

Analytical Study of the Use of Global Governance Indicators (WGIs) in Improving Financial Inclusion in the Kingdom of Saudi Arabia

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Abstract

The research measured the effect of global financial inclusion indicators on enhancing financial inclusion in the Kingdom of Saudi Arabia by using the dashboard data analysis, estimating a linear model for four financial indicators (controlling corruption, government effectiveness, political stability, and accountability).

The results showed that fighting corruption has a significant negative impact on borrowing, while it has a significant positive effect on both savings and open credit. The decrease in corruption is linked to the improvement of the savings rate in the Kingdom of Saudi Arabia.

The results also showed that political stability has a significant positive effect on the four measures of financial inclusion.

With regard to the control variables, the results showed that the growth rate of per capita GDP in the Kingdom of Saudi Arabia has a significant negative impact on credit and savings cards. This aligns with the permanent income hypothesis; the four models of financial inclusion are important in terms of likelihood ratio. However, Model 3 is the best model regarding minimum information standards across the four forms

The research found that enabling the worldwide regulatory standards associated with dynamic provisions, macro-prudential regulations, capital adequacy and knowledge disclosure is vital to support a secure and broadened financial inclusion

Keywords: Financial inclusion, Financial Stability, Global index, Multinomial logistic, shadow banking.

Introduction

Programs of Financial inclusion have recently taken central attention by economists, also as policymakers to succeed in economic and social benefits. Financial inclusion is defined as “a process that ensures simple access, availability and usage of Financial services for all members of society” (Sarma, 2008). Accordingly, the development in financial inclusion facilitates higher saving rates, which are crucial for increasing

capital accumulation, reducing poverty, improving economic development and reciprocally enhancing economic process (Park and Mercado, 2018).

The G20 Toronto summit declaration in 2010 launched principles for innovative financial inclusion. These principles include, among others, developing financial literacy, creating an institutional environment with clear lines of accountability and coordination within government. Furthermore, the UN General Assembly in 2015 emphasizes on considering financial inclusion as a policy objective in financial regulation in accordance with national priorities and legislation. The UN positioned financial inclusion as a prominent approach to realize the two, 030 sustainable development goals where financial inclusion is featured as a target in 8 of the 17 goals; as an example, eradicating poverty, promoting economic process and decent jobs and supporting industry.

The above-mentioned movements indicate that institutional arrangements are required to cause good governance for promoting programs of Financial inclusion that end in engagement of larger sector of individuals in financial intermediations, stimulating financial development and economic process (Sethi and Acharya, 2018).

This paper aims to look at the impact of the six world governance indicators (WGIs) on indicators of Financial inclusion across the planet economies. The paper uses the worldwide database of Financial inclusion indicators global findex for the years 2017, 2018, 2019 and In the Kingdom of Saudi Arabia. the indications reflect the availability, access and usage of Financial services by countries' residents.

Relatively speaking, there's narrow empirical literature that examines robust links between government governance and financial inclusion. Accordingly, the contribution of this paper are often outlined as follows.

- the paper examines the foremost frequent measures of Financial inclusion within the literature to supply fair validation to the leads to the opposite related studies taking into consideration that the paper includes world economies; and
- this paper examines a replacement view within the literature that financial inclusion requires institutional

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arrangements that, in turn, require governmental systematic intervention. **during this** case, WGI offer relevant measures of the extent to which institutional governance helps strengthen efforts of Financial inclusion.

The paper is organized as follows. **the primary** section discusses the measures and empirical findings of Financial inclusion. The second section discusses the impact of WGIs on financial inclusion. The third section discusses **the info**, statistical tests and estimation. The fourth section discusses the empirical findings. The fifth section concludes.

The Conceptual Link between Governance and Financial Inclusion

The conceptual link between programs of Financial inclusion and governance is rooted deeply **within the** importance of governance to financial development. **to reinforce** financial development, **there's a requirement** to enforce the rule of law and curb down levels of corruption. **one among** the pillars of Financial development is financial access; hence, financial inclusion and governance **also are** interrelated (Sayılır et al., 2018; Sharma and Tuli, 2012). In fact, the institutional environment hosting financial entities plays a key role in improving financial inclusion. Countries with great execution of the law, political stability and respect for creditors' and debtors' rights **will certainly** encourage individuals' involvement **within the** financial intermediaries. Basically, better institutional quality increases the trust **within the economic system** and enhances financial inclusion (Rojas-Suarez, 2010). Hence, financial inclusion is more of a governance issue **and fewer** of a financial issue (Kochhar, 2010).

Financial Inclusion: Measures and Empirical Findings

This section reviews the studies that **specialize in** the measurement and determinants of Financial inclusion, **also because** the performance of Financial inclusion efforts **round the world**.

Measures of Financial Inclusion

introduces a multi-dimensional index that captures information on three dimensions of Financial inclusion; namely, banking penetration, availability of the banking services and usage of the **banking industry** in one single-digit lying between 0 and 1, where 0 denotes complete financial exclusion and 1 indicates complete financial inclusion in an economy. Another approach **is that the** "global index" database, which **is made by the planet** Bank. This database **is predicated** on the Gallup World poll through nationally representative surveys of **quite** 150,000 adults in 140 countries. Presenting a **replacement** set of indicators that measure how adults in 140 economies save, borrow, make payments and manage risk. Recently, Park and Mercado (2018) introduced a **replacement** index of Financial inclusion for 151 economies using the principal component analysis to compute weights for aggregating 9 indicators of

access, availability and usage of **Financial** services. Moreover, **there's** a strand **within the** empirical literature, **that's associated with** the implied **advantage of** strengthened financial inclusion on economic development and growth (Demirguc-Kunt *et al.*, 2017; Park and Mercado, 2018).

Determinants of Financial Inclusion

The earliest studies on financial inclusion are **associated with** its determinants. emphasizes that higher **mobile** penetration and better institutions of governance are correlated across countries with higher household access to financial services. Furthermore, Allen *et al.* (2012) indicate that lower account costs, closeness to financial intermediaries, stronger legal rights and more politically stable environments are important determinants to financial inclusion. On **the opposite** hand, some studies underline the importance of literacy level and awareness of **various** banking services **additionally** to the income level as crucial determinants that pave the way toward greater financial inclusion (Kumar and Laha, 2012; Akudugu, 2013; Grohmann *et al.*, 2018).

Performance of Financial Inclusion across World Countries

Since 2011, about 700 million adults worldwide have signed up for an account at a **proper financial organization** (like a bank) or a mobile money account **during which** 62 per cent of adults now have an account (Klapper and Singer, 2017). East Asia **and therefore the** Pacific made an outsized contribution **to the present** global progress. About 240 million adults **within the** region left the ranks of the unbanked; 69 per cent now have an account. Yet, cost, geographic access and lack of identification are **the foremost** reported barriers to financial inclusion **which will** be addressed by policymakers. Zins and Weil (2016) argue that **the most** barrier to financial inclusion **is that the** basic lack of **cash**. After using **the planet** Bank's global index database on 37 African countries to perform Probit estimations; they conclude **the very fact** that the African continent is at a **number one** position concerning mobile money banking, especially in **East Africa** where **quite** 73 per cent of Kenyans are mobile money customers. They added that in **Sub-Saharan Africa**, 36 out of 54 countries have mobile banking services. While in lower-to-middle income countries, around 2.5 billion people **haven't any** access to banking services. Moreover, they indicate that saving habits **within the** African continent are different **as compared to the planet**. That is, **the most** drivers of savings in Africa are for education (21.3 per cent), for farm or business (19.6 per cent) and for **adulthood** (10.3 per cent). While **the most** source of credit in Africa is family and friends where borrowing formally accounts to only 6.7 per cent.

In the EU region, Coffinet and Jadeau (2017) indicate that **there's** substantial variation among the member states in terms of "financial inclusion score" although overall **the bulk** of the countries are fairly advanced in their efforts **to form the economic system** inclusive. **there's a robust** heterogeneity across the euro area, **during which** households from Greece,

Cyprus, Poland and Slovakia are more financially excluded. The aftermath of the crisis **didn't** increase the financial exclusion of vulnerable households as **an entire**, but had rather country-specific effects, **remarking** systemic risks over some banking systems. Nevertheless, **the share** of total exclusion was 7 per cent **within the** EU's 15 members.

In the Arab World, it stands at 21 per cent outreach of formal financial services excluding the Gulf Cooperation Council (GCC) countries. **almost like** account ownership, the Arab world lags behind other regions in terms of access to credit from formal financial institutions. Although 44 per cent of adults reported having a loan **consistent with the worldwide** findex survey, only 6 per cent of them are borrowing from a **proper financial organization**. Credit outreach **with in** [the region, when excluding GCC countries, **is a smaller amount** than **half** most other developing regions globally, **it had been** concluded that GCC countries, **also** as Lebanon and Jordan, have a deeper outreach of formal credit **in comparison** to other countries (Chehade et al., 2017). Yet, the weakness of **Financial** inclusion indicators **within the** Arab World **isn't** **thanks to** lower demand for financial services, **because the** region shows equal or higher financial activity, but **thanks to** lower outreach of formal financial services, be it for account ownership or credit.

Moreover, **Latin America features a** large financial inclusion gap in terms of account ownership. **it's** reported that institutional weaknesses play **the foremost** prominent role (Rojas-Suarez, 2016). **as an example**, the direct and indirect confrontational effect from the low institutional quality and lack of enforcement of the rule of law directly reduces depositors' incentives to entrust their funds to formal financial institutions.

Impact of World Governance Indicators on Financial Inclusion

This section reviews the empirical country panel analysis studies that examine the impact of WGI on Financial Inclusion in developing and developed countries. Park and Mercado (2015) examine the determinants of **Financial** inclusion in 37 developing Asian economies over **the amount** 2004-2012. They report **that every** of the per capita income, rule of law and population have a positive significant effect on financial inclusion. **especially**, the escalation of the rule of law through enforcement of **Financial** contracts should reduce voluntary financial exclusion. Ghazal and Zulkhibri (2017) examine the impact of governance and institutions on financial inclusion across 69 developing and emerging economies across different regions; namely **Sub-Saharan Africa**, **Middle East** and **North Africa**, South Asia, East Asia and Pacific, Eastern Europe and Central Asia for years 2011 and 2013. The results reveal that good governance in terms of elimination of corruption, enhancement of transparent legal framework and rule of law and good administration should catalyze financial inclusion through increasing **the amount** of bank accounts and saving in formal financial institutions. They further explain that although the results show significant differences across the regions studied, yet, robust governance and institutions develop better

financial inclusion especially for the lower-income fragment in each country.

In the same context, Ajide (2017) studies the impact of institutional infrastructure on financial inclusion in 18 Sub-Saharan African countries over **the amount** 2004-2010. The author uses **cash machine** machines (ATMs) per 100,000 adults, bank branches per 100,000 adults and ATMs per 1,000 km as three different measures for financial inclusion. The results show that government effectiveness had a positive significant effect on (ATMs) per 100,000 adults. Yet, the regulatory quality, rule of law and control of corruption have a positive significant impact on bank branches per 100,000 adults. Nevertheless, the control variables **like** gross domestic product (GDP) per capita, Inflation and bank concentration have a positive significant impact on the three measures of **Financial** inclusion. Bakari et al. (2018) report very close results about African countries.

In fact, the literature concludes converging **leads to** which governance measures have significant impacts on financial inclusion.

Data, Statistical Tests and Estimation

This section presents the empirical investigation of the impact of WGI on financial inclusion across world economies. This section **is split** into four parts. **the primary** and second parts present **the info and therefore** the model used. The third part discusses the methodology adopted **within the** empirical analysis **and therefore the one-fourth** reported the results.

Data

Dependent variable.

The financial inclusion is measured using four measures that are extracted from the Kingdom of Saudi Arabia.) for the years 2017, 2018 and 2019. These measures are borrowed from a **financial organization** (per cent age 18+) (bor), **MasterCard** (per cent age 18+) (credit), saved at a **financial organization** (per cent age 18+) (save) and **open-end credit** (per cent age 18+) (debit).

The measures of **Financial** inclusion examined **during this** paper are **the foremost** frequently examined **within the** related literature. The motivation **for selecting** these specific measures **is 2** folds. First, **the utilization** of an equivalent specific measures of **Financial** inclusion enables fair comparison to other related studies **within the** literature. Second, **the utilization** of an equivalent measures of **Financial** inclusion offers validation to the results previously reached in other related studies. **additionally**, Shaban et al. (2019) emphasize that the borrowing/savings dimension accounts for **the very best** proportion (0.36) **within the** total variation of **Financial** inclusion, followed by the account and payment dimensions (0.32 and 0.31, respectively).

Independent variables.

These variables include the logarithm of WGI (<https://info.worldbank.org/governance/wgi/#home>), which is

ready and published by the planet Bank. The WGI includes six dimensions; namely,

1. voice and accountability (vacc);
2. political stability and absence of violence (pol);
3. government effectiveness (gov);
4. regulatory quality (reg);
5. rule of law (law); and
6. control of corruption (cor).

Control variables.

These variables include the annual **rate of inflation** (infl) and **therefore the annual GDP per capita rate of growth** (gdp). **additionally**, dummy variables are added to **regulate** for differences in geographical regions.

Model specification

Panel multivariate analysis is employed to assess the impact of WGIs on each of the four measures of Financial inclusion.

Financial Inclusion $it = f(\text{WGIs})$

Statistical testing and estimation

Kruskal–Wallis test.

Kruskal and Wallis test are used to determine the statistically significant differences between two or more independent groups of various sample size. A χ^2 statistic is employed to gauge differences in mean ranks to assess the null hypothesis that medians are equal across the various independent groups. Kruskal–Wallis test is examined during this paper to verify the many difference between the four measures of Financial inclusion.

Hausman test.

Hausman test is employed to settle on between a fixed or random-effects model.

Generalized linear model.

The generalized linear model analyzes the consequences of continuous and categorical predictor variables on a discrete or continuous variable .

Financial Inclusion $it =$

$$\beta_1 \text{vaccit} + \beta_2 \text{polit} + \beta_3 \text{regit} + \beta_4 \text{regit} + \beta_5 \text{laeit} + \beta_6 \text{corrit} + \beta_7 \text{inflit} + \beta_8 \text{gdpit} + \sum_j = 1 \text{ to } 9 \beta_9 j \text{ dummy geographical region} + \epsilon_{it}$$

Where

i = the countries;

t = the time interval;

j = refers to the geographical regions; and

ϵ = refers to the error term.

Results and Discussion

Kruskal–Wallis test.

The results reported in Table I, show that the p-value is critical at the 1 per cent level. This result indicates that the

four measures of Financial inclusion are significantly different from one another . this is often a necessary condition to make sure that the results of every regression model are exclusive.

Hausman test results.

As far as in Hausman test the null hypothesis is that the random-effects model is an appropriate test, the results reported in Table II, show that the null hypothesis is rejected within the four models of Financial inclusion implying that fixed effects fit the info .

Panel generalized linear model output.

Table III reports the estimates of 4 models for various measures of Financial inclusion. The results show that control of corruption features a significant negative effect on borrowing from the financial organization , while a positive significant effect on each of saving at a financial organization , open-end credit and mastercard . And therefore the lower corruption is related to a better saving rate within the Economic Community in Saudi Arabia and examine the determinants of retail card payment In Saudi Arabia 2000-2012. Their results show that control of corruption and public trust in policymaking institutions, including banks, are important determinants of card payments.

The insignificance of the rule of law can be fairly justified through the definition of the World Bank to the Rule of Law. The latter refers to the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence

Apparently, these elements are, to an outsized extent, irrelevant to financial inclusion, which is voluntary in its basic form and motivation. The statistical insignificance reflects irrelevancy.

The results also show that political stability features a positive significant effect on the four measures of Financial inclusion.

The coefficient of state effectiveness features a positive significant effect on borrowing, saving and open-end credit ownership. , voice and accountability have a positive significance on saving, open-end credit and mastercard ownership.

Regarding the control variables, the results show that GDP per In Saudi Arabia capita rate of growth features a negative significant effect on saving and credit cards. This conforms to the permanent income hypothesis, which asserts that forward-looking consumers anticipate a rise in their future income, thus dissave against future earning. On the opposite hand, the rate of inflation features a significant positive effect on borrowing only.

Generally, the four models of Financial inclusion are significant in terms of the probability of the likelihood ratio. Nevertheless, Model 3 is that the best model as related to the minimum information criteria across the four models.

Robustness test

The model is re-estimated with different control dummy variables as proxies for countries' effects. Dummy variables are used for the various income levels of the countries. Table

IV reports the results of the robust model that supports the previously reported leads to Table III, during which Model 3 is that the best model as related to the minimum information criteria across the four models. Besides, dummy variables for the income level show negative significant effects across the four models indicating a secular decreasing trend of Financial inclusion across the various income levels. Yet, control of corruption and GDP per capita weren't significant within the four models.

Conclusion and Recommendation

This paper examines the impact of WGIs on the development of Financial inclusion across world economies. The info are obtained from the worldwide database of Financial inclusion indicators (In the Kingdom of Saudi Arabia.) for the years 2017, 2018 and 2019. Four world panel countries' models are estimated employing a fixed generalized linear model for four measures of Financial inclusion; namely, borrowed from a financial organization, Saved at a financial organization, mastercard and open-end credit ownership. The empirical estimation reveals that control of corruption, government effectiveness. Political stability and voice and accountability are the many WGIs that influence financial inclusion.

Some policy recommendations are often derived from the policymakers to enhance programs of Financial inclusion. Government effectiveness are often addressed through relaxing documentation requirements for opening an account. A bank agent model are often considered because it mobilizes the prevailing network of local retailers and other trusted

members of the area people, wzx high is taken into account cheaper than fixing a physical branch. A government might initiate correspondent-banking as an example, post-offices. Furthermore, government electronic payments help increase checking account penetration, especially among rural areas.

Moreover, voice and accountability are often enriched through improving charitable trust in banks via widened disclosure and transparency within the banking industry. In fact, the imposition of explicit deposits insurance that pays bent depositors within the case of bank failures helps increase depositor trust in banks. Nevertheless, financial education in terms of Financial literacy programs should clarify the role of the banking industry within the economic development of any country, thus enhance banks' accountability among countries' residents.

The above-mentioned arguments highlight the importance of granting political stability to make sure trust within the macroeconomic conditions, thereby improve trust within the banking industry. Furthermore, enforcing the rule of law should help in controlling corruption. Nevertheless, enforced financial inclusion related to the weak regulatory environment creates great risk in terms of excessive borrowing and lack of consumer protection threatening financial stability (Cihak et al., 2016). This argument indicates that well-established governance may be a prerequisite to financial inclusion. Additionally, enabling the worldwide regulatory standards associated with dynamic provisions, macro-prudential regulations, capital adequacy and knowledge disclosure is vital to support a secure and broadened financial inclusion (Sousa, 2015).

Table I. Kruskal–Wallis test result

χ^2 degrees of freedom	χ^2 statistic	Prob
3	798.3142	0.0000

Table II. Hausman test results

Measures of financial inclusion	χ^2 statistic	χ^2 degrees of freedom	Prob
Borrowed from a financial institution (% age 18+)	236.361	11	0.0388
Saved at a financial institution (% age 18+)	1.552.479	11	0.0000
Debit card (% age 18 +)	438.618	11	0.0000
Credit card (% age 18+)	19.054	11	0.0000

Note:

Fixed effect model vs Random effect model

Table III. Panel generalized linear model output

Dependent variables	(1) Borrowed from a financial institution (% age 18+)	(2) Saved at a financial institution (% age 18+)	(3) Debit card (% age 18 +)	(4) Credit card (% age 18+)			
<i>Dependent variables (WGs)</i>							
Control of corruption	-0.022 (0.034) **	0.064 (0.010) **	0.099 (0.006) ***	0.077 (0.002) ***			
Rule of law	0.009 (0.457)	-0.024 (0.402)	0.036 (0.392)	-0.010 (0.708)			
Political stability no violence	0.025 (0.000) ***	0.052 (0.000) ***	0.068 (0.000) ***	0.036 (0.004) ***			
Regulatory quality	-0.005 (0.597)	-0.014 (0.576)	-0.093 (0.011) **	-0.016 (0.499)			
Government effectiveness	0.027 (0.002)***	0.043 (0.040)**	0.027 (0.001)**	0.031 (0.133)			
Voice and accountability	0.000 (0.982)	0.066 (0.000)***	0.066 (0.003)***	0.063 (0.000)***			
<i>Control variables</i>							
Inflation rate (%)	0.001 (0.034)**	-0.001 (0.586)	-0.001 (0.807)	0.000 (0.695)			
GDP per capita growth rate (%)	-0.000 (0.776)	-0.007 (0.013) **	-0.005 (0.250)	-0.010 (0.000)***			
<i>Dummy variable for geographical region</i>							
Log likelihood	527.452	Log likelihood	233.921	Log likelihood	102.692	Log likelihood	240.064
Prob (LR statistic)	0.000***	Prob (LR statistic)	0.000***	Prob (LR statistic)	0.000***	Prob (LR statistic)	0.000***
Akaike info criterion	-2.065	Akaike info criterion	-1.383	Akaike info criterion	-0.524	Akaike info criterion	-1.410
Hannan-Quinn criter	-2.728	Hannan-Quinn criter	-1.516	Hannan-Quinn criter	-0.437	Hannan-Quinn criter	-1.312
Schwarz criterion	-2.514	Schwarz criterion	-1.485	Schwarz criterion	-0.445	Schwarz criterion	-1.461

Table IV. Robust test-panel generalized linear model output

Dependent variables	(1) Borrowed from a financial institution (% age 18+)	(2) Saved at a financial institution (% age 18+)	(3) Debit card (% age 18 +)	(4) Credit card (% age 18+)
<i>Dependent variables</i>				
WGs				
Control of corruption	-0.016 (0.123)	0.0086 (0.670)	0.019 (0.499)	0.025 (0.249)
Rule of law	0.009 (0.501)	0.012 (0.683)	0.054 (0.109)	-0.019 (0.420)
Political stability no violence	0.0372 (0.000)***	0.011 (0.197)	0.028 (0.087)*	0.007 (0.468)
Regulatory quality	0.004 (0.686)	-0.027 (0.217)	-0.068 (0.012)**	0.005 (0.782)

Dependent variables	(1) Borrowed from a financial institution (% age 18+)	(2) Saved at a financial institution (% age 18+)	(3) Debit card (% age 18 +)	(4) Credit card (% age 18+)			
Government effectiveness	0.031 (0.017)**	0.043(0.033)**	0.062 (0.064)*	0.028 (0.167)			
Voice and accountability	-0.007 (0.187)	0.035 (0.004)***	0.0261. 0.040	0.040 (0.000)***			
<i>Control variables:</i>							
Inflation rate (%)	0.232 (0.000)***	0.000 (0.942)	0.001 (0.520)	0.002 (0.082)*			
GDP per capita growth rate (%)	0.0000.978	0.0010.662	0.0040.218	-0.0030.181			
<i>Dummy variable for the geographical region</i>							
LOWINCOME	-0.054 (0.000)***		-0.562 (0.000)***	-0.303 (0.000)***			
LOWERMIDDLE	-0.012 (0.288)	-0.219 (0.000)***	-0.457 (0.000)***	-0.291 (0.000)			
UPPERMIDDLE	-0.011 (0.243)	-0.199489 (0.000)***	-0.292886 (0.000)***	-0.217 (0.000)***			
Log likelihood	507.466	Log likelihood	253.936	Log likelihood	158.323	Log likelihood	273.787
Prob (LR statistic)	0.000000***	Prob (LR statistic)	0.000***	Prob (LR statistic)	0.000***	Prob (LR statistic)	0.000***
Akaike info criterion	-2.855	Akaike info criterion	-1.394	Akaike info criterion	-0.843	Akaike info criterion	-1.508
Hannan-Quinn criter.	-2.802	Hannan-Quinn criter.	-1.341	Hannan-Quinn criter.	-0.790	Hannan-Quinn criter.	-1.455
Schwarz criterion	-2.722	Schwarz criterion	-1.261	Schwarz criterion	-0.710	Schwarz criterion	-1.375

Note:

*Significant at 10% level; **significant at 5% level and ***significant at 1% level

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