.012546	-2.36356	1.865754
lBR	149	2.96722	3.061576	0	17.4855
INV	144	20.1176	9.104288	0	43.06542

We have estimated our model using GMM because this model helps us to examine the valid variables, and there is no serial correlation. The other important factor for using the GMM model is that it deals with the issue of endogeneity, where control variables are correlated with the error term, which creates the problem of not finding the estimates properly. GMM avoids endogeneity because it has used lagged unemployment variables to estimate the model better. Table 2 shows the results for the sample of 18 countries from 1995-2015 to check the impact of Sukuk financing on unemployment, keeping some variables constant. We have taken the pooled OLS, fixed effect, random effect, and GMM to conclude the results better. The result shows that the dependent variable is the first difference; some variables are taken as a log. It has been concluded from all the models that Sukuk issuance has a significantly negative relationship with unemployment, which means that unemployment decreases with the increase in Sukuk issuance.

1 The Generalized Method of Moments (GMM) model can accommodate variables with differing numbers of observations, such as Sukuk (log of Sukuk), which has fewer observations due to limited data availability. Sukuk are issued by various countries at different times, resulting in less frequent reporting and shorter historical coverage than other variables like gross capital formation, interest rates, and inflation. Gross capital formation, interest rates, and inflation are reported differently than Sukuk, thus leading to varying observation counts. Therefore, using the GMM model allows for flexibility in handling these differences by utilizing the maximum available data for each variable, ensuring that the model is as robust and accurate as possible given the data constraints. Arellano & Bond, 1991 and Wooldridge, 2010).

Table 2

GMM Results of Impact of Sukuk Issuance on Unemployment

	(1) POLS	(2) FE	(3) RE	(4) GMM4
LSUKUK	-0.2271**	-0.2343***	-0.2725*	-3.3812*
	[0.110]	[0.086]	[0.144]	[1.743]
LGDPPG	-0.0873	-0.1074	0.1297	-4.3500**
	[0.381]	[0.521]	[0.348]	[1.864]
IS	-0.0841	-0.0930	-0.0241	-3.5216*
	[0.205]	[0.191]	[0.148]	[1.936]
INV	0.0887*	0.0890**	0.0771	1.0136***
	[0.051]	[0.042]	[0.049]	[0.339]
EDU	-0.0028		0.0010	0.4060**
	[0.012]		[0.012]	[0.206]
INF	0.2658*	0.2616**		
	[0.135]	[0.129]		
L.U				3.2966*
				[1.917]
L.group(country)				-1.9429*
				[1.072]
Constant	6.4346**	6.5571***	8.3187***	54.8368
	[2.691]	[2.045]	[3.117]	[34.039]
Observations [2]	49	49	49	47
R^2	0.223			
Adjusted R^2	0.112			
Instruments				9.0000
Groups		8.0000	8.0000	8.0000
Arellano-Bond:AR(1)				
Arellano-Bond: AR(2)				0.4025
Sargan Test (p-Val)				0.0101
Hansen Test (p-Val)				
1.0000				

2 We›ve used the Generalized Method of Moments (GMM) to estimate parameters in models where the data distribution is unknown or mis-specified. GMM is effective with small samples because it relies on instrumental variables correlated with the endogenous variable (e.g., unemployment) but uncorrelated with the error term. As long as these instruments are valid, GMM can provide consistent estimates, even with fewer observations. Additionally, GMM is robust to errors in distribution specification, making it useful in cases with limited data. Burnside & Eichenbaum, 1994 and Soto, 2009).

Lefort (2011) analyzed the impact of capital accumulation and capital markets on unemployment in Chile with 18 years of data taken, ranging from 1987 to 2005. The study found a negative relationship between unemployment and capital investment. Sargon and Hansen test that we have used in our results to check the overall validity of the variables. The Hansen and Sargent tests show that the instruments are consistent and valid, whereas the Arellano bond test verifies whether the residuals are second-order serially correlated. As the 1% level passes all tests, such as Hansen, Sargon, and the Arellano bond (2), this suggests that the instruments used are valid and there is no second-order correlation of error terms. The following are the statistical results of our data.

Conclusion and Policy Recommendations

Sukuk is a major tool for financing large projects in most countries. It was developed to attract investment from oil-rich countries and other untapped money in Muslim-majority countries. Currently, we can see the expansion in this Islamic finance industry sector. As a result, a positive and significant relationship has been observed between Sukuk issuance and economic growth. However, the role of Sukuk issuance and job creation is yet to be explored. Therefore, this study aimed to fill this gap. For this purpose, the data of 18 Sukuk issuing countries has been used, and GMM estimation is applied to achieve the results. The result predicts a negative but significant relationship between Sukuk issuance and unemployment, indicating that Sukuk as a capital market product can reduce unemployment. Thus, it is recommended that the government consider Sukuk as a policy tool while fighting unemployment.

Policy recommendations

The study findings recommend that Sukuk issuance catalyzes economic growth and its potential role in addressing unemployment. With a positive and significant relationship observed between Sukuk issuance and economic expansion, governments are encouraged to prioritize the promotion of Sukuk as a pivotal financial instrument for funding large-scale projects. This entails actively engaging with oil-rich countries and Muslim-majority nations to attract investment and stimulate economic activity. Moreover, incorporating Sukuk issuance into national economic policies emerges as a strategic imperative, leveraging its capacity to fund infrastructure and developmental initiatives that directly contribute to job creation. Regulatory support must also be bolstered to streamline Sukuk issuance processes, ensuring compliance with Shariah principles while fostering investor confidence.

Through targeted job creation programs funded by Sukuk issuance and public-private partnerships, governments can effectively harness Sukuk's potential to mitigate unemployment, thereby advancing broader economic stability and prosperity.

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