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## The Nexus Of Socio Economic Inclusion In Global South

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### ABSTRACT

The term "Global South" primarily refers to developing countries. Developed countries, underdeveloped countries, low-income economies, or third world countries that have fallen out of favor. South South Cooperation (SSC) has expanded in order to "challenge the North's political and economic dominance," and focused SSC activities have been renewed. The main objective is to develop mechanisms to promote the participation of people experiencing poverty and social exclusion in policy development and implementation. The existing literature provides more attention on socioeconomic exclusion in global south nation as characterized as developing nation. The Human Development Index (HDI) is a composite measure of a country's average achievements in three basic aspects of human development: health, knowledge, and standard of living. The Financial inclusion considered as economic inclusion is an enabler for the seventh of the seventeen Sustainable Development Goals, and the World Bank Group considers it a key enabler to reduce extreme poverty and boost shared prosperity. This study has made an attempts to measure financial inclusion using a cross country data set from Financial Access Survey (FAS) and the index of financial inclusion (IFI) developed by Sarma (2012). Then it presents an empirical analysis of the relationship between financial inclusion and human development across countries in global south. Therefore the present study focused on the socioeconomic inclusion with the help of Human development index and financial inclusion index for the year 2022. This article investigates the relationship between financial inclusion and human development index positions in 138 countries throughout the global south. The purpose of this study is to investigate the nexus between financial inclusion and human development for global south nations, and analyze the relation between financial inclusion and human development. The study examines the effect of IFI on the human development index (HDI) at the aggregate level.

**Index Terms:** Financial Inclusion, Human Development Index, Sustainable Development, Digital Economy.

## I. Introduction

The terms "Global North" and "Global South" have been used to distinguish between developed and developing countries. The Global North tends to be wealthier and less unequal, while the Global South largely corresponds to developing countries and the Eastern world. The Global South is a synonym for terms such as developing countries, least-developed countries, underdeveloped countries, low-income economies, or the now out-of-favor "Third World" countries. South-South Cooperation (SSC) has increased to challenge the political and economic dominance of the North and has renewed targeted SSC efforts. The Dictionary of Human Geography defines development as "processes of social change or [a change] to class and state projects to transform national economies." Economic development refers to advancements in technology, a transition from an economy based largely on agriculture to one based on industry, and an improvement in living standards. Other factors that contribute to the conceptualization of what a developed country is include life expectancy and levels of education. Social inclusion is the process of improving the terms on which individuals and groups take part in society—enhancing the ability, opportunity, and dignity of those disadvantaged based on their identity. Economic inclusion means that all consumers have access to safe, secure, and affordable financial products and services. Transaction accounts at insured depository institutions offer consumers a safe place to keep deposits, conduct financial transactions, and build savings. Therefore, the Human Development Index (HDI) and Financial Inclusion Index (FII) are both taken into consideration to measure socio-economic inclusion in Global South nations for the period of 2022.

The World Bank (2014) defines financial inclusion as "enabling all people and businesses to have access to useful and affordable financial goods and services that satisfy their requirements and are provided in a responsible and sustainable manner." The Sustainable Development Goals (SDGs) include human development in four of their goals: no poverty, good health and well-being, quality education, and decent work. However, only one-third of adults worldwide have access to a bank account, and half of them are impoverished women living in rural families or not working.

In 2019, the global HDI was 0.737, indicating that all high-income nations have a high degree of human development. Human growth in upper-middle-income nations ranges from very high and high (>0.6) to medium and low (>0.3). Except for one country with medium human development, all low-income nations in lower-middle-income categories have poor human development. Despite this, the causality between financial participation and human development, as well as its effects across various income categories, is not well-supported by the available data. Financial inclusion, which ensures access to basic financial services for all groups of people, has become a global agenda. The Community Reinvestment Act (1997) in the US, the law on exclusion (1998) in France, the Financial Inclusion Task Force in the United Kingdom, Mzansi (2004) in South Africa, and the no-frills accounts and General Credit Card schemes of the Reserve Bank of India all highlight the importance of financial inclusion. However, most poor people in the world lack access to these services. This study suggests that governments and policymakers should adopt policies to promote innovative financial tools and technological improvements. Additionally, governments should focus on targeting higher levels of financial inclusion to reap its potential positive impact on human development.

This study uses the Index of Financial Inclusion (IFI) developed by Sarma (2012) to measure financial inclusion across countries. This method is extended by adding an insurance indicator and comparing it with the Human Development Index (HDI) to analyze the relationship between financial inclusion and human development. The paper is organized as follows: it discusses financial inclusion, provides a literature review, outlines the methodology for constructing the index, presents the broad relationship between IFI and HDI, and concludes the paper.

## II. Review of Literature

Financial growth is positively associated with human development, with Schumpeter (1912) suggesting that it is essential for entrepreneurs to drive technological innovation. Hicks (1969) argued that financial development can lead to increased savings and investment inputs, as well as capital accumulation and technological enhancements. Levine (1997) emphasized the financial sector's role in fostering economic growth and development. Empirical studies have explored the relationship between financial inclusion and human development. Sarma and Pais (2008) found a high correlation between the Financial Inclusion Index (IFI) and the Human Development Index (HDI) in 49 countries. Blando (2013) identified Canada as having the highest financial inclusion rating, while Egypt had the highest level of financial exclusion. Pearson's correlation coefficient ( $r = 0.86$ ) revealed a strong positive correlation. Nanda and Kaur (2016) computed a cross-country index of financial inclusion in 68 countries from 2004 to 2012 to determine the degree of association between financial inclusion and human development. Their findings also highlighted a strong and significant correlation. Datta and Singh (2019) constructed an IFI and examined its association with human development across 102 countries for 2011 and 2014. The correlation coefficient between IFI and HDI was found to be high and significant in high-income countries, moderate but significant in middle-income groups, and moderately high in low-income groups. Ababio et al. (2020) investigated the effects of human development on financial inclusion in 20 frontier markets from 2005 to 2014. Human development was proxied using the HDI, while financial inclusion was represented by indicators such as the number of ATMs per adult, mobile cellular usage, fixed telephone numbers, and Internet usage. Control variables included exports of goods, corruption levels, foreign direct investment (FDI), and rule of law. The study concluded that low human development could lead to low financial inclusion and emphasized that enhancing financial inclusion through the banking sector is crucial for stimulating human development. Thathsarani et al. (2021) identified financial inclusion as a significant factor in human capital development in South Asian nations, emphasizing the importance of financial literacy to encourage active participation in financial systems. Adetunji and David West (2019) found that financial literacy and income levels are key drivers of demand for financial services. Geraldtes et al. (2022) highlighted that a high level of financial inclusion requires strong financial knowledge.

## III. Objectives of the Study

The primary objective of this study is to present the current scenario of financial inclusion and the Human Development Index (HDI) for 138 nations in 2022. After establishing the current status, the study further examines the nexus between financial inclusion and human development in Global South nations.

## IV. Research Hypotheses

Based on the objectives, the study is structured with the following hypotheses:

1. There is no positive correlation between financial inclusion and human development among the 138 nations in the Global South.
2. There is no inequality in the status of the Financial Inclusion Index and the Human Development Index among Global South nations.

## V. Methodology

This research paper is based on secondary data collected from the IMF FAS, UNDP, Sub national HDI Global Data Lab (2022), EPW Research Foundation, and relevant journals. It covers 138 countries in the Global South and focuses on the year 2022. The Financial Inclusion Index (FII) was constructed based on four dimensions: availability of banking services, access to banking services, usage of banking services, and the insurance dimension. Table 1 outlines the four dimensions and their related variables with respective limits.

**Dimension 1 – Availability of Banking Services:** This dimension indicates that an inclusive financial system should have as many users as possible. The proportion of people having a bank account measures the banking penetration of the system. It includes: (a) Branches of commercial banks, (b) Number of commercial bank branches per 1,000 km<sup>2</sup>, and (c) Number of ATMs per 1,000 km<sup>2</sup>.

**Dimension 2 – Access to Banking Services:** This dimension assesses accessibility and consists of: (a) Deposit accounts with commercial banks, (b) Borrowers from commercial banks, and (c) Loan accounts with commercial banks.

**Dimension 3 – Usage of Banking Services:** The usage of banking services is crucial. Merely having a bank account is insufficient; actual usage, such as credit, deposits, payments, remittances, and transfers, is essential. This dimension includes: (a) Outstanding deposits with commercial banks (% of GDP), and (b) Outstanding loans from commercial banks (% of GDP).

**Dimension 4 – Insurance:** The insurance dimension plays a significant role in financial inclusion by managing risks and protecting against unexpected financial losses. According to the IMF FAS, the number of life insurance policies per 1,000 adults is used as a measure of financial inclusion in this study.

This study calculates financial inclusion index (IFI) for 138 countries in all over the world and is carried out for the year 2022. The formulas used are:

$$D_i = \frac{A_i - m_i}{M_i - m_i} \dots \dots \dots (1)$$

$$IFI_i = 1 - \frac{\sqrt{(1 - D_1)^2 + (1 - D_2)^2 + \dots + (1 - D_n)^2}}{\sqrt{n}} \dots \dots \dots (2)$$

$$IFI_i = 1 - \frac{\sqrt{(1 - d_1)^2 + (1 - d_2)^2 + (1 - d_3)^2}}{\sqrt{n}} \dots \dots \dots (3)$$

A scale of measurement 0 (zero means no financial inclusion) to 1 (one means high financial inclusion). Depending on the values of IFI, states are categorized into four categories (i)  $0.8 < IFI \leq 1$  –very high financial inclusion, (ii)  $0.6 \leq IFI < 0.8$  –high financial inclusion, (iii)  $0.4 \leq IFI < 0.6$  –Medium financial inclusion and (iv)  $< 0.4$  –low financial inclusion.

**Table 2 Financial Inclusion Index Classification**

Financial Inclusion Index Category	Index Value
Very High Financial Inclusion Index	Above 0.800
High Financial Inclusion Index	0.600 to 0.800
Medium Financial Inclusion Index	0.400 to 0.600
Low Financial Inclusion Index	<0.400

The Human Development Index (HDI) is an index that measure key dimensions of human development. The three key dimensions are: 1) A long and healthy life measured by life expectancy, 2) Access to education

measured by expected years of schooling of children at school entry age and mean years of schooling of the adult population, 3) A decent standard of living measured by Gross National Income per capita adjusted for the price level of the country. In this study, we have taken Human Development Index of 138 countries the 2022 year. According to Human Development Report (2022), HDI classifications are based on HDI fixed cutoff points, which are derived from the quartiles of distributions of the component indicators. The cutoff points are HDI of less than 0.550 for low human development, 0.550–0.699 for medium human development, 0.700–0.799 for high human development and 0.800 or greater for very high human development.

## VI. Analysis and Result Discussions

Table 3 presents the south globe (138 nations) status of IFI value and rank for the year 2022. The countries are placed into four categories depending on their IFI values. Very high IFI countries are categorized as those having IFI values between 0.8 and 1. High IFI countries are categorized as those having IFI values from 0.6 to 0.8. Medium IFI countries are those having IFI values from 0.4 to 0.6. Low IFI countries have IFI values less than 0.4.

**Table3: South Globe Nations IFI Index Value and Rank 2022**

Economy	D1	D2	D3	D4	IFI VALUE	IFI RANK
United Arab Emirates	0.579	0.2512	0.099	0.0418	0.9711	1
Uruguay	0.8859	0	0.0217	0.0003	0.9079	2
HongKong	0.41	0.2	0.2003	0.0895	0.8998	3
Oman	0.4459	0.231	0.1478	0.0731	0.8978	4
China	0.7016	0.119	0.0626	0.0009	0.8841	5
Qatar	0.6523	0.1	0.0831	0.041	0.8763	6
Guadeloupe	0.5109	0.2248	0.1237	0.0004	0.8597	7
Colombia	0.3909	0.4274	0.0265	0.0081	0.8529	8
Bahrain	0.5021	0.2069	0.1127	0.0269	0.8486	9
Bulgaria	0.6009	0.1778	0.0367	0.0004	0.8157	10
Seychelles	0.5668	0.1909	0.0335	0.0073	0.7985	11
Aruba	0.4312	0.2262	0.1159	0.0236	0.7969	12
Jamaica	0.4654	0.262	0.0576	0.0081	0.7931	13
Panama	0.4078	0.233	0.0914	0.0513	0.7835	14
Kuwait	0.5713	0.101	0.0539	0.0322	0.7584	15
Palau	0.4062	0.2423	0.1034	0.0023	0.7542	16
Cuba	0.4167	0.2068	0.1036	0.0236	0.7507	17
Chile	0.4742	0.2	0.0549	0.0207	0.7498	18
Thailand	0.4995	0.1667	0.0467	0.0199	0.7328	19
St Vincent & Grenadines	0.5101	0.2001	0.0114	0.0042	0.7258	20
SaudiArabia	0.4094	0.1841	0.1318	0.0001	0.7254	21
Suriname	0.4101	0.3001	0.0104	0.0042	0.7248	22
Iran, Islamic Rep. of	0.6669	0	0.0296	0.0278	0.7244	23
Kazakhstan, Rep. of	0.4023	0.2	0.1118	0.0054	0.7195	24
India	0.463	0.201	0.0354	0.0144	0.7138	25
Türkiye, Rep. of	0.4679	0.1	0.133	0.003	0.7039	26
Philippines	0.4519	0.111	0.1048	0.0341	0.7017	27
Trinidad and Tobago	0.3444	0.13	0.1322	0.091	0.6976	28
Honduras	0.3481	0.113	0.1358	0.1006	0.6976	29
Libya	0.3711	0.2671	0.0246	0.023	0.6858	30
Maldives	0.5555	0.1022	0.0198	0	0.6774	31

Azerbaijan	0.3512	0.2431	0.0764	0.0012	0.6719	32
Argentina	0.4392	0.2175	0.0063	0.0081	0.6711	33
Mauritius	0.5839	0.0129	0.059	0.0153	0.6711	34
DominicanRep.	0.2279	0.2264	0.1021	0.1038	0.6603	35
Palestine(West Bank & Gaza)	0.3481	0.2035	0.1031	0.0045	0.6592	36
Fiji,Rep.of	0.3884	0.101	0.1364	0.0291	0.6549	37
Indonesia	0.4202	0.109	0.1114	0.011	0.6516	38
BruneiDarussalam	0.374	0.1028	0.1293	0.0416	0.6477	39
Kiribati	0.3014	0.2892	0.0478	0.0083	0.6467	40
Tajikistan	0.521	0.109	0.0118	0.0031	0.6449	41
SouthAfrica	0.4112	0.201	0.0312	0.0015	0.6449	42
Mongolia	0.4104	0.201	0.0305	0	0.642	43
Malaysia	0.3793	0.1556	0.0683	0.0319	0.6351	44
SriLanka	0.501	0.119	0.0118	0.0031	0.6349	45
Tonga	0.4992	0.1	0.0315	0.0005	0.6312	46
Brazil	0.5075	0.11	0.0109	0.0017	0.6302	47
Bahamas	0.4939	0.102	0.0322	0.0004	0.6285	48
Algeria	0.2817	0.1123	0.132	0.1001	0.6261	49
CapeVerde	0.4129	0.1281	0.0268	0.0568	0.6246	50
Paraguay	0.3859	0.113	0.125	0.0007	0.6245	51
Turkmenistan	0.3044	0.2201	0.0032	0.091	0.6187	52
Mexico	0.3988	0.199	0.0146	0.0058	0.6182	53
Uzbekistan	0.5202	0.0758	0.0174	0.0001	0.6135	54
CostaRica	0.4401	0.1503	0.012	0.01	0.6123	55
Barbados	0.3287	0.11	0.1475	0.0248	0.611	56
Peru	0.4563	0.1279	0.0204	0.0041	0.6087	57
Jordan	0.3081	0.193	0.0736	0.0303	0.6049	58
Samoa	0.4605	0.1007	0.0352	0.0038	0.6002	59
Morocco	0.3983	0.101	0.0534	0.0367	0.5895	60
Dominica	0.3874	0.154	0.0362	0.0117	0.5892	61
Iraq	0.462	0.1	0.0127	0.013	0.5878	62
Côte d'Ivoire	0.301	0.207	0.0518	0.0271	0.587	63
Ghana	0.3173	0.222	0.0295	0.0182	0.587	64
Antigua and Barbuda	0.2447	0.103	0.1332	0.104	0.5849	65
Grenada	0.4373	0.078	0.057	0.0053	0.5776	66
Mauritania	0.3265	0.1026	0.146	0.0002	0.5753	67
Lao People's	0.3149	0.123	0.1309	0.0008	0.5696	68
Guyana	0.3272	0.112	0.1125	0.012	0.5636	69
Ecuador	0.305	0.2184	0.0268	0.0127	0.5629	70
Nicaragua	0.3386	0.122	0.0392	0.0622	0.562	71
Bolivia	0.4232	0.101	0.0254	0.0077	0.5573	72
Venezuela	0.3061	0.2064	0.0356	0.0042	0.5523	73
Lebanon	0.4303	0.1152	0.0009	0.002	0.5483	74
São Tomé & Príncipe	0.3361	0.1564	0.0456	0.0091	0.5472	75
Timor Leste	0.2361	0.2564	0.0456	0.0091	0.5472	76
Tuvalu	0.3077	0.201	0.0331	0.0051	0.5469	77
Tunisia	0.3977	0.101	0.0431	0.0031	0.5449	78
Egypt,	0.3526	0.1493	0.0345	0.0035	0.5398	79
Gabon	0.3044	0.1	0.1031	0.0291	0.5366	80
Equatorial Guinea	0.3809	0.141	0.002	0.0033	0.5272	81

KyrgyzRep.	0.3899	0.1177	0.0132	0.0031	0.5239	82
Vietnam	0.3399	0.11	0.0648	0.0053	0.52	83
Gambia,The	0.3967	0.108	0.0112	0.0008	0.5168	84
Kenya	0.3773	0.1	0.0175	0.0178	0.5126	85
Pakistan	0.2241	0.269	0.0129	0.0063	0.5123	86
Belize	0.2932	0.1609	0.0416	0.0003	0.496	87
ElSalvador	0.2016	0.2	0.0802	0.01	0.4918	88
SolomonIslands	0.273	0.1019	0.0094	0.1	0.4843	89
Syrian	0.3012	0.1504	0.0223	0.0091	0.483	90
Djibouti	0.2159	0.104	0.1209	0.0393	0.4802	91
Haiti	0.2306	0.1128	0.0825	0.049	0.475	92
GuineaBissau	0.3202	0.104	0.0486	0	0.4728	93
Micronesia	0.2396	0.12	0.0884	0.024	0.4721	94
Vanuatu	0.3204	0.1	0.0489	0.0001	0.4694	95
Bhutan	0.3057	0.1	0.0542	0.0076	0.4675	96
Bangladesh	0.2955	0.1327	0.023	0.0049	0.4562	97
Madagascar	0.329	0.109	0.007	0	0.445	98
Botswana	0.3144	0.1065	0.0189	0.0008	0.4407	99
Guatemala	0.3094	0.1	0.0212	0.0097	0.4403	100
Liberia	0.3215	0.081	0.031	0.002	0.4356	101
Angola	0.1459	0.264	0.0145	0.0013	0.4258	102
Malawi	0.3214	0.1	0.0038	0.0003	0.4255	103
Cameroon	0.2017	0.2121	0.0081	0.0032	0.4251	104
Cambodia	0.2427	0.108	0.0409	0.0323	0.4239	105
Myanmar	0.287	0.0971	0.0177	0.0213	0.423	106
Namibia	0.3144	0.0113	0.0779	0.0031	0.4067	107
Lesotho	0.2702	0.1035	0.0152	0.0176	0.4065	108
Congo	0.2061	0.1473	0.0245	0.0252	0.4031	109
Zimbabwe	0.2512	0.1334	0.0045	0.0131	0.4021	110
Yemen	0.2561	0.1064	0.0356	0.0011	0.3992	111
Eswatini	0.2592	0.11	0.0023	0.0198	0.3914	112
Eritrea	0.2034	0.1423	0.0341	0.0081	0.3879	113
Senegal	0.2649	0.1	0.0225	0.0005	0.3879	114
Mozambique	0.2688	0.1	0.0181	0.0009	0.3878	115
Togo	0.2628	0.101	0.0237	0	0.3875	116
Zambia	0.2591	0.1138	0.0076	0.0063	0.3869	117
Rwanda	0.1614	0.1135	0.1095	0.0011	0.3855	118
Mali	0.2582	0.1	0.0164	0.002	0.3766	119
Nepal	0.2259	0.101	0.0447	0.0013	0.3729	120
Burundi	0.2316	0.1318	0.0023	0.0063	0.372	121
Sudan	0.2546	0.101	0.0063	0.0055	0.3675	122
Somalia	0.2031	0.1471	0.0041	0.0023	0.3566	123
Guinea	0.2084	0.1015	0.0444	0.0003	0.3546	124
Afghanistan	0.1201	0.0295	0.2028	0.0006	0.353	125
Congo	0.1599	0.088	0.0506	0.05	0.3485	126
Comoros	0.2433	0.1001	0.0022	0.0003	0.346	127
Nigeria	0.1611	0.098	0.036	0.041	0.3361	128
Papua New Guinea	0.1401	0.101	0.0904	0.0011	0.3325	129
Central Africa	0.2591	0.0564	0.0069	0.0041	0.3265	130
Sierra Leone	0.2023	0.1031	0.0012	0.0091	0.3157	131

Ethiopia	0.2032	0.101	0.0018	0.0032	0.3093	132
Tanzania	0.2011	0.1002	0.0041	0.0031	0.3085	133
Benin	0.147	0.112	0.014	0.0305	0.3035	134
Uganda	0.138	0.1454	0.0055	0.0003	0.2893	135
Niger	0.1175	0.1	0.0061	0	0.2235	136
SouthSudan	0.111	0.1005	0.0036	0.0004	0.2155	137
Chad	0.2076	0.0022	0.0036	0.0009	0.2071	138

Source: Author's own calculation.

Note: The IFI values calculated in this table are based on the data from FAS data base of IMF.

The number of countries for which IFI is calculated depends on the availability of data on the four dimensions. It is evident from the table that different countries are at different levels of financial inclusion. Out of 138 countries, the extent level of financial inclusion score varies in all four dimensions. In availability index the level of financial inclusion varies from Uruguay (0.8859) to South Sudan (0.1110) and 0.3527 is the mean score of this dimension. The level of financial inclusion varies from Colombia (0.4274) to Chad (0.0022) and 0.1427 is the mean score for accessibility dimension. In terms of usage dimension the level varies from China (0.2003) to Chad (0.0036) and the mean score is 0.0513 whereas in insurance dimension, it varies from Antigua (0.1040) to Vanuatu (0.0176) and the mean score is too low as 0.0176 (table 4).

**Table 4 Extent of Financial Inclusion**

Extent of FII	D1	D2	D3	D4	Overall FI value
Maximum Value:	0.8859 (Uruguay)	0.4274 (Colombia)	0.2003 (China)	0.1040 (Antigua)	0.9711 (UAE)
Minimum Value:	0.1110 (South Sudan)	0.0022 (Chad)	0.0036 (Chad)	0.0001 (Vanuatu)	0.2071 (Chad)
Mean Value:	0.3527	0.1427	0.0513	0.0176	0.5603

The aggregative of four dimensions score of financial inclusion varies from UAE (0.9711) to Chad (0.2071). The data reveals that there is a huge gap exists in each dimension of financial inclusion in south globe nations especially in usage and insurance dimensions.

Very High IFI countries: The average of very high financial inclusion is 0.881 and this category shared by 10 out of 138 nations. Countries that have high IFI values are as follows: United Arab Emirates, Uruguay, Hong Kong, Oman, China, Qatar, Guadeloupe, Colombia, Bahrain and Bulgaria. As seen from the table, majority of the high IFI countries are high income countries.

High IFI countries: The average of high financial inclusion is 0.677 and this category shared by 49 out of 138 nations. Countries that have high IFI values are as follows: Seychelles, Aruba, Jamaica, Panama, Kuwait, Palau, Cuba, Chile, Thailand, St Vincent & Grenadines, Saudi Arabia, Suriname, Iran, Islamic Rep. of, Kazakhstan, Rep. of, India, Turkey, Rep of, Philippines, Trinidad and Tobago, Honduras, Libya, Maldives, Azerbaijan, Argentina, Mauritius, Dominican Rep., Palestine (West Bank & Gaza), Fiji, Rep. of, Indonesia, Brunei Darussalam, Kiribati, Tajikistan, South Africa, Mongolia, Malaysia, Sri Lanka, Tonga, Brazil, Bahamas, The, Algeria, Cape Verde, Paraguay, Turkmenistan, Mexico, Uzbekistan, Rep. of, Costa Rica, Barbados, Peru, Jordan and Samoa.

Medium IFI countries: The average of medium financial inclusion is 0.504 and this category shared by 51 out of 138 nations. Countries that have medium IFI values are as follows: Morocco, Dominica, Iraq, Côte d'Ivoire, Ghana, Antigua and Barbuda, Grenada, Mauritania, Islamic Rep. of, Lao People's Dem. Rep., Guyana, Ecuador, Nicaragua, Bolivia, Venezuela, Lebanon, São Tomé & Príncipe, Timor-

Leste, Tuvalu, Tunisia, Egypt, Arab Rep. of, Gabon, Equatorial Guinea, Rep. of, Kyrgyz Rep., Vietnam, Gambia, The, Kenya, Pakistan, Belize, El Salvador, Solomon Islands, Syrian Arab Rep., Djibouti, Haiti, Guinea-Bissau, Micronesia, Federated States of, Vanuatu, Bhutan, Bangladesh, Madagascar, Rep. of, Botswana, Guatemala, Liberia, Angola, Malawi, Cameroon, Cambodia, Myanmar, Namibia, Lesotho, Congo and Zimbabwe.

Low IFI Countries: The average of low financial inclusion is 0.340 and this category shared by 28 out of 138 nations. Countries that have medium IFI values are as follows: Yemen, Eswatini, Kingdom of, Eritrea, Senegal, Mozambique, Togo, Zambia, Rwanda, Mali, Nepal, Burundi, Sudan, Somalia, Guinea, Afghanistan, Congo, Comoros, Union of the, Nigeria, Papua New Guinea, Central African Rep., Sierra Leone, Ethiopia, Tanzania, United Rep., Benin, Uganda, Niger, South Sudan and Chad.

## VII. Relationship between IFI & HDI

A comparison of index of financial inclusion (IFI) with human development index (HDI) for 138 nations has been presented along with their ranks (See Table 5). Human Development Index for the countries has been taken from Human Development Report 2022. Three indices have been considered for the calculation of HDI which are income index, education index and health index.

According to table 5, the data reveals the most of the nation's stands with very High FI-Index is positively associated high HDI position. However, there few exceptional findings observed that the country Nepal has High HDI value with 0.602 (90th rank) but its FI-Index is low as 0.3729 with the rank of 120th in global south.

**Table 5 Index of Financial Inclusion and Human Development Index 2022**

Economy	FI-INDEX		HDI		Variance	
	Value	Rank	Value	Rank	Value	Rank
United Arab Emirates	0.9711	1	0.911	2	0.0601	1
Uruguay	0.9079	2	0.809	18	0.0989	16
HongKong	0.8998	3	0.952	1	0.0522	2
Oman	0.8978	4	0.816	13	0.0818	9
China	0.8841	5	0.768	30	0.1161	25
Qatar	0.8763	6	0.855	7	0.0213	1
Guadeloupe	0.8597	7	0.853	8	0.0067	1
Colombia	0.8529	8	0.752	37	0.1009	29
Bahrain	0.8486	9	0.875	4	0.0264	5
Bulgaria	0.8157	10	0.795	23	0.0207	13
Seychelles	0.7985	11	0.785	27	0.0135	16
Aruba	0.7969	12	0.879	3	0.0821	9
Jamaica	0.7931	13	0.709	57	0.0841	44
Panama	0.7835	14	0.805	19	0.0215	5
Kuwait	0.7584	15	0.831	11	0.0726	4
Palau	0.7542	16	0.767	32	0.0128	16
Cuba	0.7507	17	0.764	33	0.0133	16
Chile	0.7498	18	0.855	6	0.1052	12
Thailand	0.7328	19	0.8	22	0.0672	3
St Vincent & Grenadines	0.7258	20	0.751	38	0.0252	18
Saudi Arabia	0.7254	21	0.875	5	0.1496	16
Suriname	0.7248	22	0.731	47	0.0062	25
Iran, Islamic	0.7244	23	0.774	29	0.0496	6

Kazakhstan	0.7195	24	0.811	15	0.0915	9
India	0.7138	25	0.633	79	0.0808	54
Turkey	0.7039	26	0.838	10	0.1341	16
Philippines	0.7017	27	0.699	64	0.0027	37
Trinidad and Tobago	0.6976	28	0.81	16	0.1124	12
Honduras	0.6976	29	0.621	84	0.0766	55
Libya	0.6858	30	0.718	53	0.0322	23
Maldives	0.6774	31	0.747	39	0.0696	8
Azerbaijan	0.6719	32	0.745	41	0.0731	9
Argentina	0.6711	33	0.842	9	0.1709	24
Mauritius	0.6711	34	0.802	21	0.1309	13
Dominican	0.6603	35	0.767	31	0.1067	4
Palestine	0.6592	36	0.699	63	0.0398	27
Fiji	0.6549	37	0.73	49	0.0751	12
Indonesia	0.6516	38	0.705	61	0.0534	23
Brunei Darussalam	0.6477	39	0.829	12	0.1813	27
Kiribati	0.6467	40	0.624	83	0.0227	43
Tajikistan	0.6449	41	0.685	70	0.0401	29
South Africa	0.6449	42	0.713	56	0.0681	14
Mongolia	0.642	43	0.739	45	0.097	2
Malaysia	0.6351	44	0.803	20	0.1679	24
Sri Lanka	0.6349	45	0.782	28	0.1471	17
Tonga	0.6312	46	0.745	42	0.1138	4
Brazil	0.6302	47	0.754	36	0.1238	11
Bahamas	0.6285	48	0.812	14	0.1835	34
Algeria	0.6261	49	0.745	40	0.1189	9
Cape Verde	0.6246	50	0.662	76	0.0374	26
Paraguay	0.6245	51	0.717	54	0.0925	3
Turkmenistan	0.6187	52	0.745	43	0.1263	9
Mexico	0.6182	53	0.758	35	0.1398	18
Uzbekistan	0.6135	54	0.727	50	0.1135	4
Costa Rica	0.6123	55	0.809	17	0.1967	38
Barbados	0.611	56	0.79	25	0.179	31
Peru	0.6087	57	0.762	34	0.1533	23
Jordan	0.6049	58	0.72	52	0.1151	6
Samoa	0.6002	59	0.707	58	0.1068	1
Morocco	0.5895	60	0.683	72	0.0935	12
Dominica	0.5892	61	0.72	51	0.1308	10
Iraq	0.5878	62	0.686	69	0.0982	7
Côte d'Ivoire	0.587	63	0.55	105	0.037	42
Ghana	0.587	64	0.632	80	0.045	16
Antigua and Barbuda	0.5849	65	0.788	26	0.2031	39
Grenada	0.5776	66	0.795	24	0.2174	42
Mauritania	0.5753	67	0.556	104	0.0193	37
Lao People's Dem. Rep.	0.5696	68	0.607	87	0.0374	19
Guyana	0.5636	69	0.714	55	0.1504	14
Ecuador	0.5629	70	0.74	44	0.1771	26
Nicaragua	0.562	71	0.667	74	0.105	3
Bolivia	0.5573	72	0.692	66	0.1347	6
Venezuela	0.5523	73	0.691	68	0.1387	5

Lebanon	0.5483	74	0.706	60	0.1577	14
SãoTomé & Príncipe	0.5472	75	0.618	85	0.0708	10
Timor Leste	0.5472	76	0.607	88	0.0598	12
Tuvalu	0.5469	77	0.641	78	0.0941	1
Tunisia	0.5449	78	0.731	48	0.1861	30
Egypt	0.5398	79	0.731	46	0.1912	33
Gabon	0.5366	80	0.706	59	0.1694	21
Equatorial Guinea	0.5272	81	0.596	92	0.0688	11
Kyrgyz	0.5239	82	0.692	67	0.1681	15
Vietnam	0.52	83	0.703	62	0.183	21
Gambia	0.5168	84	0.5	119	0.0168	35
Kenya	0.5126	85	0.575	99	0.0624	14
Pakistan	0.5123	86	0.544	106	0.0317	20
Belize	0.496	87	0.683	71	0.187	16
El Salvador	0.4918	88	0.675	73	0.1832	15
Solomon Islands	0.4843	89	0.564	101	0.0797	12
Syrian Arab	0.483	90	0.577	97	0.094	7
Djibouti	0.4802	91	0.509	116	0.0288	25
Haiti	0.475	92	0.535	108	0.06	16
Guinea-Bissau	0.4728	93	0.483	121	0.0102	28
Micronesia	0.4721	94	0.628	81	0.1559	13
Vanuatu	0.4694	95	0.607	89	0.1376	6
Bhutan	0.4675	96	0.666	75	0.1985	21
Bangladesh	0.4562	97	0.661	77	0.2048	20
Madagascar	0.445	98	0.501	118	0.056	20
Botswana	0.4407	99	0.693	65	0.2523	34
Guatemala	0.4403	100	0.627	82	0.1867	18
Liberia	0.4356	101	0.481	122	0.0454	21
Angola	0.4258	102	0.586	95	0.1602	7
Malawi	0.4255	103	0.512	114	0.0865	11
Cameroon	0.4251	104	0.576	98	0.1509	6
Cambodia	0.4239	105	0.593	93	0.1691	12
Myanmar	0.423	106	0.585	96	0.162	10
Namibia	0.4067	107	0.615	86	0.2083	21
Lesotho	0.4065	108	0.514	113	0.1075	5
Congo	0.4031	109	0.479	125	0.0759	16
Zimbabwe	0.4021	110	0.593	94	0.1909	16
Yemen	0.3992	111	0.455	128	0.0558	17
Eswatini	0.3914	112	0.597	91	0.2056	21
Eritrea	0.3879	113	0.492	120	0.1041	7
Senegal	0.3879	114	0.511	115	0.1231	1
Mozambique	0.3878	115	0.446	129	0.0582	14
Togo	0.3875	116	0.539	107	0.1515	9
Zambia	0.3869	117	0.565	100	0.1781	17
Rwanda	0.3855	118	0.534	110	0.1485	8
Mali	0.3766	119	0.428	131	0.0514	12
Nepal	0.3729	120	0.602	90	0.2291	30
Burundi	0.372	121	0.426	132	0.054	11
Sudan	0.3675	122	0.508	117	0.1405	5
Somalia	0.3566	123	0.361	138	0.0044	15

Guinea	0.3546	124	0.465	127	0.1104	3
Afghanistan	0.353	125	0.478	126	0.125	1
Congo	0.3485	126	0.479	124	0.1305	2
Comoros	0.346	127	0.558	102	0.212	25
Nigeria	0.3361	128	0.535	109	0.1989	19
Papua New Guinea	0.3325	129	0.558	103	0.2255	26
Central African	0.3265	130	0.404	134	0.0775	4
Sierra Leone	0.3157	131	0.48	123	0.1643	8
Ethiopia	0.3093	132	0.435	130	0.1257	2
Tanzania.	0.3085	133	0.411	133	0.1025	0
Benin	0.3035	134	0.525	111	0.2215	23
Uganda	0.2893	135	0.525	112	0.2357	23
Niger	0.2235	136	0.4	135	0.1765	1
South Sudan	0.2155	137	0.385	137	0.1695	0
Chad	0.2071	138	0.394	136	0.1869	2

**Source:** Authors own calculation

Note: Pearson Chi-Square:111.518, df: 9, P=0.000 significant at <0.005.

Table 7 reveals that IFI and HDI for the countries seem to move in the same direction and closely with each other, although few exceptions exist. It is statistically proved by the fact that the correlation coefficient between IFI and HDI values and ranks was calculated to be 1 and 0.870 respectively implying significant positive correlation between the two indices. This result shows that the states with relatively high level of financial inclusion are also the states with high level of human development and vice versa. The mean scores are 0.559 and 0.658 whereas the standard deviations are 0.163 and 0.132 for FI-Index and HDI respectively.

**Table 7 Correlations Status of HDI and FII**

		IF-INDEX	HDI
IF-INDEX	Pearson Correlation	1	.870**
	Sig.(2-tailed)		0
	Sum of Squares and Cross-products	3.651	2.58
	Covariance	0.027	0.019
	Mean	0.55992	0.658094
	Std. Deviation	0.1632556	0.1325911
	N	138	138
HDI	Pearson Correlation	.870**	1
	Sig.(2-tailed)	0	
	Sum of Squares and Cross-products	2.58	2.409
	Covariance	0.019	0.018
	Mean	0.658094	0.55992
	Std. Deviation	0.1325911	0.1632556
	N	138	138

Source: Author's Own Calculation. Note:\*\*Correlation is significant at the 0.01 level (2 tailed).

According to table 8, it is observed 22 nations are reported as very high and high human development status in which 7 and 15 nations as very high and high financial inclusion status respectively. It is noticed that 68 nations are reported as high human development status in which 3, 34 and 30 nations reported as very high, high and medium financial inclusion status respectively and surprisingly one nation comes under low financial inclusion.

Table 8 Crosstab of FII and HDI

Financial Inclusion Index	Human Development Index				Overall
	Very High HDI	High HDI	Medium HDI	Low HDI	
Very High FII	7	3	0	0	10
High FII	15	34	0	0	49
Medium FII	0	30	21	0	51
Low FII	0	1	24	3	28
Overall	22	68	45	3	138

The study also domes rate that 45 nations are reported as medium human development status in which 21 and 24 nations reported as medium and low financial inclusion status respectively. The study further observed only 3 nations is reported as low status in both human development and financial inclusion.

The countries like United Arab Emirates, Uruguay, Hong Kong, Oman, China, Qatar, Guadeloupe, Colombia, Bahrain and Bulgaria which rank high in financial inclusion are also found to have high human development index. Furthermore, the countries like Sudan, Burkina Faso, Guinea, Afghanistan, Congo, Nigeria, Benin, Uganda, Niger, South Sudan and Chad which rank lowest on index of financial inclusion perform poorly on human development index as well. Similarly, countries like Portugal, Malta, Malaysia and Turkey perform relatively better in financial inclusion than in human development.

Based on the above analysis, the study states that there is positive correlation between financial inclusion and human development among the 138 nations in the world, hence rejecting null hypothesis and accepting alternative hypothesis. There is less development gap exists between financial inclusion and human development index among the nations. Therefore rejecting null hypothesis and accepting alternative hypothesis.

### VIII. Conclusion

This paper throws some light on the extent of financial inclusion across different countries on the basis of an index of financial inclusion. A comparative analysis is also conducted in the paper to examine the association between the process of financial inclusion and the level of human development. The analysis indicates that the level of human development and that of financial inclusion are positively correlated. Thus the countries with a relatively high level of financial inclusion are also the countries having a high level of human development. The countries like Switzerland, Japan, Italy, Spain and South Korea which rank high in financial inclusion are also found to have high human development index. Furthermore, the countries like Congo Democratic Republic, Central African Republic, Guinea, Burundi, and Afghanistan which rank lowest on index of financial inclusion perform poorly on human development index as well. From this study, we realize that there is a strong positive relationship between financial inclusion and human development. Therefore the countries should incorporate financial inclusion in the bigger objective of economic and social development. There is a need for coordinated effort towards encouraging financial inclusion. New technological advances in banking sector such as mobile banking and internet banking could not be included in our empirical analyses due to unavailability of relevant data. Similarly, information on various parameters such as affordability, timeliness and quality of banking services is also not obtainable.

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