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Abstract

This study investigates whether social inclusion policies promote financial inclusion. Three social inclusion policies were analyzed: gender equality policies, environmental sustainability policies and social protection policies. The study used the panel fixed effect regression methodology to analyse data from 48 low- and medium-income countries. It was found that social inclusion policies did not have a significant effect on financial inclusion, implying that social inclusion policies do not promote financial inclusion. The older population are less likely to own an account at a formal financial institution in low and medium-income countries that have strong environmental sustainability policies and institutions. The implication of the finding is that the social policies and institutions established to promote environmental sustainability can discourage the older population from keeping their wealth in formal financial institutions.

Keywords: financial inclusion, social inclusion, financial development, social policies, institutions.

JEL classification: O16, O50

1. Introduction

Social inclusion involves improving the terms on which individuals and groups take part in society (Kubota et al, 2022). Existing studies show that social inclusion can improve societal cohesion (Oxoby, 2009), strengthen national identity (McCrone and Bechhofer, 2008), improve equality (Collins, 2003) and promote entrepreneurship (Fielden and Dawe, 2004). The formulation of policies and the creation of institutions to promote social inclusion not only promotes a sense of belonging among citizens in society, but also increases social cohesion and creates social capital in society (ASI Board, 2012). In socially inclusive societies, individuals can access resources and institutions to their benefit (Oxoby, 2009). Social inclusion will increase the opportunity and dignity of individuals and groups that are disadvantaged based on their identity.[1] Also, there is a general consensus that a socially inclusive society is one where all people feel valued, their differences are respected, and their basic needs are met so that they can live in dignity[2]. Therefore, it is in the best interest of any government to develop policies and institutional structures that promote social inclusion.

On the other hand, financial inclusion involves providing access to basic financial services to every member of the population. Existing studies suggest that financial inclusion has positive benefits for the economy and for the economic well-being of the poor (Chibba, 2009; Ozili, 2020). Many national governments and international organizations are taking steps to establish and strengthen pro-financial inclusion policies and institutions.

Despite the importance of social inclusion policies and financial inclusion policies, the financial inclusion literature has not considered the role of social inclusion policies in promoting financial inclusion for individuals, businesses and the excluded groups in a country. In fact, there have been calls to think outside-the-box to identify the factors that promote financial inclusion and to look beyond the traditional economic and financial sector determinants of financial inclusion (see Bold et al., 2012; Sinclair, 2013). I respond to this call by investigating the effect of social policies

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[1] https://www.worldbank.org/en/topic/social-inclusion
[2] https://w-hbs.com/solutions/gender-social-inclusion/

on the level of financial inclusion while controlling for other important determinants of financial inclusion. First, I acknowledge that there are many social factors that can influence the level of financial inclusion in society, and it is impossible to take all the social factors into account in a single study.

In this study, I focus on three social policies and institutions: environmental sustainability policies and institutions, social protection policies and institutions and gender equality policies and institutions. I focus on these three social policies because, in recent times, individuals in developed countries are quick to protest gender inequality and gender discrimination, protest lack of social protection for vulnerable people and protest against environmental degradation, exploitation and pollution. This kind of social activism will pressure governments to develop policies that promote environmental sustainability, social protection and gender equality. Firms will also be careful to obey the rules and regulations governing environmental sustainability, social protection and gender equality to avoid negative publicity. The focus on these three social policy areas is also supported by ongoing efforts to formulate policies that reduce the frequency of social activism in societies (see Swamy, 2014; Ozili, 2019).

This study used panel regression estimation analysis to provide cross-country evidence for the relationship between social inclusion and financial inclusion. The results show that specific social inclusion policies reduce the level of financial inclusion for the older population in low and medium-income countries.

This study contributes to the literature in the following way. First, the study contributes to the financial inclusion literature that investigates the determinants of financial inclusion. Second, the study contributes to the social inclusion literature that examines the role of social inclusion policies in influencing policy outcomes (see Nicaise, 2012). Three, the study contributes to the debate about the factors that promote financial inclusion (see Grohmann et al, 2018; Chen and Divanbeigi, 2019; Ozili, 2021).

The study is structured as follows. Section 2 presents the literature review and hypothesis development. Section 3 presents the research methodology. Section 4 provides empirical results. Section 5 concludes the study.

2. Literature review

2.1. Social inclusion literature

Social inclusion ensures that all individuals and groups can participate and progress equally and fairly in society (Evers and Ewert, 2015). Omidvar and Richmond (2003) show that achieving social inclusion requires not only the removal of barriers to social inclusion, but it also requires investment and action to bring about the conditions for social inclusion. Some studies in the literature investigate the effect of social inclusion on the welfare of the individual or a group in society. For instance, Farrington and Farrington (2005) show that access to societal resources is fundamentally important in achieving greater social inclusion. They suggest that public sector institutions should work together to provide access to societal resources for members of society. Cobigo et al. (2012) identify some challenges with defining social inclusion. They argue that (i) social inclusion is at risk of being an ideology and may lead to ineffective and harmful strategies; (ii) social inclusion may be defined as the acceptance of dominant societal values and lifestyle which may lead to moralistic judgements; (iii) social inclusion may be narrowly defined and measured as productivity and independent living which is inappropriate for people with more severe disabilities; and (iv) social inclusion is often limited to the measure of one's participation in community-based activities. The literature focuses largely on the factors that promote social inclusion in societies. For instance, De la Brière and Rawlings (2006) show that social cash payments such as 'conditional cash transfer programs' (CCTs) were important tool to increase the level of social inclusion and the CCTs programs were effective. The CCTs were used as a mechanism to provide money to poor families as minimum investments in children's human capital such as regular school attendance or basic preventative health care. This program fostered social inclusion by explicitly targeting the poor, focusing on children, delivering cash transfers to women, and changing social accountability relationships between beneficiaries, service providers and governments. Sauter and Huettenmoser (2008) show that the livable streets in urban neighbourhoods were beneficial for social integration, especially streets with slow moving traffic, limited space for parking, active neighborhoods and good environmental qualities. They show that liveable streets in urban neighbourhoods were great places for public

life and social inclusion. Kinder and Harland (2004) show that engagement with art education contributed to achieving higher social inclusion. Welch et al. (2014) show that singing is a tool used to develop children's self-concept and sense of being socially included, irrespective of the singer age, sex and ethnicity. Sreekumar (2007) shows that the deployment of information and communication technologies (ICT) using small cyber kiosks increased the level of social inclusion in rural India. Van Winden (2001) supports achieving social inclusion through ICT and argues that the degree to which new ICT opportunities can be capitalized on depends to a large extent on the capacity of urban management to influence the population's use and application of ICT, and the alignment with other social inclusion policies. Fielden and Dawe (2004) examine the barriers to social inclusion for female entrepreneurs and find that the fear of failure, lack of startup capital, the fear of banks, partner's attitude, lack of knowledge, lack of affordable products and being trustworthy were significant barriers to social inclusion for female entrepreneurs. The authors suggest that agencies and funding bodies should take their products and services to women from socially deprived backgrounds in the community, rather than relying on women breaking through the boundaries imposed by their social backgrounds. Overall, the social inclusion literature shows that several factors contribute to increase the level of social inclusion in societies, however, the literature has not examined how financial inclusion is influenced by specific social inclusion policies such as social protection advocacy, environmental sustainability advocacy and gender equality advocacy. This is the gap I seek to address in this paper.

2.2. Financial Inclusion literature

In the financial inclusion literature, existing studies show evidence that certain programs or policies can help to increase financial inclusion in countries. For instance, Grohmann et al. (2018), in a cross-country study, find that financial literacy has a significant positive effect on financial inclusion and the positive effect of financial literacy holds across income levels and several subgroups within countries. Allen et al. (2016) suggest that the level of financial inclusion can increase if account holders increase the frequency of account usage. Soumaré et al. (2016) analyze the determinants of financial inclusion in Central and West Africa which are two of the least financially inclusive regions in the African continent. They find that access to formal finance in the two regions is mainly driven by individual characteristics such as gender, education, age,

income, residence area, employment status, marital status, household size and degree of trust in financial institutions. Rojas-Suárez (2016) shows that financial inclusion encourages the use of alternative financial services by the adult populations, while Turegano and Herrero (2018) show that financial inclusion contributes to reducing income inequality to a significant degree through the use of credit by low-income households and small and medium-sized enterprises. Furthermore, financial inclusion is not without its problems. Many factors can hinder the delivery of financial inclusion in a country. Muralidhar et al. (2019) argue that viewing financial inclusion from the 'access-oriented' perspective fails to consider structural weaknesses and other factors, such as power asymmetries and harmful user practices that hinder financial inclusion. Iyer (2015) contests the idea that the opening of bank accounts promotes financial inclusion in India. Iyer (2015) argues that the opening of a bank account does not gradually or suddenly inculcate the habit of saving among the poor especially when poor people have no financial capacity to save and invest coupled with their severe lack of trust in the current model of using business correspondents. Iyer suggests that the government need to rethink the current model of financial inclusion in India. Ayyagari and Beck (2015) examine the barriers to financial inclusion in developing Asia using data from a wide array of sources. They find that fewer than 27% of adults in developing Asia have an account in a formal financial institution and only 33% of enterprises report having a line of credit or a loan from a financial institution. They also observe that cost, geographic access and lack of identification are the most reported barriers to financial inclusion.

2.3. Hypothesis – Linking social inclusion and financial inclusion

Few studies in the literature link social norms with financial inclusion outcomes. For instance, Xu (2019) examines the role of social trust for financial inclusion around the world and find that social trust is a significant and positive determinant of financial inclusion after controlling for individual characteristics and country level differences in institutions and financial markets. Okello Candiya Bongomin et al. (2017) observe that social networks have a significant and positive impact on financial inclusion of poor households in rural Uganda. Also, Datta and Singh (2019) show a positive correlation between financial inclusion and human development which implies that an increase in income, education level and better health conditions increase people's awareness and willingness to take advantage of available formal financial services. Priyadarshee

et al. (2010) show financial inclusion programs will be inefficient if it is designed without social protection programs because social protection programs generate additional needs for financial services among the poor. They further argue that the delivery of financial services through post offices, built around social protection, can contribute to financial inclusion in rural communities. These studies suggest a positive relationship between social norms and financial inclusion. Therefore, I predict that establishing social inclusion policies and institutions will not only improve societal ties and reduce the frequency of social activism, but it will also bring about positive changes in the redistribution of financial resources and financial services to the excluded population in society. Therefore, I predict that social inclusion has a positive effect on financial inclusion.

H1: There is a positive association between social inclusion policies and financial inclusion.

3. Research Methodology

3.1. Sample and Data

Data for financial inclusion were extracted from the Global Findex indicators of the World Bank. Policy and institutional data were collected from the Country Policy and Institutional Assessment (CPIA) indicators in the World Bank database. Macroeconomic data were also collected from the World Economic Forum database. See table 1 for variable description. Some countries had substantial missing data for some variables. These countries were excluded from the analysis. The resulting sample yields 48 countries that have available and sufficient data. The 48 countries are low and middle-income countries. They include Afghanistan, Angola, Armenia, Bangladesh, Benin, Bolivia, Bosnia and Herzegovina, Burkina Faso, Burundi, Cambodia, Cameroon, Chad, Democratic Republic of Congo, Congo Republic, Georgia, Ghana, Guinea, Haiti, Honduras, India, Kenya, Kosovo, Kyrgyz Republic, Madagascar, Malawi, Mali, Mauritania, Moldova, Mongolia, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Rwanda, Senegal, Sierra Leone, Sri Lanka, Sudan, Tajikistan, Tanzania, Togo, Uganda, Uzbekistan, Vietnam, Yemen Republic, Zambia and Zimbabwe. The financial inclusion data were reported once in every three years: 2011, 2014 and

2017. It was assumed that the reported financial inclusion data in a year remains the same up until the next two years.

	Table 1. Variable description and source		
Variable	Description	Full Definition	Source
AC	Financial inclusion, measured by account ownership	The percentage of respondents with an account (self or together with someone else) at a bank, credit union, another financial institution (e.g., cooperative, microfinance institution), or the post office (if applicable) including respondents who reported having a debit card	International Monetary Fund
TRAN	CPIA transparency, accountability, and corruption in the public sector rating.	Transparency, accountability, and corruption in the public sector rating assess the extent to which the executive can be held accountable for its use of funds and for the results of its actions by the electorate and by the legislature and judiciary, and the extent to which public employees within the executive are required to account for administrative decisions, use of resources, and results obtained.	World Bank Group, CPIA database
SP	CPIA social protection rating.	Social protection and labor assess government policies in social protection and labor market regulations that reduce the risk of becoming poor, assist those who are poor to better manage further risks, and ensure a minimal level of welfare to all people.	World Bank Group, CPIA database
ENV	CPIA policy and institutions for environmental sustainability rating.	Policy and institutions for environmental sustainability assess the extent to which environmental policies foster the protection and sustainable use of natural resources and the management of pollution.	World Bank Group, CPIA database
GND	CPIA gender equality rating.	Gender equality assesses the extent to which the country has installed institutions and programs to enforce laws and policies that promote equal access for men and women in education, health, the economy, and protection under law.	World Bank Group, CPIA database
FS	CPIA financial sector rating	Financial sector assesses the structure of the financial sector and the policies and regulations that affect it.	World Bank Group, CPIA database
LAW	Rule of Law index	Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence	World Governance Indicators
RQ	Regulatory Quality index	Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	World Governance Indicators
SIZE	Financial development	Demand, time and saving deposits in deposit money banks and other financial institutions as a share of GDP.	International Monetary Fund
CR	Ratio of domestic credit to private sector to GDP (%)	Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment.	International Monetary Fund
PS	Political Stability and Absence of Violence/Terrorism index	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.	World Governance Indicators
ΔGDP	GDP growth, annual.	Annual percentage growth rate of GDP at market prices based on constant local currency	World Bank national accounts data

Credit: World bank

3.2. Methodology

3.2.1. Model Specification

The model estimates financial inclusion as a function of three social inclusion policy indicators while controlling for macroeconomic factors, institutional policy factors, governance factors and financial sector characteristics. The model is specified as follows:

$$AC_{i,t} = c + \beta_1 GND_{i,t} + \beta_2 ENV_{i,t} + \beta_3 SP_{i,t} + \beta_4 \Delta GDP_{i,t} + \beta_5 PS_{i,t} + \beta_6 CR_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 FS_{i,t} + \beta_9 LAW_{i,t} + \beta_{10} TRAN_{i,t} + \beta_{11} RQ_{i,t} + e_{i,t} \ldots\ldots\ldots\ldots (1)$$

AC is a vector of dependent variables: AC1, AC2, AC3 and AC4. AC1 is the dependent variable for the entire population (age, 15+). AC2 is the dependent variable for the older population (age, 60+). AC3 is the dependent variable for the young population (age, 15-34). AC4 is the dependent variable for the adult population (age, 39-59). For the explanatory variables, FS = financial sector rating (1=low to 6=high); ENV = environmental sustainability rating, the higher the better; GND = gender equality rating, the higher the better; SIZE = ratio of financial system deposits to GDP (%), the higher the better; CR = ratio of domestic credit to private sector to GDP (%), the higher the better; LAW = rule of law index, the higher the better; RQ = regulatory quality index, the higher the better; PS = political stability and absence of violence/terrorism index, the higher the better; TRAN = transparency, accountability, and corruption in the public sector rating, the higher the better; SP = social protection rating, the higher the better; and ΔGDP = gross domestic product growth rate, the higher the better.

3.2.2. Variable justification and estimation

For the explanatory variables, I used three social inclusion policy variables to capture the policies that improve the terms on which individuals and groups take part in society. The variables are the environmental sustainability CPIA rating (ENV), gender equality CPIA rating (GND) and the social protection CPIA rating (SP). For the ENV variable, I expect a positive relationship between ENV and AC because countries that have strong policies and institutions for environmental sustainability tend to experience fewer protests and riots (Broad, 1994), and financial institutions

operating in those environments tend to be more socially responsible to members of the communities by granting community members access to basic financial products or services, which leads to greater financial inclusion. Financial institutions in such countries will minimize the risk of environmental activism by ensuring that the members of the community benefit from its financial products and services to compensate for using the community's environmental resources. This would increase the participation of the poor in the financial system (Ozili, 2019). For the GND variable, I expect a positive relationship between GND and AC because countries that have strong policies and institutions that promote gender equality tend to experience fewer protests and riots relating to gender inequality, and financial institutions operating in those environments fear the legal consequence of gender discrimination and will desist from gender discrimination in the offering of financial services. This will have a positive effect for financial inclusion because women and young females will be able to own an account in financial institutions and will be able to access credit when they need it. Wang (2019) shows that women enjoy more account ownership and can make or receive digital payments in countries where women account for a larger share of the labor force and are politically empowered, implying that gender empowerment promotes financial inclusion for women. Therefore, I expect the GND variable to have a positive effect on financial inclusion. For the SP variable, I expect a positive relationship between social protection (SP) and financial inclusion (AC) because strong social protection policies are effective in addressing rising poverty and financial exclusion (Barrientos, 2008). Also, financial institutions operating in countries that have strong policies and institutions tend to support government's social policy efforts by providing access to financial services and by offering cheaper financial services to poor members in the population, thus improving the level of financial inclusion in the country.

For the financial development variables, I use two variables to capture the level of financial development: the ratio of financial system deposits to gross domestic product (SIZE) and domestic credit to private sector to GDP ratio (CR). The use of these variables is consistent with existing studies that use these variables such as Sadorsky (2011). High levels of financial development come with higher access to finance (Demirgüç-Kunt et al., 2008), and all individuals including the poor can enjoy the benefits of greater access to finance thereby increasing the level

of financial inclusion (Beck and Demirgüç-Kunt, 2008); therefore, I expect a positive relationship between the financial development variables and financial inclusion.

For the governance factors, I use the regulatory quality index (RQ) variable and the political stability index (PS) variable. Good national governance will ensure that strong regulations are put in place to ensure that financial resources and economic resources are evenly distributed in society to reduce income inequality among the poor and rich people (Law and Azman-Saini, 2012). When this happens, higher levels of regulatory quality should enhance the welfare of the poor people and have a positive effect on financial inclusion (Roe and Siegel, 2011). Similarly, a good government will ensure that public policies promote safety in order to discourage violence or terrorism that are politically motivated since the poor are often the most affected by political instability in significant ways (Moser and Mcwaine, 2006); therefore, I expect a positive relationship between the PS variable and the financial inclusion variable. The LAW variable measures the extent of rule of law in each country.[3] Park and Mercado (2015) find a positive relationship between the rule of law and financial inclusion. This is expected because countries with strong enforcement of rule of law experience higher equitable distribution of financial and economic resources for the benefit of all including the poor. Poor communities can use the courts to ensure they are not left behind or denied any significant economic and financial benefits by the government or financial institutions; therefore, I expect that strong rule of law should be positively associated with greater financial inclusion.

For the policy institutional factors, FS variable measures the quality of the financial sector's structure, policies and regulations that affect it. Countries with high financial sector rating tend to have policies and structures that encourage banks and financial institutions to distribute credit to poor borrowers and small business (Arun and Kamath, 2015). Therefore, I expect a positive relationship between the FS and AC variables. The TRAN variable measures the extent of transparency and accountability in the public sector rating. Greater transparency and

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[3] Also, individuals and communities can use the courts to compel financial institutions to provide loans to them if financial institutions do not want to lend to poor individuals due to their high risk profile.

accountability in the public sector will ensure that public policies work well for the good of everyone including poor people which would (perhaps directly or indirectly) improve the welfare of poor people. In highly transparent countries, poor individuals and communities can hold public agents accountable and pressure them to set up pro-poor policies to improve their welfare, which can subsequently increase their willingness to participate in the formal financial system and lead to greater financial inclusion (Kolstad and Wiig, 2009); therefore, I expect a positive relationship between the TRAN and AC variables. The ΔGDP variable measures the changes in economic output reflecting economic growth. Economic growth can influence the extent of financial inclusion. Kim et al. (2018) observes a significant positive relationship between financial inclusion and economic growth; therefore, I expect that there would be greater financial inclusion during periods of economic prosperity.

Finally, the estimation technique employed is the panel regression estimation method. The Hausman test indicates that the 'fixed effect' panel regression model is the appropriate model to use to estimate the data. The fixed effect regression method is used to estimate the effect of social inclusion policies and institutions on financial inclusion while controlling for heterogeneity across countries.

4. Empirical Results

4.1. Descriptive statistics

Table 2 reports the descriptive statistics. The four dependent variables (AC1, AC2, AC3 and AC4) have a high standard deviation from the mean values. The explanatory variables of interest (ENV, GND and SP) report low standard deviations, indicating that there is low deviation of the observations from the mean values. Also, the mean and median values for the explanatory variables are similar and the differences are negligible.

Table 2. Descriptive Statistics														
	AC1	AC2	AC3	AC4	ENV	GND	SP	ΔGDP	SIZE	CR	FS	PS	TRAN	RQ	LAW
Mean	24.60	21.35	23.16	27.83	3.20	3.42	3.17	4.68	27.52	27.06	3.00	-0.76	2.72	-0.62	-0.75
Median	18.36	14.72	17.22	22.29	3.50	3.50	3.25	4.81	24.17	20.44	3.00	-0.59	3.00	-0.65	-0.76
Max	91.82	89.62	94.24	91.59	4.00	5.00	4.50	20.71	69.04	111.9	4.00	0.82	4.00	1.01	0.36
Min	1.52	1.07	1.49	1.67	2.00	1.50	2.00	-28.09	5.23	3.82	1.50	-2.81	1.50	-1.93	-1.89
Std. Dev.	18.46	18.96	19.13	18.91	0.49	0.69	0.52	4.14	14.32	19.28	0.53	0.82	0.57	0.52	0.46
Observation	288	288	288	288	270	270	270	288	213	225	270	270	270	270	270

Credit: Author's work

4.2. Regression Result

I test the effect of social inclusion policies on financial inclusion for the whole population (from age 15+ year and above), focusing on the impact of ENV, GND and SP on AC1. First, I test the single effect of each of the three social inclusion policy indicators on financial inclusion. The result is reported in Columns 1 to 4 of Table 3. The ENV and GND coefficients are negative and insignificant in Columns 1 and 2 respectively while the SP coefficient is positive and insignificant, indicating that gender equality and environmental sustainability policies do not have a significant (separate) effect on the level of financial inclusion for the whole population (age, 15+). This result suggests that each of the gender equality and environmental sustainability policies when examined separately do not have a significant impact on financial inclusion for the entire population (age, 15+). For the control variables, the FS coefficient is positive and supports the proposition of Arun and Kamath (2015). The ΔGDP coefficient is positive as expected and supports the findings of Kim et al (2018). CR coefficient is positively significant as expected and supports the argument that high levels of financial development comes with higher access to finance for all (Demirgüç-Kunt et al., 2008; Beck and Demirgüç-Kunt, 2008). The RQ coefficient is positive as expected and supports the proposition that better regulations will enhance the welfare of poor people and have a positive effect on financial inclusion (Roe and Siegel, 2011). The LAW coefficient is positively significant as expected and supports the findings of Park and Mercado (2015). The SIZE coefficient is negatively significant and is contrary to the expectation.

	Table 3. Impact of social inclusion policy indicators on financial inclusion							
	Account Ownership (All Population; Age 15+)				Account Ownership (Older Population; Age 60+;)			
	AC1				AC2			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
C	51.498***	47.508***	41.261***	53.684**	72.311***	46.877*	53.787**	81.191**
	(4.02)	(2.69)	(2.89)	(2.52)	(3.63)	(1.68)	(2.39)	(2.45)
ENV	-2.288			-2.341	-7.395**			-7.362**
	(-1.18)			(-1.19)	(-2.44)			(-2.41)
GND		-1.103		-1.269		-0.096		-0.845
		(-0.29)		(-0.33)		(-0.02)		(-0.42)
SP			0.536	0.614			-1.722	-1.408
			(0.25)	(0.28)			(-0.50)	(-0.42)
ΔGDP	0.077	0.106	0.107	0.077	-0.143	-0.049	-0.051	-0.144
	(0.76)	(1.08)	(1.09)	(0.76)	(-0.91)	(-0.31)	(-0.33)	(-0.91)
SIZE	-0.327*	-0.317*	-0.313*	-0.319*	-0.844***	-0.815***	-0.833***	-0.857***
	(-1.94)	(-1.87)	(-1.83)	(-1.87)	(-3.21)	(-3.04)	(-3.09)	(-3.22)
CR	0.410***	0.407***	0.413***	0.413***	0.626***	0.622***	0.608***	0.614***
	(3.32)	(3.27)	(3.29)	(3.28)	(3.26)	(3.15)	(3.07)	(3.14)
FS	0.274	0.307	0.366	0.210	2.198	2.482	2.477	2.148
	(0.13)	(0.14)	(0.17)	(0.09)	(0.65)	(0.72)	(0.72)	(0.63)
PS	-2.088	-2.093	-2.166	-2.005	-0.436	-0.678	-0.683	-0.381
	(-1.24)	(-1.23)	(-1.28)	(-1.17)	(-0.17)	(-0.25)	(-0.26)	(-0.14)
TRAN	-6.555***	-6.698***	-6.755***	-6.395***	-6.509*	-7.273*	-7.406*	-6.542*
	(-2.65)	(-2.68)	(-2.72)	(-2.54)	(-1.69)	(-1.84)	(-1.89)	(-1.67)
RQ	2.173	1.198	1.036	2.351	4.459	0.846	0.882	4.596
	(0.50)	(0.28)	(0.24)	(0.53)	(0.66)	(0.13)	(0.13)	(0.67)
LAW	8.612*	8.802*	8.377*	8.588*	13.046*	13.029*	13.729*	13.787*
	(1.92)	(1.93)	(1.82)	(1.84)	(1.87)	(1.81)	(1.89)	(1.90)
Country and Year Fixed effect?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	97.05	97.02	97.02	97.05	91.28	90.89	90.91	91.29
Adjusted R^2	95.88	95.84	95.84	95.83	87.83	87.29	87.31	87.66
f-stat	83.15	82.33	82.32	79.05	26.46	25.23	25.28	25.16
p(f-stat)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observation	188	188	188	188	188	188	188	188
	T-statistics are reported in parenthesis. ***, **, * represent significance level of 1%, 5% and 10% respectively.							

Credit: Author's work

4.3. Additional Tests

Next, I extend the analysis to other age groups within the population, to determine whether social inclusion policies and institutions affect financial inclusion in each population age-group.

4.3.1. Older Population (AC2) (age 60 years and above)

Here, I test the effect of the social inclusion policy variables on financial inclusion for the older population (age 60+), focusing on the impact of ENV, GND and SP on financial inclusion for the older population (AC2). The results are reported in Columns 5 to 8 of Table 4. The ENV coefficient is negative and significant in Columns 5 while the SP and GND coefficients are not significant in Columns 6 and 7 respectively. Also, when I include the three social inclusion policy variables into the model in Column 8, the ENV coefficient remains significant, indicating that the policies and institutions established to promote environmental sustainability have a significant negative effect on financial inclusion via account ownership for the older population. This implies that strong environmental sustainability policies and institutions reduce the level of financial inclusion via lower account ownership for the older population.

	Account Ownership (All Population; Age 15+)				Account Ownership (Older Population; Age 60+;)			
	AC1				AC2			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
C	51.498***	47.508***		53.684**	72.311***	46.877*	53.787**	81.191**
	(4.02)	(2.69)		(2.52)	(3.63)	(1.68)	(2.39)	(2.45)
ENV	-2.288			-2.341	-7.395**			-7.362**
	(-1.18)			(-1.19)	(-2.44)			(-2.41)
GND		-1.103		-1.269		-0.096		-0.845
		(-0.29)		(-0.33)		(-0.02)		(-0.42)
SP			41.261***	0.614			-1.722	-1.408
			(2.89)	(0.28)			(-0.50)	(-0.42)
ΔGDP	0.077	0.106	0.107	0.077	-0.143	-0.049	-0.051	-0.144
	(0.76)	(1.08)	(1.09)	(0.76)	(-0.91)	(-0.31)	(-0.33)	(-0.91)
SIZE	-0.327*	-0.317*	-0.313*	-0.319*	-0.844***	-0.815***	-0.833***	-0.857***
	(-1.94)	(-1.87)	(-1.83)	(-1.87)	(-3.21)	(-3.04)	(-3.09)	(-3.22)
CR	0.410***	0.407***	0.413***	0.413***	0.626***	0.622***	0.608***	0.614***
	(3.32)	(3.27)	(3.29)	(3.28)	(3.26)	(3.15)	(3.07)	(3.14)
FS	0.274	0.307	0.366	0.210	2.198	2.482	2.477	2.148
	(0.13)	(0.14)	(0.17)	(0.09)	(0.65)	(0.72)	(0.72)	(0.63)
PS	-2.088	-2.093	-2.166	-2.005	-0.436	-0.678	-0.683	-0.381
	(-1.24)	(-1.23)	(-1.28)	(-1.17)	(-0.17)	(-0.25)	(-0.26)	(-0.14)
TRAN	-6.555***	-6.698	-6.755***	-6.395***	-6.509*	-7.273*	-7.406*	-6.542*
	(-2.65)	(-2.68)	(-2.72)	(-2.54)	(-1.69)	(-1.84)	(-1.89)	(-1.67)
RQ	2.173	1.198	1.036	2.351	4.459	0.846	0.882	4.596
	(0.50)	(0.28)	(0.24)	(0.53)	(0.66)	(0.13)	(0.13)	(0.67)
LAW	8.612*	8.802*	8.377*	8.588*	13.046*	13.029*	13.729*	13.787*
	(1.92)	(1.93)	(1.82)	(1.84)	(1.87)	(1.81)	(1.89)	(1.90)
Country and Year Fixed effect?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	97.05	97.02	97.02	97.05	91.28	90.89	90.91	91.29
Adjusted R^2	95.88	95.84	95.84	95.83	87.83	87.29	87.31	87.66
f-stat	83.15	82.33	82.32	79.05	26.46	25.23	25.28	25.16
p(f-stat)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observation	188	188	188	188	188	188	188	188

Table 4. Impact of social inclusion policy indicators on financial inclusion

T-statistics are reported in parenthesis. ***, **, * represent significance level of 1%, 5% and 10% respectively.

Credit: Author's work

4.3.2. Young Population (AC3) (age 15-34)

Next, I test the effect of social inclusion policy indicators on account ownership (the indicator of financial inclusion) for the young population, focusing on the impact of ENV, GND and SP on account ownership for the young population (AC3). The results are reported in Columns 1 to 4 of Table 5. The ENV, GND and SP coefficients are negative and insignificant in Columns 1, 2 and 3. Also, when I include the three social inclusion policy variables into the model in Column 4, the three coefficients remain insignificant. This implies that the three social inclusion policy indicators do not have a significant (separate) effect on account ownership for the young population.

4.3.3. Adult Population (AC4) (age 35 to 39 years old)

Next, I test the effect of social inclusion policy variables on financial inclusion for the adult population (age, 35 to 39). The results are reported in Columns 5 to 8 of Table 5. The ENV, GND and SP coefficients are negative and insignificant in Columns 5, 6 and 7. Also, when I include the three social inclusion policy variables into the model in Column 8, the three coefficients remain insignificant. This indicates that the policies and institutions established to promote environmental sustainability, social protection and gender equality do not have a significant effect on financial inclusion via account ownership for the adult population.

	Table 5. Impact of social inclusion policy indicators on financial inclusion							
	Account Ownership (Young Population; Age 15-34)				Account Ownership (Adult Population; Age 35-59)			
	AC3				AC4			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
C	56.893***	45.106**	35.222***	45.659**	56.629***	55.927***	52.167***	66.420***
	(3.86)	(2.50)	(2.42)	(2.09)	(3.84)	(2.77)	(3.19)	(2.71)
ENV	-3.010			-1.835	-2.046			-2.072
	(-1.38)			(-0.91)	(-0.91)			(-0.92)
GND		-1.118		-1.184		-1.778		-2.002
		(-0.29)		(-0.30)		(-0.41)		(-0.45)
SP			1.386	1.444			-0.634	-0.584
			(0.62)	(0.65)			(-0.25)	(-0.23)
ΔGDP	0.169	0.217**	0.219**	0.195*	-0.082	-0.056	-0.057	-0.082
	(1.61)	(2.16)	(2.17)	(1.88)	(-0.71)	(-0.49)	(-0.50)	(-0.71)
SIZE	-0.518**	-0.349**	-0.337*	-0.342*	-0.155	-0.145	-0.153	-0.158
	(-2.53)	(-2.02)	(-1.93)	(-1.95)	(-0.79)	(-0.74)	(-0.78)	(-0.80)
CR	0.277	0.475***	0.488***	0.487***	0.284**	0.280*	0.278*	0.276*
	(1.47)	(3.72)	(3.79)	(3.77)	(2.00)	(1.96)	(1.93)	(1.90)
FS	-0.037	-0.026	0.039	-0.093	-0.079	-0.090	-0.003	-0.186
	(0.02)	(-0.01)	(0.02)	(-0.04)	(-0.03)	(-0.04)	(-0.01)	(-0.07)
PS	-2.567	-2.553	-2.627	-2.488	-0.986	-0.939	-1.054	-0.854
	(-1.48)	(-1.46)	(-1.52)	(-1.42)	(-0.51)	(-0.48)	(-0.54)	(-0.43)
TRAN	-6.515**	-6.601**	-6.597***	-6.298**	-6.709**	-6.768**	-6.968**	-6.575**
	(-2.56)	(-2.58)	(-2.59)	(-2.44)	(-2.35)	(-2.35)	(-2.44)	(-2.27)
RQ	2.949	2.238	2.051	3.107	1.733	0.966	0.747	2.028
	(0.66)	(0.51)	(0.47)	(0.69)	(0.35)	(0.19)	(0.15)	(0.40)
LAW	7.140	7.336	6.555	6.756	10.314**	10.629**	10.569**	10.922**
	(1.55)	(1.57)	(1.39)	(1.41)	(2.00)	(2.03)	(2.00)	(2.04)
Country and Year Fixed effect?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	97.19	97.18	97.19	97.21	96.18	96.16	96.16	96.19
Adjusted R^2	96.09	96.07	96.08	96.04	94.76	94.64	94.65	94.06
f-stat	87.67	87.21	87.42	83.56	63.74	63.41	63.36	60.63
p(f-stat)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observation	188	188	188	188	188	188	188	188

T-statistics are reported in parenthesis. ***, **, * represent significance level of 1%, 5% and 10% respectively.

Credit: Author's work

4.3.4. Using Cluster index

Next, I perform a cluster analysis which is consistent with Ozili (2019). Ozili (2019) used a social inclusion composite cluster index which is derived as the average of the sum of social inclusion policy indicators. Accordingly, I introduce a cluster explanatory variable 'SD' into the model, representing social inclusion policies. The SD variable is derived as the average of the sum of the three social inclusion policy indicators. I re-run the estimation for all the population age-groups. The results are reported in columns 1 to 4 of Table 6. The SD coefficient is negative and significant in Column 2 of Table 6, whereas the SD coefficient is not significant in Columns 1, 3 and 4 of Table 6. This indicates that the policies and institutions established to promote social inclusion have a negative and significant effect on financial inclusion via account ownership for the older population and suggests that strong social inclusion policies and institutions can discourage the older population from owning accounts in formal financial institutions.

4.3.5. Social inclusion policy indicators: interaction effect

Here, I interact three social inclusion policy variables together, to detect whether there is any joint effect of social inclusion policies on financial inclusion. The result is reported in Columns 5 to 8 of Table 6. The GND*ENV*SP coefficient is insignificant in Columns 5, 6, 7 and 8. This result indicates that the interaction of the social inclusion policy variables does not have a significant joint effect on financial inclusion via account ownership for the four population groups.

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Table 6. Impact of social inclusion policy indicators on financial inclusion (Cluster Analysis)							
	AC1	AC2	AC3	AC4	AC1	AC2	AC3	AC4
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
C	55.252***	94.827***	46.107**	66.081***	41.991	37.836	58.99	30.969
	(2.93)	(3.22)	(2.38)	(3.06)	(1.04)	(0.60)	(1.42)	(0.66)
SD	-3.110	-12.804**	-1.337	-4.397				
	(-0.76)	(-2.01)	(-0.32)	(-0.94)				
GND*ENV*SP					-0.166	-0.614	0.188	-0.502
					(-0.34)	(-0.81)	(0.38)	(-0.89)
GND					0.074	6.284	-3.37	3.827
					(0.09)	(0.59)	(-0.13)	(0.49)
ENV					-0.582	-0.841	-3.841	3.261
					(-0.11)	(-0.09)	(-0.67)	(0.51)
SP					2.615	6.009	-0.837	5.481
					(0.42)	(0.62)	(-0.13)	(0.76)
ΔGDP	0.092	-0.108	0.211**	-0.076	0.074	-0.154	0.198*	-0.091
	(0.92)	(-0.69)	(2.06)	(-0.66)	(0.73)	(-0.97)	(1.89)	(-0.78)
SIZE	-0.331**	-0.869***	-0.357**	-0.165	-0.326*	-0.882***	-0.335*	-0.178
	(-1.95)	(-3.27)	(-2.05)	(-0.85)	(-1.89)	(-3.28)	(-1.88)	(-0.89)
CR	0.399***	0.584***	0.473***	0.270*	0.418***	0.632***	0.482*	0.291*
	(3.21)	(2.99)	(3.69)	(1.88)	(3.29)	(3.20)	(3.69)	(1.99)
FS	0.264	2.078	-0.011	-0.139	0.089	1.698	0.046	-0.554
	(0.12)	(0.61)	(-0.01)	(-0.06)	(0.04)	(0.49)	(0.02)	(-0.22)
PS	-2.062	-0.259	-2.582	-0.908	-2.105	-0.753	-2.374	-0.158
	(-1.22)	(-0.09)	(-1.48)	(-0.46)	(-1.21)	(-0.27)	(-1.33)	(-0.57)
TRAN	-6.671**	-6.776*	-6.645***	-6.749	-6.490**	-6.895*	-6.190**	-6.863**
	(-2.69)	(-1.75)	(-2.61)	(-2.37)	(-2.55)	(-1.75)	(-2.37)	(-2.35)
RQ	1.727	3.616	2.380	1.685	2.810	6.299	2.582	3.422
	(0.39)	(0.53)	(0.53)	(0.34)	(0.61)	(0.88)	(0.54)	(0.65)
LAW	9.226**	15.587**	7.401	11.189**	8.639*	13.977*	6.696**	11.078**
	(2.02)	(2.18)	(1.58)	(2.14)	(1.85)	(1.92)	(1.39)	(2.06)
Country and Year Fixed effect?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	97.03	91.16	97.18	96.18	97.06	91.33	97.21	96.22
Adjusted R^2	95.85	87.66	96.07	94.68	95.79	87.63	96.02	94.59
F-stat	82.64	26.06	87.23	63.77	77.12	24.65	81.54	59.47
p(F-stat)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observation	188	188	188	188	188	188	188	188

T-statistics are reported in parenthesis. ***, **, * represent significance level of 1%, 5% and 10% respectively.

Credit: Author's work

4.4. Further Discussion of Result

The result that social policies can reduce financial inclusion for the older population is not surprising. Greater social inclusion policies and institutions may not necessarily increase financial inclusion among the older population. This might be because of poor implementation of social policies and programs for older people or because low-income older people may voluntarily exit the formal financial sector. For instance, Sinclair (2013) shows that low-income people are likely to face difficulty in accessing mainstream banking services and may lack affordable access to credit. They also point out that banks may deny services to lower income customers or may withdraw their services from deprived communities (Sinclair, 2013). When this is the case, social inclusion policies and institutions may not yield the expected positive outcomes for financial inclusion. Other studies such as Ayoub et al (2021) show that social policies may not yield the intended outcomes.

5. Conclusion

This paper investigated whether social inclusion policies and institutions can promote financial inclusion. The study found that social inclusion policies and institutions, particularly environmental sustainability policies and institutions, can reduce the level of financial inclusion for the older population. This implies that older individuals are less likely to own an account at a formal financial institution in low and middle-income countries that have strong environmental sustainability policies and institutions. In the cluster analysis, the result shows that strong social inclusion policies and institutions lead to fewer account ownership for the older population.

The implication of the findings is that the policies and institutions established to promote environmental sustainability can discourage the older population from keeping their wealth in formal financial institutions in the country. Policy makers in the financial inclusion space should consider how environmental sustainability policies and programs can promote social inclusion for older individuals in their countries. Policy makers in each country should also consider how different social inclusion policies and institutions can affect the level of financial inclusion in ethnic groups and smaller communities. Finally, the results of this study could help in developing

better policies to reform the financial sector to improve the level of financial development while at the same time ensuring that financial institutions do not engage in activities that are detrimental to the environment.

The study has two limitations. First, the study used broad measures of social policy rather than specific measures of social policy such as benefit generosity, social protection expenditure and social protection coverage, which have been used in prior studies such as Scruggs and Hayes (2017) and Gschwind (2021). Another limitation of the study relates to the weakness of the World Bank's CPIA database. There are concerns that the survey used by the World Bank to obtain their CPIA data is biased and do not reflect the unique characteristics of each country especially developing countries.

Future research can investigate how other social inclusion policies and institutions may affect the level of financial inclusion across countries. Such studies should consider other indicators of financial inclusion subject to data availability. It is also interesting to investigate the role of financial education on financial inclusion for each population age group. Future studies can also re-examine the effect of social policies on financial inclusion using other types of data but not the World Bank.

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