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Diversity-inclusion nexus: assessing the role of ethnic and religious diversity in financial inclusion; a global perspective

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ABSTRACT
Diversity and financial inclusion are at the top of boardroom agendas across the financial services industry. An inclusive financial environment ensures equitable access to resources and opportunities for all. Diversity & financial inclusion is crucial for future financial management industry and its success is determined by the ability to create an inclusive culture and diverse societies. Previous studies discussed the diversity-inclusion nexus without assessing the role of ethnic and religious diversity in financial inclusion. This study empirically examines the association between ethnic and religious diversity and financial inclusion by using the dataset of 187-countries across the world. Finding shows that there is a strong positive relationship exist between financial inclusion and ethnic or religious diversity, or both. Furthermore, results are consistent for the high-, middle- and low-income countries. This study suggests that fruitful outcomes of diverse population can only be obtained by ensuring the equitable and peaceful society via cohesion. Future research can be explored these findings and confirm this by country specific implication of ethnic and religious diversity in financial inclusion.

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Ethnic and religious diversity; financial development; financial inclusion

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1. Introduction

Over the last two decades, it has been merging a popular slogan that diversity matters in economics and finance, and researchers have shifted their focus to some important unresolved concerns: wide-ranging social reforms, individual freedoms, advance of a new knowledge-based economy, and the role of diverse population in financial development. A comprehensive, global culture report (2020) and the UNESCO World Report on Cultural Diversity (2009) which seeks to highlight that globalization has made it possible to bridge cultural borders while producing goods, engaging in economic activities, and building teams.[1] These reports demonstrate that world is

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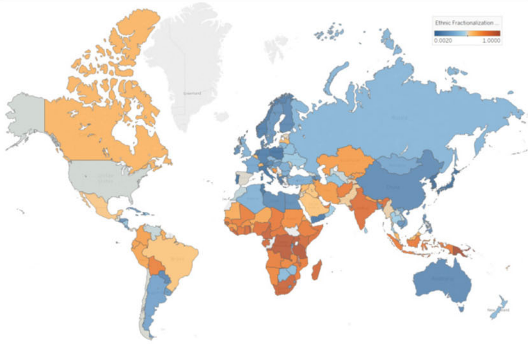
changing so fast in front of our eyes and people across the world developed socially distant habits that distorted both personal and professional life. Emerging markets are welcomed new degrees of flexibility and believed that business could still be accomplished; however, the influence—or construct—globalizations (including social and ethical) unavoidably elements may lead to cultural issues. These issues of diversity and pluralism, cultural identity and expression, cultural development and legacy are central to UNESCO's cultural mandate whether ethnic and religious identities boost the globalization process or threaten for financial development and its manifestations (Woodward et al., 2008).

We live in an increasingly complex and globalized world, where diversity has formed the structure of modern civilization that directly influence on globalization process and rapid technological progress. Companies seeking a strong presence in a range of expanding new markets that triggered a worldwide economic boom for multicultural markets, diversified workers, and untapped customer bases. Multicultural approaches and a consistent effort to merge diverse cultural and demographic diversity into an inclusive workplace that fits into the wider goal of the company's development, advancement and for success in global markets. This provides organization with several options to drive expansion by utilizing their access to a broad talent pool. The term diversity may also be used to describe and analyze the development of financial systems, particularly their heterogeneity across time. For example, one may look at whether the financial institutions, funding patterns, and corporate governance systems of multinational firms in each nation are becoming more or less similar. Finally, the most substantially, comparison across nations may be combined with the analysis over time to see whether diversity of the whole financial systems of various countries increases (decreases) or remains constant. As a result, the idea of diversity provides a way to addressing the complex issue of financial market convergence.

According to the famous scholars Francis Fukuyama and Douglas North, diversity has an impact on society because it will be closely integrated into human interaction, whether social, economic or political (Fukuyama, 2001; North, 1991). Gaede (1977) earlier argued that 'the underlying feature of society is exactly that it is social', meaning that human beings do not exist in isolation but engage with other humans. As a result, humans connect with other humans who have diverse qualities and characteristics, such as race, color, ethnicity, linguistics, and so on, resulting in greater variety across the world (Herring, 2009).

Figure 1 shows a world map chart with ethnic fractionalization zones. The dark blue regions (trending toward '0') represent a homogenous country or region. A diverse country or region (trending toward '1') is shown by dark brown regions. This diversification either heterogenous/homogenous societies are represented by Alesina et al. (2003) through ethno-linguistic fractionalization index (ELF). Culture may be assessed on a micro level, concentrating primarily on the aspects of communication and interpersonal behaviour in society, while diversity can be quantified on a macro level indicators like language, race, or religion. Social stratifications are intimately connected with diversity of society (Blau, 1977; Edensor, 2020). As the complexity of culture in the society increases, the established patterns of social relations and social



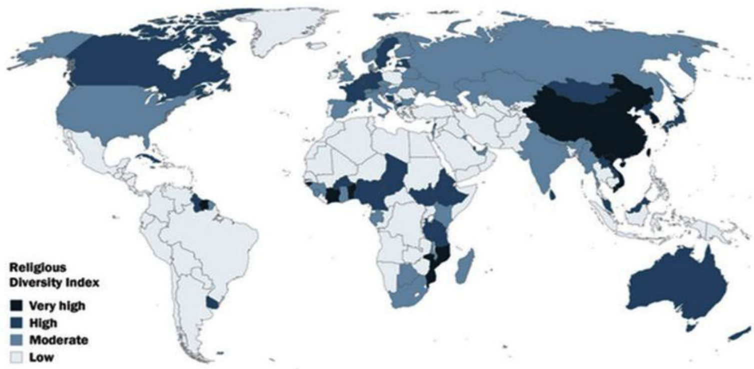
Source: Ferron (2003)

Figure 1. Level of ethnic diversity across the world. Source: Ferron (2003).

positions in the social structure become more complex as well. According to Blau (1977), the more heterogeneity in society leads to more social stratification. Social stratifications are crucial and entrenched in society to establishing the amount of variety, social interaction patterns, as well as the complexity of the social system. Numerous studies show a negative association between ethnic diversity and growth, the provision of public goods and trust, and positive relationship between ethnic diversity, wealth and production. However, these investigations have done at a broad geographic level, and do not fully comprehend the mechanisms involved.

Figure 2 shows a world map chart with religious fractionalization zones. The dark blue zones (trending toward '0') represent a very religious country or region. A low religious country or region (trending toward '1') is shown by white areas. (For more details see Ferron (2003) and Alesina et al. (2003) ethno-linguistic fractionalization index (ELF) and ethnic fractionalization index on how religious diversity index score is calculated). Due to generations of immigrant resettlement, distributional inequality, and border and boundary distortion, countries are becoming more culturally diversified; although, heterogeneity remains an unsettling and uncertain issue. Racial and ethnic minorities' identities are influenced by the majority culture, which controls the structures of power that develop sustain stereotypes and representations. In this context, diversity has emerged as one of the most critical components of any country's long-term prosperity. Diversity affects all aspects of economy and society, including emerging and developed countries (Collier, 1998).

While having a diverse workforce, firms increase creativity and foster innovation, it also challenges for less diverse labor force for their long-term organizational survivals. Companies are being forced to undergo major structural reconfiguration in all key areas of operations, marketing, employee recruiting, and management. The case for workplace diversity is strong even from a business viewpoint because it stimulates innovation, invention, and creating new ideas that cannot be possible with homogeneous environments (Amin et al., 2022). Organizations must remain alert, attentive, and successful as marketplaces become more competitive than ever before and the country's economy gets more challenging due to the crisis. To be successful in rapidly changing environment, businesses must lead rather than reacting to change.



Source: Pew research center (2014)

Figure 2. Levels of religious diversity across the world. Source: Pew Research Center (2014).

Companies with a more inclusive and diverse team are better placed to make change than companies with a more homogeneous workforce. Multicultural organizations necessitate a strong corporate culture and a structurally sound foundation. The potential benefits of diverse environment and an inclusive culture are knowledge base workforce because diversity represents the mix or make-up of an entity, it is very straightforward to accomplish in the workplace.

In recent years, the financial services industry has made significant progress in changing attitudes about ethnic diversity and financial inclusion. Business analysists have shifted their focus to looking at a coherent business environment to establishing successful business strategies that capture the business outcomes. The qualities and characteristics that distinguish an individual are referred to as diversity. Although diverse groups along with inclusion, in an organization is vital that ensures that people feel valued and respected. According to Hunt et al. (2015), organizations in the top quartile for racial and ethnic inclusiveness outscored by 36 percent in terms of profitability those in the fourth quartile. The Global Head of Diversity and Inclusion (GHDI) explains why diversity is so crucial in financial inclusion. A productive workplace culture values a diversity of viewpoints and beliefs. Companies whose employees feel comfortable asking questions and expressing ideas are more likely to try new things, come up with amazing solutions, adapt and innovate, and do better business as a outcome (Horwitz & Horwitz, 2007).

According to the International Monetary Fund (IMF),[2] 'Boosting Growth via Diversity in Financial Leadership' that expanding financial inclusion through diversity boosts economic growth. Furthermore, having a diverse financial leadership team leads to stronger financial stability, fewer non-productive loan levels, and higher profitability (Katalakute, 2019). According to the World Bank, half of the world's adult population does not have a bank account in a formal financial institution. Financial inclusion is a crucial component of people's well-being like income, health, and housing. As a means of minimizing social and financial exclusion, a person's right to utilize formal financial services must be prioritized (Amin & Ahmad, 2018). The impact of diversity on the financial market has been discussed using behavioral finance. Many studies on cultural finance have been republished, claiming that cultural factors have an impact on a country's financial growth (Kwok & Tadesse, 2006), investor behavior (Breuer et al., 2014), and financial market performance (Chang et al., 2015; Cherif & Gazdar, 2010). Most of the businesses in professional world have a conservative view regarding accepting people of diverse races, ages, genders, languages, political opinions, religious beliefs, sexual orientation, and communication styles. This discourage the managers to addressing issues of diversity because they are concerned that productivity and morale will suffer as a result; disagreements and tensions among workers may lead to employees refusing to work together (Esman, 2019). On the other hand, companies with highly diverse workforce, outperform non-diverse companies financially. Employee's willingness to work together as a team foster creativity, however, a workplace challenges come to increase with the increase in diversity at financial services markets.

Based on these linkages, it surprising why economists gave less importance to explore the influence of social indicators on financial sector. This study is going to fill this gap, how social indicators such as ethnic and religious diversity link with the financial sector. Does financial inclusion have been affected by ethnic and religious diversity? And what are channels through which diversity show the relationship with financial inclusion? One can find a few studies covering these issues, in the past at global perspective. This study aims to analyse the implications of financial inclusion through ethnic and religious diversity for better policy implementation.

The research described all sections in the following way:

In Sec. 1, the introduction section is described. It describes the behaviour finance discipline, and core indicators of the financial sector its linkages with ethnic and religious diversity. Section 2 is related to literature review. Section 3 describes the research methodology. Section 4 presents the empirical findings of ethnic and religious diversity in relationship with financial inclusion. The final Sec. 5 is together the conclusions and policy implication drawn based on empirical findings.

2. Literature review

Diversity is an emerging idea to quantify as an abstract term. Each person has their own thoughts, attitude, and physical appearance. Everyone possesses inherent characteristics as well as abilities formed by our educational and cultural experiences. There has been an increase in differences, which may make you feel unhappy or unsafe. Kim et al. (2020) examines the influence of religious and social inequality variables on financial inclusion in 152 countries, including 48 OIC countries. By using ordinary least squares (OLS), authors observed that religious diversity (whether OIC or non-OIC) and Muslim population had different influence on the determination of financial inclusion. They also found that social disparity, such as gender inequality, educational outcomes, and social opportunity achievement, are determinants of financial inclusion. They suggested that financial inclusion itself, as well as undetermined variables in neighboring countries, had an influence on financial inclusion. This study ignores the influence of ethnic diversity, which is a crucial role in financial inclusion. The success of microfinance institutions (MFIs) is linked to ethnic and linguistic fractionalization indices (Churchill & Appau, 2020). Furthermore, fractionalization enhances MFI financial success but has a detrimental influence on outreach depth.

Madni (2019) investigates how ethnic diversity, wealth inequality, and government expenditures impact Pakistan's financial institutions. The author concluded that ethnic diversity and wealth disparity are linked to the decline of institutions, and that more government investment is likely to enhance them. To minimize negative consequences on institutions, ethnic diversity must be controlled endogenously, while the growing gap between wealthy and poor must be bridged (Amin, 2019, 2020). Clients from the same ethnic group as the executives of the corrupt brokerage are more likely than clients from competing ethnic groups to continue to engage in the market after a trick and to pick another intermediary owned by members of their ethnic group (Yenkey, 2018). The findings also suggest that market misbehavior alters the market's makeup by filtering out various social groupings that are more inclined to seek higher governance norms. Churchill and Mishra (2018) explore the role of ethnic diversity in microfinance institutions (MFIs) and help the researchers in understanding levels of success differ between microfinance institutions (MFIs). They argued that MFIs do not require the awareness of the interplay between MFIs but also need to focus the implications of ethnic diversity. Fractionalization is linked to lower MFI financial performance and mission drift. However, trust and strong social networks are crucial impact mechanisms, in increasingly fractionalized nations (Altinay et al., 2014).

Guest (2019) analyzes whether ethnic diversity on boards is linked to better board monitoring results. Even for businesses with larger agency difficulties, the author finds little evidence that board ethnic diversity increases overall company performance. Salloum et al. (2019) investigate the link between demographic diversity among board members and financial success. Their findings suggest that as the number of Western ethnic minorities grows the performance of businesses. Brekke (2018) investigates how Islamic traditions contribute to Muslim financial marginalization in the West. Financial inclusion should be a top priority for countries and institutions like the World Bank. Furthermore, he argued Muslims are less integrated into the official financial system than non-Muslims across the world, but little is known regarding the extent to which Islamic standards (most notably the prohibition of interest on money) contribute to financial exclusion among Muslims in the West.

Zhao and Lounsbury (2016) illustrate how market judgement and religious diversity impact commercial and public capital flows across nations, both separately and together. They found that strong market logic boosts both commercial and public capital acquisition, but religious diversity reduces commercial capital flow. The favorable influence of market logic on capital flows is also mitigated by religious diversity.

According to Easterly and Levine (2016), ethnic diversity has a more negative impact on economic policy and growth when a government's institutions are weak. The adverse economic effects of ethnic fractionalization identified by Easterly and Levine (1997) and others are mitigated by high-quality institutions reflected in such factors as rule of law, bureaucratic quality, freedom from government expropriation, and freedom from government repudiation of contracts. When a government's institutions are weak, ethnic diversity has a greater negative impact on economic policy and growth. When ethnic diversity is substantial, however, inadequate institutions have an even greater negative impact on growth and policy. Nations with ethnically diverse populations that wish to live in peace and prosperity must develop strong institutions (Amin et al., 2021). According to Levine et al. (2014), ethnic homogeneity in the market affects bubbles, which can be resisted by diversity. Price bubbles are caused not simply by human faults or financial situations, but also by the social framework in which decisions are made. According to Hooghe et al. (2009), were shown few indicators of migration or diversity, to be substantially and consistently connected to generalized trust. The findings show that the ethnic diversity's harmful impacts on generalized trust cannot be confirmed across European countries.

To summarize, ethnic and religious diversity are closely linked to social and financial inclusion (exclusion) because various individuals have different capacities to deal with the effect of new technology, new regulations, changing customer demands, and shifts in global economic power. As a result, a new phenomenon is being developed: diversity matters in the financial sector. In the past, the banking industry suffered from a lack of representation, but that is fast changing. This research will address a gap in literature by examining either ethnic or religious diversity as a factor of financial inclusion or exclusion.

2.1. Theoretical framework

In business, diversity and financial inclusion are more crucial than ever before (Brekke, 2018). Not only can diversity improve your company's creativity and breadth, but it also boosts employee happiness, making it more appealing to new employees. Furthermore, having a diverse staff is simply the proper thing to do. It's critical for company to stay up in order for the sector to remain appealing to the next generation of professionals (Brealey et al., 2012). Traditionally, the bigger, more regulated financial services organizations have led the drive on diversity. It has been doing this for many years, with the objective of achieving inclusiveness. It has transformed the way they hire and re-examined their beliefs, which has had a beneficial influence on their workplace culture (Kwok & Tadesse, 2006). Consequently, what's the difference between financial inclusion and diversity? Individuals from various demographics, ethnicities, and cultures make up diversity. However, inclusiveness reflects how diversity is accepted across the organization. A truly inclusive culture must start at the top, flow down, and be accepted by everyone in the organization.

Financial inclusion is the provision of financial services to all members of the population, particularly the poor and other marginalized groups (Carbó et al., 2005). Financial inclusion may also be described as the provision of financial services to disadvantaged and low-income people at a reasonable cost (Dutta & Mukherjee, 2012). These definitions all have one thing in common: they highlight the need of providing financial services to all members of the population.

Financial inclusion has been a significant policy goal for many developing and growing nations, and it holds enormous promise for bringing the excluded population into the formal financial sector, allowing them access to formal financial goods and services (Kim et al., 2020). Many countries are working hard to attain high levels of financial inclusion for their citizens' benefit. There are several financial inclusion success stories throughout the world, including in India (Nimbrayan et al., 2018), Rwanda (Otioma et al., 2019), Kenya (Hove & Dubus, 2019), and Peru (Cámara & Tuesta, 2015).

The policy literature contains many idealistic interpretations of how to achieve financial inclusion, whereas academic literature focuses primarily on the relationship between financial inclusion and poverty levels and income inequality, as well as the economic impact of financial inclusion (D. Brown & McGranahan, 2016; Cámara & Tuesta, 2014; Kim et al., 2020). Theories can explain why different people have varied perspectives about what financial inclusion goals should be and how to attain them. Theories may explain current findings in financial inclusion practice as well as abnormal aberrations in practice, allowing for the development of a cohesive and complete framework of financial inclusion principles. As a result, a strong financial inclusion theory or collection of theories is one that provides a framework of concepts to explain the goals, processes, and consequences of financial inclusion.

This study goals to investigate macro level linkages between ethnic and religious diversity and financial inclusion that are crucial for long-term financial sector growth. In this regard, a hypothetical model is developed to determine the direct link between diversity and financial sector development for further empirical investigation, such as:

H1: Ethnic and religious diversity does not affect the financial inclusion

We use the standard specification and the Hunt et al. (2015) model to examine the direct influence of ethnic diversity on financial inclusion.

Whereas:

$$
\begin{aligned}
FI_{it} = {} & a_i + \beta_1 ED + \beta_2 RD_{it} + \beta_3 GDPPC_{it} + \beta_4 FDI_{it} + \beta_5 LR_{it} + \beta_6 CI_{it} \\
& + \beta_7 GDPPC{*}ED_{it} + \beta_8 FDI{*}ED_{it} + \beta_9 LR{*}ED_{it} + \beta_{10} CI{*}ED_{it} + a_i + \varepsilon_{it}
\end{aligned}
$$

In the given equation, i denotes cross sections and t represents time, financial inclusion index (FI), ethnic diversity (ED), religious diversity (RD), foreign direct investment (FDI), literacy rate (LR), GDPPC (income per capita), corruption perception index (CI), unobserved time-invariant individual impact a_t, and error term ε_{it}.

The main dependent variable is the financial inclusion index (FI), which measures a variety of activities such as account, saving, and loans, as well as access dimensions such as ATMs and bank branches, and barriers dimensions such as trust, affordability, distance, and documents, using principal component analysis (PCA). Data taken from the World Bank's Global Financial Development Database (GFDD).[3]

The ethnic and religious polarization index are our main independent variable. Alesina et al. (2003) formula was used to construct these indices. These indices have ranges from 0 to 1, indicates how much ethnic and religiously diverse the country. Both forms of diversity foster a strong culture inside the business, which may help to strengthen connections with worldwide partners and consumers, boost morale, leverage talents and abilities across the organization. Financial services businesses may be motivated by diversity to improve internal and third-party compliance methods by incorporating new diversity and inclusion policies, metrics, and reporting. Diversity is part of a wider trend in the financial services sector toward more openness, as well as increasing demand on board members and top management to lead their firms through cultural transformation.

The literacy rate is used to determine the amount of knowledge and comprehension of the benefits of a financial product, including how, when, and where to invest, as well as having access to a bank account, branches, and loans. Financial services such as biometric ATMs, mobile-based payment systems, smart cards, and telecentres can help accomplish the objective of financial inclusion by requiring literacy (Kim et al., 2020). The bidirectional link between GDP per capita income and financial inclusion is utilized. Financial inclusion is more frequent in countries with higher GDP per capita. These countries have a higher level of bank literacy, save more money, and can provide more securities. As a result, banking services markets are more likely to succeed (Bove & Elia, 2017).

CI is an essential control variable that influences financial inclusion both directly and indirectly. Financial inclusion also has a bidirectional casualty relationship. Corruption causes an increase in nonperforming loans and a decline in the banking sector's soundness (Bolgorian, 2011). Companies with ties to politicians are eligible for credit lines, but their default rates are greater ex-post, resulting in high levels of nonperforming loans for banks. Furthermore, greater the risk a financial system faces where the more corrupt a country is (Bernile et al., 2018). The opposite viewpoint is that corruption 'lubricates the gears' of bank operations. Speed money would allow people to circumvent administrative delays (Mauro, 1995). According to Chen et al. (2006) corruption is an enabling element for private enterprises' access to greater bank loans. Another major predictor of financial growth that promotes financial inclusion is foreign direct investment (FDI). The financial system increases a country's absorptive capacity for FDI inflows by allowing for more efficient resource allocation.

3. Description of statistical methods and data source

This section discusses the approaches and methods used in this study for empirical analysis. Earlier literature on financial development, financial inclusion reveals that cross-section analysis or panel data is more suitable for empirical analysis (Bove & Elia, 2017; Duanmu & Guney, 2013). This study has presented results from both cross-section and panel data regressions. We constructed the index of financial inclusion (FI) which measured through principal component analysis (PCA) mixture activities of usages dimension (account, saving, loans), access dimension (number of ATM's) bank branches and barriers dimensions (trust, affordability, distance, documents) respectively. Data retrieved from the Global Financial Development Database (GFDD), World Bank.[4] For the definitions of all the variables, descriptions, and data sources, see annex-III at the appendix.

The ethnic fractionalization index of Alesina et al. (2003), which has been widely employed as a proxy in numerous empirical investigations, is used to quantify ethnic and religious diversity. Diversity is essentially time invariant data, meaning that relatively little change happens through time. This study avoids utilizing yearly data (due to reduced variance in diversity data) and instead constructs an index based on data collected every five years from 1990 to 2015 (1990, 1995, 2000, 2005, 2010 and 2015). This time period was chosen because it optimizes the availability of data, mostly from the Cline Center for Democracy database at the University of Illinois in Chicago, USA,[5] at https://clinecenter.illinois.edu/projects/research-themes/Religious-Ethnic-Identity.

Formula of ethnic fractionalization index (EFI) is representing as

$$\mathrm{EFI}_{\mathrm{j}} = 1 - \sum_{\mathrm{i}=1}^{\mathrm{N}} \mathrm{Z}_{\mathrm{ij}}^{2}$$

In the country j, Z_{ij} is the share of group i in the total population ($i = 1, \ldots, N$). The ethnic fractionalization index has a range of 0 to 1. The number zero indicates a homogenous country, whereas the number one indicates a total diverse country.

When using panel data analysis and neglecting any country or time specific effects that may exist among cross-sections and time series units, the model definition becomes heterogeneous. As a result, parameter estimations will become useless and inconsequential (Hsiao, 1986; Sayrs, 1989). Fixed effects and random effects models were shown to be more effective for handling panel data to account for probable country heterogeneity (Gujarati & Porter, 2003; Wooldridge, 2010). Fixed effects, on the other hand, would be perfect in our sample since they can account for unobserved nations and temporal fixed effects.[6] We use panel fixed effect estimators to estimate our baseline models. Fixed effect models group time-invariant variables with time-invariant effects together or separate them off. Model stability has been assessed using post-estimation testing.[7]

4. Results

This section shows the empirical findings regarding the relationship between diversity (ethnic and religious) and financial inclusion rigorously. Table 1 shows the nexus between diversity and financial inclusion for 187-nations (for all countries), while Tables 2–4 represent the association for high-, middle-, and low-income countries.

This study shows very interesting findings between dependent and independent variables. Table 1 shows the direct relationship between ethnic and religious diversity and financial inclusion (by creating index of usages dimension; account, saving, loans, access dimension: number of ATMs, bank branches and barriers dimensions; trust, affordability, distance, documents respectively). The results pointed-out that diversity (ethnic and religious) has a significant positive association with financial inclusion. It indicates that diversity either ethnic or religious both have enormous support for financial inclusion as confirmed by the H1. These findings are consistent with previous research, such as the fact that diversity promotes financial market growth (Baier & Bergstrand, 2001; Collier et al., 2000; Watkins & Ferrara, 2005; Yanikkaya, 2003). However, one may establish the link between diversity and financial inclusion through their socioeconomic cost in certain study. If gender diversity is well-

Table 1. Effects of ethnic and religious diversity on financial inclusion (Model-I for all countries).

	Dep. Variable: index of financial inclusion				
Variables	(1)	(2)	(3)	(4)	(5)
ED	0.254***	0.064**	0.107***	0.389**	0.460**
	(0.106)	(0.087)	(0.123)	(0.124)	(0.271)
RD	0.252**	0.352*	0.004	3.262**	0.152**
	(0.134)	(0.104)	(0.013)	(1.405)	(0.019)
GDPPC	0.425*	0.301	4.131*	1.518 **	0.120
	(0.275)	(0.106)	(1.708)	(3.422)	(0.286)
FDI	0.154	0.073	0.503*	0.011	0.412***
	(0.127)	(0.068)	(0.206)	(0.041)	(0.122)
LR	0.023	0.008	0.001	0.016	0.423
	(0.093)	(0.052)	(0.003)	(0.011)	(0.160)
Corr	0.046	−0.096	−0.004	−5.194	−0.523*
	(0.176)	(0.030)	(0.003)	(4.182)	(0.336)
GDPPC*ED		1.373	2.638	0.089**	6.081
		(0.255)	(1.264)	(0.036)	(3.625)
FDI*ED			1.016***	0.054*	0.031*
			(2.773)	(0.039)	(0.717)
LR*ED				−0.545*	0.158
				(2.677)	(24.71)
Corr*ED					−7.339
					(2.908)
N	315	256	216	246	270
R^2	0.447	0.544	0.469	0.341	0.581
Adj. R^2	0.198	0.309	0231	0.202	0.156
F-Stat	1.64	9.67	7.22	6.24	7.24

Notes: Financial inclusion index is measured through principal component analysis (PCA) mixture activities of usages dimension; account, saving, loans, access dimension: number of ATMS, bank branches and barriers dimensions; trust, affordability, distance, documents respectively. Values of standard errors are in parentheses ( ).
(***), (**), (*) show the level of significance at 1%, 5% and 10%, respectively.
Source: Authors' own calculations.

established, shareholder interactions focus on pushing corporations to take advantage of the benefits associated with gender diversity, such as enhanced decision-making, supervision, and financial performance, according to the United Nations (UN) report 2017. Roberson and Park (2007) found a positive correlation between diversity and book-to-market equity, as well as a U-shaped curve between diversity and sales, net income, and book-to-market equity.

Tang et al. (2016) discovered that diversity can help people become more financially included, although the effect differs by nations. In high-development and legal-system-quality countries, diversity has a good influence on the financial market, and vice versa. According to Weller and Zulfiqar (2013), diversity is linked to faster development, broader credit markets, and a lower risk of asset bubbles, all of which might contribute to increased stability. Dutta and Mukherjee (2012) argued that individuals' views about financial markets alter as society changes in the form of increasing trust, control, or other attributes, and they engage in more financial transactions. Considering multiple dimensions of culture, trust is a key cultural trait, should positively influence financial market. Hofstede's cultural dimension should negatively influence the development of the financial market; an alternate cultural dimension of Hofstede's measures, should be positively correlated with financial sector development (Dutta & Mukherjee, 2015).

Table 2. Effects of ethnic and religious diversity on financial inclusion (High income countries, Model-II).

	Dep. Variable: index of financial inclusion				
Variables	(1)	(2)	(3)	(4)	(5)
ED	0.214*	0.453**	0.347**	0.312*	0.467***
	(0.144)	(0.025)	(0.205)	(0.011)	(0.200)
RD	0.566*	0.043**	0.475**	1.99**	1.374**
	(0.376)	(0.030)	(0.480)	(0.095)	(0.581)
GDPPC	0.073	0.001*	0.119*	0.028**	0.002*
	(0.021)	(0.003)	(0.045)	(0.027)	(0.007)
FDI	0.012	0.406**	0.012*	0.016**	0.010***
	(0.006)	(0.210)	(0.011)	(0.008)	(0.012)
LR	0.002	4.121*	0.034	0.024	0.003
	(0.006)	(1.340)	(0.016)	(0.008)	(0.002)
Corr	13.77	0.039	0.095	4.199	0.429**
	(3.975)	(0.081)	(9.724)	(5.404)	(1.451)
GDPPC*ED		0.360	0.500	0.013	0.026
		(0.160)	(0.275)	(0.045)	(0.012)
FDI*ED			0.200***	3.021**	0.473
			(0.110)	(4.226)	(9.652)
LR*ED				0.120	0.005
				(0.041)	(0.012)
Corr*ED					3.392
					(1.272)
N	232	230	220	217	252
R^2	0.122	0.385	0.191	0.163	0.241
Adj. R^2	0.095	0.351	0.164	0.123	0.218
F-Stat	4.59	7.01	7.00	4.09	10.46

Notes: Financial inclusion index is measured through principal component analysis (PCA) mixture activities of usages dimension; account, saving, loans, access dimension: number of ATMS, bank branches and barriers dimensions; trust, affordability, distance, documents respectively. Values of standard errors are in parentheses ( ).
(***), (**), (*) show the level of significance at 1%, 5% and 10%, respectively.
Source: Authors' own calculations.

Many scholars have stated that ethnic diversification may be a source of productivity and creativity because various ethnic groups have diverse productive talents that complement each other. Diversity brings with it a wide range of talents, experiences, and cultures, all of which may be beneficial and contribute to innovation and creativity. Because diversity necessitates intergroup negotiation, it aids in the formation of steady development. As a result, diversity is a strength in stimulating public debate, which is essential for the formation of a stable, non-coercive, development-oriented state.

Fractionalization can make societies better and secure, and ethnic diversity has a positive impact on financial sector development since it creates a stable, non-coercive, innovation state through intensive public dialogue, reduces the risk of civil war, enhances diverse productivity and innovation, and lays the groundwork for improved private sector efficiency. Finally, the data implies that the findings improve ethnic fractionalization's impact on financial market growth. As a result, the findings support the developing view that ethnic diversity has a favorable impact on the financial markets.

Furthermore, number of control variables were included in the empirical research, including GDPPC, FDI, LR, and the corruption perception index. Table 1 illustrates that the corruption index has been identified as a key indicator that has a considerable favorable influence on the growth of the financial industry. These findings

Table 3. Effects of ethnic and religious diversity on financial inclusion (Middle income countries, Model-III).

	Dep. Variable: index of financial inclusion				
Variables	(1)	(2)	(3)	(4)	(5)
ED	0.304**	0.999 *	0.992***	0.796**	0.834***
	(1.273)	(0.986)	(0.818)	(5.102)	(4.004)
RD	0.300***	1.535*	1.557*	0.506**	0.579*
	(0.260)	(2.098)	(0.209)	(3.444)	(0.191)
GDPPC	0.708	1.743	0.403	0.457*	0.209
	(0.324)	(3.063)	(0.749)	(1.451)	(0.564)
FDI	1.217**	2.581**	0.180	1.406**	0.850*
	(1.55)	(4.680)	(0.029)	(3.045)	(2.073)
LR	1.175	1.007	0.832	0.129	0.193
	(2.77)	(2.420)	(0.642)	(0.325)	(0.448)
Corr	−0.998	−2.444	−0.869	−2.661	−1.84
	(3.019)	(3.910)	(0.927)	(5.801)	(4.249)
GDPPC*ED		1.858	0.301	1.872	1.345
		(4.148)	(0.645)	(4.778)	(3.704)
FDI*ED			1.565**	1.421**	1.52***
			(0.012)	(2.453)	(3.003)
LR*ED				−2.190	−1.95
				(5.073)	(5.947)
Corr*ED					−0.081
					(0.139)
N	256	233	251	239	298
R^2	0.087	0.166	0.344	0.351	0.516
Adj. R^2	0.058	0.135	0.309	0.325	0.487
F-Stat	2.97	5.33	9.67	17.38	9.41

Notes: Financial inclusion index is measured through principal component analysis (PCA) mixture activities of usages dimension; account, saving, loans, access dimension: number of ATMS, bank branches and barriers dimensions; trust, affordability, distance, documents respectively. Values of standard errors are in parentheses ( ).
(***), (**), (*) show the level of significance at 1%, 5% and 10%, respectively.
Source: Authors' own calculations.

similar with Mouselli et al. (2016) and Shahbaz et al. (2013) in that corruption greases the wheels of the economy by speeding transactions and helping private enterprises to overcome government-imposed inefficiencies. Increased money flow within and outside countries, as well as increased corruption. This extra cash boosts the operations of the financial markets while also growing the underground market. By indicating a negative link between corruption and financial inclusion, these findings contradict Bolgorian (2011), Yartey (2010), and Cherif and Gazdar (2010). However, there is no correlation between financial inclusion and GDP per capita or gender equality. GDP per capita and gender equality have an indirect association with financial activities, implying a direct link to societal well-being (Kabeer & Natali, 2013; Masoud, 2013).

Tables 2–4 indicate the empirical findings of ethnic and religious diversity on financial inclusion for high-, middle- and low-income countries. All these tables indicate that ethnic and religious both are significant positive relationship with financial inclusion. There is no doubt that the financial inclusion programs and policies adopted in some countries have been successful. Yet, the major influence that financial inclusion may improve the financial system for the poor and vulnerable customers in society each consumer can get the benefit from financial institutions. Financial inclusion allows people who have never been involved in the official financial sector

Table 4. Effects of ethnic and religious diversity on financial inclusion (Low income countries, Model-IV).

	Dep. Variable: index of financial inclusion				
Variables	(1)	(2)	(3)	(4)	(5)
ED	0.050*	4.474*	0.140***	0.159**	0.233*
	(0.123)	(0.097)	(0.017)	(0.5982)	(0.007)
RD	0.196**	0.254	0.112**	0.463***	0.360*
	(0.385)	(0.796)	(0.340)	(1.453)	(0.974)
GDPPC	−9.180*	−9.807**	−9.210*	−6.530*	−4.869*
	(4.011)	(5.080)	(2.810)	(3.326)	(2.447)
FDI	−0.194	−0.033	0.266	−0.155	−0.515
	(0.179)	(0.046)	(0.298)	(0.260)	(0.802)
LR	−1.328	−1.743	−0.328	−1.221	−1.063
	(2.047)	(2.989)	(0.235)	(2.039)	(1.658)
Corr	0.398	0.516*	2.382	0.131	0.493
	(0.402)	(0.452)	(2.114)	(0.277)	(0.755)
GDPPC*ED		0.568	−0.291	−1.874	−0.714
		(0.231)	(0.252)	(1.631)	(0.994)
FDI*ED			3.091	0.652	1.994
			(2.881)	(0.251)	(0.282)
LR*ED				−2.549*	−2.74
				(5.463)	(5.95)
Corr*ED					2.633**
					(3.141)
N	151	162	164	191	170
R^2	0.263	0.485	0.339	0.420	0.526
Adj. R^2	0.223	0.418	0.297	0.346	0.473
F-Stat	6.57	7.27	4.12	5.46	9.86

Notes: Financial inclusion index is measured through principal component analysis (PCA) mixture activities of usages dimension; account, saving, loans, access dimension: number of ATMS, bank branches and barriers dimensions; trust, affordability, distance, documents respectively. Values of standard errors are in parentheses ( ).
(***), (**), (*) show the level of significance at 1%, 5% and 10%, respectively.
Source: Authors' own calculations.

or who have been a long away from utilizing financial goods to do so. Our findings are comparable to Chang et al. (2015), who found that investor with different ethnic and religious background is important in financial market speculation and bubble models. Investors from linguistically different places express more diversified perspectives and trade stocks more actively.

Financial inclusion is beneficial for all the countries including high-, middle- and low-income countries (Tables 2–4). In this regard, there are best practice examples such as China, South Asia, India, Singapore and Malaysia where there are numerous religions, races, cultures but take advantage of holding and successfully mixing majority/minority groups in new globalization. They celebrate many ethnic and religious holidays and have a particular regard for one another. Apart from conflict and prejudice, these peaceful countries accepted its diversity. There has been significant progress, while establishing diversity and respect for people all around the world.

In mostly high- and middle-income countries, where societies become more cohesive and more investors participate in economic activities, hence improving the financial market. However, several researchers used the socioeconomic cost to justify the link between diversity and financial inclusion. Financial inclusion requires a well-functioning financial system, continuous financial innovation, improvements in organizational and institutional quality, increased market competitiveness with lower transaction costs, and the effective use of physical and human capital (Hartmann et al., 2017). Diversity may encourage financial inclusion, however effect differs from country to country.

High- and middle-income countries, the interaction term of ethnic diversity with FDI have a significant positive impact on financial inclusion via creating new ideas, invention, and innovation (Tables 2 and 3). Because high-income nations are more civilized and place a high moral value on variety, high-income and middle-income countries routinely outperform low-income countries in terms of commerce and institutional quality. Low-income nations will need to pursue economic changes to encourage productive engagement of poorer households, civil action, social cohesiveness, and the development of new competitive advantages (Amin, 2021; Fukuyama, 2001; Woolcock & Narayan, 2000). In this context, social policies may be important in low-income nations, but they are ineffective without supporting education, healthcare policy, a secure living, labor productivity, and economic progress. To promote financial inclusion in low-income countries, good institutional quality is required via establish a cohesive society.

Our findings show that in addition to economic and institutional quality indicators, ethnic and religious diversity should be considered when assessing financial inclusion as a strategy for economic growth. The social and environmental components of sustainable development cannot be deal independently, and ethnic equality must be prioritized. The concept of social cohesiveness and harmony is critical to achieving the desirable outcomes of ethnic fractionalization. When ethnic diversity reflects abilities, experiences, and cultures, it may lead to innovation and creativity. Because diversity necessitates intergroup cohesiveness, it may be beneficial to ensuring sustainable growth. Groups with disparate interests but equal rights will struggle, pushing compromise on growth-oriented policies from which everyone may grow. Roberson and Park (2007) found a positive link between diversity and book-to-market equity, as well as a U-shaped curve between diversity and sales, net income, and book-to-market equity.

The ethnic diversity with interaction term to corruption index has revealed a robust indication in low-income countries and a considerably favorable association with financial inclusion (Table 4). Our findings are similar to Mouselli et al. (2016) and Shahbaz et al. (2013) that corruption has a positive impact on financial market development, such as lubricating the wheels of the economy in low-income countries by expediting transactions and allowing private firms to overcome government-imposed inefficiencies. Table 4 shows that when corruption rises, so does money circulation both within and outside low-income nations. This extra cash boosts the operations of the financial markets while also boosting the underground economy. These findings contradict to Bolgorian (2011), Yartey (2010), and Cherif and Gazdar (2010), who claim that corruption and financial market development are mutually exclusive. The association between literacy rate and financial inclusion is modest but not negligible. Literacy rate has an indirect association with financial activity, but it is primarily tied to societal well-being (Kabeer & Natali, 2013; Masoud, 2013).

5. Conclusion and policy implication

This study explores the association between ethnic and religious diversity and financial inclusion at a global perspective. The study solves the puzzle whether ethnic and religious diversity has a direct impact/effect on financial inclusion or not. This study shows the relationship between diversity (Ethnic and religious) and various dimensions of financial inclusion by using a dataset of 187 countries across the world. Financial inclusion is an essential component of a country's macroeconomic stability. The findings reveal a robust and positive association between ethnic and religious diversity and financial inclusion (including high-, middle- and low-income countries). It also means ethnic and religious diversity enhances financial inclusion. Hence, ethnic and religious diversity have important implications to improve the environment of financial inclusion that ultimately enhance economic development. The diversity also involved more people in bounding the institutional rules (informal and formal) as they remain treated equally in society in all aspects (Ananiev et al., 2011; Mathieson et al., 2008). However, sometimes ethnic and religious diversity also cause higher socioeconomic cost, less social network, creating more conflict among diversified groups which in turn, more excluded peoples and bad institutional quality (Easterly et al., 2006).

Ethnic and religious diversity have a significant positive influence on international market in high- and middle-income nations by generating innovative thinking, creativity, and innovation. As high-income nations seem to be more civilized and set a high moral value on multiculturalism, high-income and middle-income countries usually surpass low-income countries in terms of trade and institutional quality. Low-income nations will need to pursue economic changes to encourage productive engagement of poorer communities, civil activism, social cohesiveness, and the development of new competitive advantages (Fukuyama, 2001; Woolcock & Narayan, 2000). In this context, social policies can play an important role in low-income nations, but without support for education, health system, and a stable environment, productivity and economic growth are essentially meaningless. To promote social inclusion in low-income nations, good institutional quality is required the socio-economic lives of individuals in numerous ways to establish a cohesive community.

Our finding suggests that, in addition to economic and institutional aspects, ethnic and religious diversity should be considered when assessing financial inclusion as a strategy for economic growth. The social and environmental components of sustainable development cannot be dealt apart, and ethnic equality must be emphasized. The concept of social cohesiveness and harmony is critical to achieving the desirable outcomes of ethnic fractionalization. Since ethnicity is a natural phenomenon and cannot be controlled, institutional role and civil involvement are critical in mitigating ethnic group effects on financial inclusion for sustainable growth. According to the debate above, multi-ethnic communities should adopt policies and improve institutions for long-term economic growth, which necessitates broad participation in the political process by all groups of people.

It's important to understand that diversity is a multi-dimensional phenomenon cultural, socioeconomic, political, geographical, demographic and dynamic in nature—and it difficult to assume that the variables studied here are the only factors that predict diversity and financial inclusion. However, the present research does not investigate various other financial factors which may influence financial growth, such as political stability, infrastructure quality, and public policies. For example, this research does not examine the influence of the Gini index on wealth inequality in response to financial inclusion, either within or between nations. It basically investigates the link between ethnic and religious diversity and financial sector development on a macro/aggregated level. As a result, it's better for generalizing about sub-regional units like cities, provinces, and districts, as well as comparing regions to places.

Availability of data and materials

Availability of data is free to access and mentioned sources in appendix (suppl.file).

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. *For more detail see,* Global *Culture Report, (2020), O.C. Tanner at* https://us.res.keymedia.com/files/file/White-papers/Global%20Culture%20Report%202020.pdf. *and the UNESCO World Report on Cultural Diversity (2009)* https://unesdoc.unesco.org/ark:/48223/pf0000185202.
2. *See David Lipton, "Boosting growth through diversity in financial leadership," International Monetary Fund, April 13, 2019, imf.org; and Toddi Gutner, "Banks run by women might be less vulnerable in a crisis," Wall Street Journal, February 21, 2016, wsj.com.*
3. *See the appendix, for definitions, description and data sources of all the variables used in this thesis.*
4. *See the appendix, for definitions, description and data sources of all the variables used in this thesis.*
5. *For more information about data source, see annexure-I in appendix,*
6. *The study employed the Hausman test to choose between fixed and random effect models. The Hausman test indicated that a fixed effect model, static panel estimator is a superior estimator among all models in all derived from analysis.*
7. *Our study used post-estimation model tests into all models to see whether there were any violations of assumptions, auocorrelationship, or heterosedasticity. All of the models used White's robust standard errors correction in this regard. For accurate significance analyses, White's robust standard errors account for probable cross-section heteroscedasticity and simultaneous correlation among cross-sections, and they only alter the standard errors, not just the estimators.*

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