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RATING OF EMERGING G22 COUNTRIES ACCORDING TO THE INDEX OF TRADITIONAL FINANCIAL INCLUSION AND FINTECH

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Abstract: Assessing the financial inclusion of countries must take into account both traditional methods and fintech innovations. They provide a complete picture of people's access to and use of financial services, contributing to economic development and reducing inequalities. While traditional financial inclusion refers to access to and use of conventional financial services such as bank accounts, credit and insurance, fintech-based financial inclusion targets financial technologies that have revolutionized access to financial services, especially in regions where traditional banking infrastructure is limited. The main fintech enablers involve access to digital payments, credit through fintech platforms, and the use of online investment and savings services.
The rating of countries according to financial inclusion indices can be assessed using both traditional methods and financial technologies (fintech). This study will allow us to highlight countries, which have made significant progress in promoting financial inclusion through fintech-based techniques.

Keywords: Fintech – financial technology (FT), traditional financial inclusion (TFI), financial inclusion based on Fintech, Rating countries by financial inclusion index.

JEL Classification: G1, G2, G3

Introduction

In the past few years, digital financial inclusion has emerged as a significant factor or driver of financial inclusion across many countries. Prior literature, nevertheless, reveals that there are multiple determining factors in facilitating the financial inclusion process throughout countries, regardless of whether they are developing, or developed.
A substantial percentage of individuals in low- and middle-income countries are still unbanked (Naumenkova et al., 2019), even though financial inclusion offers multiple benefits for developing countries. Several studies have found a link between increased levels of financial inclusion and institutions (Park & Mercado, 2015; Honohan, 2008). Therefore, in developing countries, both the private and public sectors must work together to create a supportive framework for financial

inclusion, since financial inclusion is known worldwide as an attribute of sustainable development because it facilitates more efficient and safer financial transactions.

According to Zhang and Guo (2019), while institutional financial innovation can provide businesses with high-quality advanced financial services by employing novel payment instruments, increased efficiency, and enhanced utility, most companies in emerging economies lack the resources and thus cannot cover the considerable costs of establishing digital payment systems. According to the literature, offering financially vulnerable individuals the possibility to manage financial risk will help reduce poverty (Chaudhry et al., 2020; Demirgüç-Kunt et al., 2018; Gutiérrez-Romero & Ahamed, 2021). Several studies have found a positive relationship between financial innovation and economic growth, but whether it has the potential to drive firm sales growth is unclear and still subject to be explored (Laeven et al., 2015; Beck et al., 2016).

The adoption of digital financial services by the majority of adults has had a positive impact on the countries' economic financial sector (Shen & Hueng, 2021). Nevertheless, such advantages are only visible in developed economies because most developing countries lack access to the financial system. According to one study, 37% of adults in developing economies do not have any accounts with financial institutions, emphasizing the significance of financial inclusion for developing countries (Demirgüç-Kunt et al., 2018).

Furthermore, it is critical to investigate the relationship between digital financial inclusion and Fintech merging the financial infrastructure gap. As per findings, Bangladeshi banking institutions made significant investments in technological infrastructure to guarantee an improved transaction flow and customer access (Aziz & Naima, 2021). Furthermore, developing nations that have a greater degree of digital financial inclusion can alleviate poverty while offering a higher rate of financial inclusion in the country.

Guieze (2014) claims that in order to enhance access to financial services and products in developing countries, the issue of a country's features or structural constraints, such as rising levels of poverty and inequality, rising public debts, inadequate financial infrastructure, and low levels of financial literacy, must be addressed. These limitations impede financial inclusion and must be resolved.

Indeed, about 85% of software platform innovations have origins in the banking industry, indicating that access to banking services is expanding in developing countries (Van der Boor et al., 2014). Banks are essential actors for increasing financial inclusion, especially in developing nations (Safari et al., 2022). Furthermore, the advantages of technological developments would then help developing nations enhance inclusive and sustainable growth (Kelkar, 2010). The empirical findings indicate a significant link between ICT infrastructure advancement and financial inclusion programs. The findings suggest that substantial economic growth, combined with financial inclusion initiatives, will have a long-term effect on ICT infrastructure development in India (Pradhan et al., 2021; Kanungo & Gupta, 2021).

Muganyi et al. (2022) investigated the impact of Fintech and RegTech on the growth of China's financial industry. The researchers found that by making loans, deposits, and savings more accessible, fintech helps the financial system in China grow. RegTech also significantly enhances financial development. The authors contended that national policies should strike an equilibrium between growth and risk in the advancement of fintech.

Recently, there has been a small but burgeoning scientific literature regarding the effect of mobile payments on household wealth and enterprise economic expansion, with the majority of them

focusing on Africa, considering the region's finance structures' ground-breaking position in implementing digital money. Mbiti and Weil (2015) reveal that enhanced use of M-Pesa decreases the utilization of informal savings systems and increases the tendency to save via formal financial institutions accounts, whereas Kikulwe et al. (2013) demonstrate that micro farmers in Kenya who use M-Pesa purchase more inputs, sell a greater portion of their output in marketplaces, and thus have higher returns.

Wieser et al. (2019) demonstrate that mobile money agent rollout significantly increases remittance transactions and nonfarm employment in Uganda, whereas Aggarwal et al. (2020) demonstrate that digital money implementation enhances saving rates and leads to a redistribution of labour from business to agriculture among Malawian microenterprises. Moreover, according to Suri and Jack (2016), M-Pesa has lowered Kenya's poverty rate by 2%.

These research findings demonstrate the significance of financial technologies as channels for boosting economic growth. In connection with these studies, it is believed that countries with higher Fintech penetration will achieve better financial development.

Methodology and Data

This study seeks to explore the impact of Fintech through fintech-based determinants of financial inclusion and the effects on economic development in the G20 developing nations. The G20 group of developing countries, which was founded in 2003, is an association of what was then 20 developing and emerging countries. As the member states change frequently, it does not always include exactly 20 countries. Currently there are 23 countries, however, Cuba does not disclose any data, and due to information availability restrictions, Cuba was excluded from the group in the current research. Often, this alliance is also abbreviated to "G20", occasionally referred to as G21, G22 or G20+, however this leads to confusion in regards to the other "G20" group of the 20 most important industrial nations. Therefore, further we will refer to the group of developing nations as G22.

All member states comprise a total area of 39.62 million km² and about 4.63 billion people. Previous empirical studies on financial inclusion and sustainable development indicators did not focus on this specific group of countries, even though it covers 26.17 percent of the habitable area around the world and 58.23 percent of the world population (World Data, n.d.). Although the information available on the formation and functioning of the G22 group of emerging nations is quite limited, the best summary of the formation and history of this group of countries can be found on World Data, which among other things also reports on the structural capacity of the group, which has about 60% of the world's population, 70% of the world's farmers and over ¼ of global agricultural exports. It can therefore be said that the G22 group of developing countries has emerged under certain conditions of conflict of interest in the WTO negotiation process with the major powers of the USA and the EU in order to strengthen the negotiating position of the G22 member states (Papda, 2005).

To this end, a series of models will be estimated, confirming or rejecting hypotheses on the contribution of innovative financial instruments to the formation of economic development trajectories of G22 developing countries.

Financial Inclusion Data Sources

The determination of the financial inclusion index and the development of regression models on it, correlated with various socio-economic factors, expressing economic development, carried out in this thesis, is based on multiple data sources.

Data on financial inclusion comes from three major sources, including:

- The Financial Access Study (FAS) conducted by the International Monetary Fund (IMF) and related databases;
- The World Bank's Global Financial Inclusion Survey and Database – The Global Findex (Development Research Group, 2022);
- The World Bank's World Development Indicators (WDI) database, through annual monitoring of the economic situation: 266 positions of countries and groups of countries generated according to various criteria (geographical, economic blocs, etc.).

Subsequently, in order to validate the data from the various databases, through repeated recording, on the World Bank's global development and financial inclusion indicators for the G22 group of countries, they were cross-checked so that, by analysing the methodologies related to the recording processes of these data comparable situations in time and space are available.

The **Global Findex database** is relatively recent, already in its fourth edition (2011, 2014, 2017, 2021) and includes over 850 financial inclusion indicators collected from the perspective of adult users of financial services, disaggregated by key demographic and social characteristics - gender, age, education, income, employment status and residence. Covering over 140 economies, the financial inclusion indicators measure how people save, borrow, make payments and manage their risk. The indicators are based on survey results from interviews with randomly selected adults aged 15 and over. This study covered the entire period from 2011 to 2021.

The **FAS database** provides data on more than 150 indicators on access to and usage of financial services. It is a database with annual coverage, backdated to 2004 (the database was launched in 2009), so the data come directly from financial service providers. Both demand and supply side data are quite useful in the financial inclusion measurement phase to get a holistic view of an economy's financial inclusion. However, collecting demand-side data is much more challenging compared to supply-side data as it is more resource-intensive and time-consuming. In some cases, demand-side data are characterised by low response rates, which is why data are collected relatively infrequently. On the other hand, supply data are collected at relatively low administrative cost and tend to be collected more frequently.

Financial Inclusion Indices

As previously mentioned, the proposed indices take values between 0 and 1, with 0 representing the lowest level of financial inclusion and 1 representing full financial inclusion, based on the data available for the G22 countries. Therefore, the higher the value of the index, the better the countries' performance in this dimension.

The syntheses produced, following the processes of determining the financial inclusion indices, show rather diverse situations in terms of the evolution of the activities across the 22 states in the four reference years (2011, 2014, 2017, 2021) providing insights into the progress and adoption of financial services in the G22 group. While in the past, before the emergence of Fintech, traditional financial services have been historically the dominant means of providing access to financial resources, the rise of Fintech-based services has led to increased opportunities for inclusion, as indicated by the growth of the FFII. The data in Figure 1 highlights the substantial increase in the FFII from 0.46 in 2011 to 0.70 in 2014 suggesting that Fintech-based financial services had a transformative impact, rapidly expanding access to financial resources during that period, compared to TFII. This surge may be attributed to innovations such as mobile banking, digital wallets, and online lending platforms, which lowered barriers to entry and reached underserved populations.

Despite experiencing a slight dip in 2017 (FFII: 0.37), Fintech-based financial inclusion remained relatively robust. This resilience could be attributed to the flexibility and adaptability of fintech solutions in addressing the evolving needs of consumers and businesses. The TFII's fluctuations, with a notable decrease from 0.35 in 2014 to 0.12 in 2017, indicate challenges in the traditional financial sector's efforts to sustain and expand financial inclusion. These challenges might include limited physical access to banking services, cumbersome bureaucratic processes, and inadequate infrastructure in remote areas.

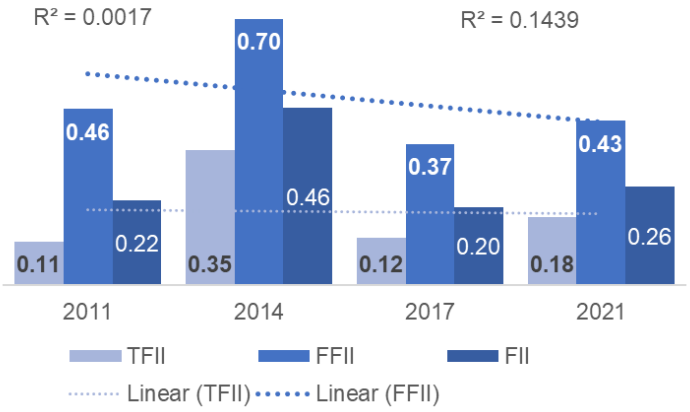

Figure 1. Indices of financial inclusion at the level of traditional and Fintech-based financial activities

Source: elaborated by the author

The fact that both indices experienced an increase in 2021 (TFII: 0.18, FFII: 0.43) suggests that traditional and Fintech-based approaches can be complementary in achieving higher financial inclusion rates. Collaborations between traditional financial institutions and fintech start-ups may have led to hybrid solutions that cater to a wider range of individuals and businesses. Continuous monitoring of these indices can provide valuable information about the long-term impact of financial inclusion efforts. Tracking the trajectory of both TFII and FFII over time can help assess the sustainability of their growth and understand the factors influencing their development.

The Financial Inclusion Index is a synthetic expression of data on various indicators of financial inclusion, capturing aspects of the nature of its manifestations from different perspectives, and ranging between 0 and 1, where 0 indicates complete financial exclusion and 1 indicates complete financial inclusion. According to some expert sources, countries with high financial inclusion are those characterised by an FII value between 0.5 and 1, countries with medium financial inclusion employ a value between 0.3 and 0.5, while countries with low financial inclusion are characterised by values below 0.3.

The data provided in Table 1 allows us to examine Fintech tools by size, from various dimensions, namely accessibility, access, and usage, which provides a more comprehensive view of the progress and challenges in the adoption of Fintech tools for financial services. The overall TFII shows fluctuations over the years, with the highest value in 2014 (0.353) and the lowest in 2011 (0.114). It has experienced a slight upward trend from 2014 to 2021, reaching 0.178. The TFII on the accessibility dimension shows a relatively steady increase from 2011 (0.064) to 2021 (0.097), while the access dimension displays fluctuations over the years but shows an overall increasing trend, from

0.179 in 2011 to 0.259 in 2021. The significant drop in the usage dimension of the TFII from 0.695 in 2011 to 0.111 in 2014, with slow recovery until 2021 at a value of 0.192, can be attributed to structural challenges and systemic barriers that hindered the adoption and accessibility of traditional financial services, taking time to address and overcome.

The overall FFII displays fluctuations without a clear trend over the years. It started at 0.461 in 2011, peaked at 0.696 in 2014, and decreased to 0.429 in 2021. The average value for FFII from 2011 to 2021 is 0.456. The accessibility dimension demonstrated growth from 2011 (0.811) to 2014 (0.862), yet experienced a significant decline to 0.199 in 2017, followed by a subsequent increase to 0.626 in 2021. The access dimension exhibits year-to-year fluctuations but maintains a relatively stable trend, averaging at 0.266 from 2011 to 2021, whereas the FFII's usage dimension exhibits notable fluctuations, decreasing from 0.509 in 2011 to 0.151 in 2014, then increasing to 0.708 in 2017, followed by a slight decline to 0.572 in 2021.

Table 1. Indices of traditional financial inclusion based on Fintech tools by size

	2011	2014	2017	2021	Average 2011-2021	Slope 2011-2021
TFII	0.114	0.353	0.125	0.178	0.192	-0.014
TFIId	0.064	0.079	0.090	0.097	0.082	0.003
TFIIa	0.179	0.167	0.145	0.259	0.188	0.007
TFIIu	0.695	0.111	0.144	0.192	0.286	-0.042
FFII	0.461	0.696	0.369	0.429	0.456	-0.026
FFIId	0.811	0.862	0.199	0.626	0.416	-0.036
FFIIa	0.305	0.227	0.269	0.238	0.266	0.000
FFIIu	0.509	0.151	0.708	0.572	0.572	0.042
FII	0.221	0.463	0.204	0.257	0.286	-0.018

Source: elaborated by the author

Overall, the TFII and FFII show mixed trends with fluctuations, and their average values from 2011 to 2021 indicate that financial inclusion through Fintech tools remains a complex and evolving landscape.

The positive slope in the accessibility dimension of TFII (0.003) could be attributed to progressive efforts and policies aimed at improving access to financial services over time, while the negative slope in the FFII's accessibility dimension (-0.036) might result from challenges or barriers that hindered consistent accessibility advancements in its context.

The positive slope (0.042) in the usage dimension of FFII suggests a gradual increase in the utilization of traditional financial services from 2011 to 2021. This contrasts with the negative slope (-0.042) in the usage dimension of TFII, indicating a decline in the actual usage of traditional financial services over the same period. The different trends between TFII and FFII could be influenced by varying factors and contexts shaping the adoption and utilization of financial services in each case.

The positive slope (0.007) in the access dimension of TFII indicates a gradual improvement or increase in the accessibility of financial services over time. In contrast, the zero-slope recorded by

FFII suggests that there has been little to no significant change in the accessibility of financial services according to its measurements. This could imply that efforts or circumstances impacting accessibility have remained relatively stagnant within the FFII context.

The data in Figure 2 provides an overview of traditional financial inclusion and fintech-based financial inclusion by average level between 2011 and 2021. The overall average TFII is 0.192, while the overall average FFII is higher at 0.456. This suggests that fintech-based financial inclusion has been more successful in providing access to financial services compared to traditional financial inclusion based on Fintech tools by size.

The usage dimension of both TFII and FFII has the highest average values (0.286 and 0.572, respectively). This indicates that the actual utilization of financial services through Fintech tools has been the most prominent factor contributing to financial inclusion growth. The access dimension of FFII (0.266) outperforms the TFII's access dimension (0.188), indicating that Fintech tools have been more effective in enhancing access to financial services within the G22 group. The higher accessibility dimension value of FFII (0.416) compared to TFII's accessibility dimension (0.082) suggests that fintech-based financial services have made it easier for people to access financial resources.

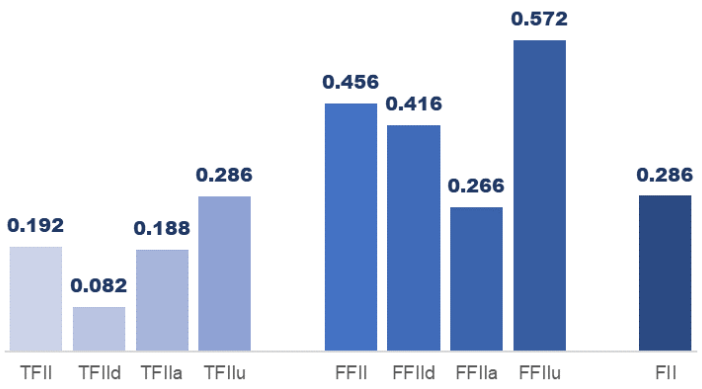

Figure 2. Indices of traditional financial inclusion by size

Source: elaborated by the author

The overall slopes for both TFII (-0.014) and FFII (-0.026) in Figure 3 suggest a slight declining trend in both traditional and fintech-based financial inclusion by size between 2011 and 2021, indicating that despite fluctuations, the progress in financial inclusion has not been consistently positive and has encountered certain challenges.

The usage dimension of both TFII (-0.042) and FFII (0.042) exhibited the most notable changes in trends. While the usage dimension of TFII decreased, the FFII's usage dimension increased. This indicates that the adoption and utilization of financial services through Fintech tools have displayed divergent trends for traditional and fintech-based financial inclusion.

The access dimension slope of TFII (0.007) suggests a slight positive trend, indicating a gradual improvement in the accessibility of financial services over time within the TFII framework. On the other hand, the access dimension slope of FFII (0.000) indicates that there has been little to no significant change in the accessibility of financial services according to the FFII measurements. This

highlights the need to focus on improving access to a wider range of financial services through Fintech tools to enhance financial inclusion.

The differing trends in the accessibility dimension of TFII (0.003) and FFII (-0.036) indicate that traditional financial inclusion experienced a slight positive trend in terms of improving access to financial services over time. In contrast, fintech-based financial inclusion saw a decline in ease of access, possibly due to various factors such as changes in technology, regulations, consumer behaviours, or market dynamics that might have affected the effectiveness of fintech tools in maintaining or enhancing accessibility to financial services.

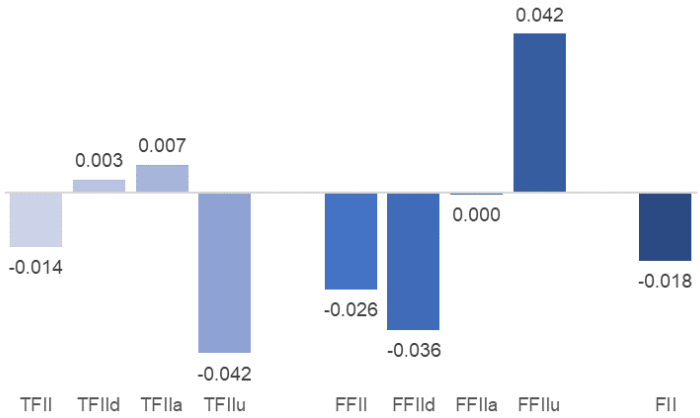

Figure 3. Slope of the changes in the rating position (2011-2021)

Source: elaborated by the author

Rating positions on TFII, FFII and FII of the G22 developing nations

As it is presented in Table 2, some countries have experienced a decline in financial inclusion ratings between 2011 and 2021, while other countries registered considerable improvement in terms of both traditional and Fintech-based financial inclusion.

The top TFII performers in 2021 are Guatemala, Pakistan and Ecuador, which have the highest TFII scores, indicating better traditional financial inclusion compared to other countries in the list. **Guatemala** ranks first in TFII in both 2011 and 2021, maintaining a strong position in traditional financial inclusion over the years. In FFII, Guatemala's performance also improved, ranking 5th in 2021 compared to 8th in 2017, indicating successful fintech adoption over the years. **Pakistan** ranks 2nd in TFII in 2021, demonstrating commendable progress in financial inclusion. The country's traditional financial inclusion rating has improved significantly over the years, rising from 11th in 2011 to 2nd in 2021. In fintech-based financial inclusion (FFII), Pakistan ranks 17th in 2021 compared to 8th in 2011, showing a notable decline over the years. **Ecuador** ranks 3rd in TFII in 2021, indicating significant progress in traditional financial inclusion. The country has experienced fluctuations in traditional financial inclusion scores, but has made significant progress compared to its 15th position in 2017, demonstrating determination to address financial inclusion challenges. In the FFII, Ecuador ranked 6th in 2014 and moved up to 4th in 2021, indicating improvements in terms of fintech adoption.

Meanwhile, Argentina, India and Bolivia have relatively lower **TFII ratings**, indicating challenges in achieving higher levels of traditional financial inclusion. **Argentina** ranks 22nd (last) in the 2021 TFII, highlighting significant challenges in achieving traditional financial inclusion. The country's

TFII rating has remained relatively low over the years, indicating persistent barriers to accessing formal financial services for a significant proportion of the population. In the FFII, Argentina ranked 2nd in 2014 and dropped to 10th in 2021. **India** ranks 21st in TFII in 2021, dropping from 12th position in 2017, indicating room for improvement in traditional financial inclusion. In terms of FFII, India has dropped from 4th place in 2011 to 13th place in 2021. **Bolivia** ranks 20th in TFII in 2021, dropping from the 5th position in 2017, indicating the urgent need for more efforts to promote traditional financial inclusion. Meanwhile, it also shows a decline in FFII from 2017 to 2021, moving from 7th to 11th position.

China, Chile and Uruguay have the highest **FFII scores** in 2021, indicating better financial inclusion based on fintech tools. **China** ranks 1st in FFII in 2021, showing remarkable progress in the adoption of Fintech tools for financial inclusion, compared to the 10th position in the ranking in 2017. It also recorded improvements in terms of TFII, moving from the 17th position in 2017 to the 11th position in 2021. In terms of FFII, **Chile** ranked 2nd in 2021 and 9th in 2017, reflecting the strong adoption of fintech solutions for financial inclusion. In TFII, Chile ranks 9th in 2021 compared to 16th in 2017, indicating a positive trend over the years. **Uruguay** ranked 3rd in FFII in 2021 compared to 11th position in 2014, showing significant progress in the adoption of Fintech tools for financial inclusion. Uruguay ranked 1st in 2017, demonstrating its successful adoption of fintech. In TFII, the country's position in the ranking dropped from the 8th position in 2017 to the 16th position in 2021.

Peru, South Africa and the Philippines have relatively lower **FFII scores**, indicating challenges in adopting Fintech tools for financial inclusion. **Peru** ranked 22nd (last) in FFII in 2021, with a significant drop from the 6th position in 2017, indicating challenges in adopting Fintech tools. In TFII, Peru ranks 15th in 2021, indicating significant fluctuations over the years. **South Africa** ranks 21st in FFII in 2021 and 2014. This compares with the 11th position in 2017, indicating the need for more substantial efforts to leverage technology for financial inclusion. In terms of TFII, South Africa ranks 7th in 2021, compared to the 2nd position in 2011, indicating a negative trend in fintech adoption. **The Philippines** ranked 20th in FFII in 2021, compared to the 9th position in 2011, maintaining low positions over the years, suggesting room for improvement in Fintech-enabled financial inclusion. In TFII, the Philippines ranks 19th in 2021, down from 10th in 2011, indicating a significant decline in TFI over the years.

Some countries show significant changes in their rankings between 2011 and 2021. For example, China has improved its ranking in both TFII and FFII, moving from 17th to 11th in TFII and from 3rd to 1st in FFII. On the other hand, some countries have experienced a decline in rankings, such as the Philippines, which moved from 10th to 19th in TFII and from 9th to 20th in FFII. There are notable disparities in financial inclusion among countries. While some countries have consistently maintained higher rankings, others struggle to improve their financial inclusion metrics throughout the analysed period.

The data in Table 3 show the average ratings and the slope of the rating levels of the 22 countries studied for the Traditional Financial Inclusion Index (TFII), the Fintech Financial Inclusion Index (FFII) and the General Financial Inclusion Index (FII) over the period 2011-2021.

Due to the fact that the ratings are attributing the best ranking to the 1st position and the lowest score to the 22nd position, a decrease in the slope would indicate better performance. The more negative the slope – the better the performance and vice versa.

The most remarkable progress in achieving financial inclusion through the implementation of Fintech techniques, as expressed by FFII, was achieved by Chile, which ranked first by average rating for the period between 2011 and 2021, while the worst performance among the G22 countries was recorded by the Philippines (22nd place). At the same time, the most dynamic in the change of position in the rating of countries by FFII was Uruguay, which gained on average over the 4-year period a little more than one position (slope=-1.05), moving from 11th place in 2014 to 3rd place in 2021. At the opposite pole are Egypt and Turkey, which lost about 2.5 and 2 positions, on average in 4 years, respectively between 2011 and 2021.

Countries with a significant weight in the global economy, such as China and India, have dropped to more modest positions (6 and 13 respectively) in the FFII, with China showing a favourable dynamic (-0.26 positions in 4 years), while India's position in the FFII has declined (+0.88 positions in 4 years).

The information in Table 3 reveals a key finding: the positions of countries in the FFII rating differ from those in the TFII rating. For example, Chile, with the first average position for the period 2011-2021 in the FFII rating, ranks only 12th in the TFII rating, while Guatemala, with the first position in the TFII rating, ranks 5th in the FFII rating. The correlation between the two rating lists, for FFII and TFII, shows a weak positive correlation (r=0.14), indicating that efforts on one dimension of financial inclusion (e.g. FFII) have only a weak impact on the other dimension (e.g. TFII). Similarly, no interdependencies were found between the rating dynamics of the 22 countries by the two elements of financial inclusion. For example, Uruguay's strongest dynamics in FFII (-1.05 positions over 4 years) is associated with the largest decline in TFII (+1.02 positions on average over 4 years), while Egypt also fell significantly in FFII by around +2.5 positions over 4 years and by almost 1 position in TFII (+0.91 positions over 4 years).

Table 2. Rating positions on TFII, FFII and FII of the G22 developing nations (2011-2021)

Country	TFII				Rating			
	2011	2014	2017	2021	2011	2014	2017	2021
Guatemala	0.417	0.164	0.231	0.416	1	4	3	1
Pakistan	0.350	0.200	0.144	0.318	11	2	4	2
Ecuador	0.336	0.153	0.087	0.307	14	5	15	3
Brazil	0.338	0.072	0.127	0.274	13	17	7	4
Tanzania	0.375	0.336	0.358	0.244	7	1	1	5
Nigeria	0.379	0.137	0.340	0.238	6	7	2	6
South Africa	0.407	0.143	0.119	0.191	2	6	9	7
Venezuela	0.404	0.168	0.112	0.177	3	3	10	8
Chile	0.348	0.080	0.076	0.153	12	15	16	9
Turkey	0.330	0.111	0.067	0.150	16	10	18	10
China	0.323	0.069	0.070	0.150	17	18	17	11
Thailand	0.322	0.095	0.109	0.150	18	12	11	12
Mexico	0.334	0.076	0.067	0.143	15	16	19	13
Indonesia	0.392	0.049	0.063	0.142	5	20	20	14
Peru	0.296	0.083	0.101	0.142	22	14	13	15
Uruguay	0.400	0.105	0.121	0.133	4	11	8	16
Egypt, AR	0.365	0.134	0.093	0.122	9	8	14	17
Paraguay	0.373	0.116	0.136	0.120	8	9	6	18
Philippines	0.356	0.021	0.031	0.111	10	22	22	19
Bolivia	0.297	0.069	0.137	0.095	21	19	5	20
India	0.315	0.091	0.107	0.085	19	13	12	21
Argentina	0.300	0.040	0.049	0.061	20	21	21	22

Country	FFII				Rating			
	2011	2014	2017	2021	2011	2014	2017	2021
China	0.91	0.438	0.4	0.734	3	10	10	1
Chile		0.685	0.404	0.674		3	9	2
Uruguay		0.435	0.615	0.671		11	1	3
Ecuador		0.634	0.454	0.666		6	5	4
Guatemala	0.913	0.528	0.414	0.637	2	7	8	5
Tanzania	0.348	0.33	0.563	0.613	7	16	2	6
Mexico	0.85	0.418	0.392	0.432	5	14	12	7
Brazil	0.918	0.452	0.55	0.429	1	9	3	8
Venezuela		0.64	0.387	0.429		5	15	9
Argentina		0.695	0.388	0.423		2	13	10
Bolivia		0.396	0.426	0.419		15	7	11
Paraguay			0.387	0.416			14	12
India	0.909	0.432	0.381	0.415	4	12	16	13
Indonesia	0.72	0.427	0.323	0.412	6	13	17	14
Thailand		0.456	0.131	0.38		8	21	15
Nigeria		0.17	0.2	0.34		19	18	16
Pakistan	0.238	0.199	0.19	0.295	8	18	19	17
Egypt, AR		0.743	0.459	0.288		1	4	18
Turkey		0.684	0.142	0.166		4	20	19
Philippines	0.236	0.088	0.07	0.096	9	20	22	20
South Africa		0.057	0.393	0.088		21	11	21
Peru	0.025	0.243	0.449	0.075	10	17	6	22

Country	FII				Rating by FII			
	2011	2014	2017	2021	2011	2014	2017	2021
Guatemala	0.536	0.279	0.294	0.488	1	6	2	1
Ecuador	0.476	0.294	0.205	0.416	10	5	11	2
Tanzania	0.364	0.334	0.426	0.357	20	1	1	3
Brazil	0.474	0.194	0.257	0.328	11	15	5	4
Pakistan	0.306	0.200	0.161	0.309	22	14	17	5
China	0.463	0.188	0.178	0.309	15	16	15	6
Chile	0.485	0.248	0.184	0.301	9	9	14	7
Uruguay	0.526	0.213	0.267	0.286	4	11	4	8
Nigeria	0.510	0.149	0.285	0.275	5	20	3	9
Venezuela	0.529	0.307	0.204	0.261	3	2	12	10
Mexico	0.466	0.187	0.174	0.238	13	17	16	11
Peru	0.442	0.262	0.213	0.234	19	8	8	12
Indonesia	0.490	0.170	0.152	0.233	8	19	19	13
Thailand	0.464	0.211	0.118	0.228	14	12	20	14
Paraguay	0.505	0.301	0.221	0.218	6	3	7	15
Bolivia	0.445	0.176	0.233	0.201	18	18	6	16
India	0.456	0.202	0.199	0.193	16	13	13	17
Egypt, AR	0.499	0.298	0.210	0.181	7	4	10	18
Argentina	0.447	0.219	0.160	0.178	17	10	18	19
Turkey	0.471	0.271	0.095	0.156	12	7	21	20
South Africa	0.531	0.110	0.211	0.151	2	21	9	21
Philippines	0.309	0.046	0.045	0.106	21	22	22	22

Source: elaborated by the author

It is important to note the circumstances in which distortions occur between the two elements of financial inclusion. For example, China, which ranks more favourably among the top countries in the TFII (6th), is ranked unfavourably in the TFII (only 16th), a phenomenon that can also be observed in the case of India. We believe that China's (India's) great difficulty in ensuring traditional financial inclusion is expressed in the high population density/number, which cannot be physically covered by traditional financial instruments due to their massive costs, which is more easily solved by Fintech instruments.

Table 3. Average rating and changes in rating level for FII, TFII. FFII (2011-2021)

Country	TFII		FFII		FII	
	Average 2011-2021	Slope 2011-2021	Average 2011-2021	Slope 2011-2021	Average 2011-2021	Slope 2011-2021
Chile	12	-0.29	1	-0.23	10	-0.07
Ecuador	7	-0.74	2	-0.28	5	-0.61
Uruguay	8	1.02	3	-1.05	4	0.19
Brazil	9	-1.13	4	0.46	7	-0.94
Guatemala	1	-0.05	5	0.26	1	-0.14
China	16	-0.61	6	-0.26	11	-1.01
Egypt, AR	11	0.91	7	2.49	9	1.10
Tanzania	2	-0.14	8	-0.50	2	-1.37
Argentina	22	0.18	9	1.04	20	0.35
Mexico	17	-0.13	10	0.06	14	-0.27
Venezuela	5	0.64	11	0.46	3	0.89
Bolivia	19	-0.40	12	-0.49	18	-0.56
India	20	0.22	13	0.88	15	0.04
Indonesia	15	0.73	14	0.79	17	0.26
Paraguay	10	0.88	15	-0.50	6	0.89
Peru	18	-0.62	16	0.84	21	0.21
Turkey	14	-0.34	17	2.01	19	1.04
Thailand	13	-0.54	18	0.86	16	0.11
Pakistan	3	-0.74	19	0.79	13	-1.30
Nigeria	4	-0.12	20	-0.43	8	-0.14
South Africa	6	0.51	21	0.14	12	1.26
Philippines	21	0.75	22	1.00	22	0.08

Source: elaborated by the author

These insights provide a glimpse into the financial inclusion performance of various countries over the past decade. They highlight the variations in traditional and Fintech-based financial inclusion efforts and their impact on overall financial inclusion. It is important to note that countries with higher FII values are considered more financially inclusive, meaning they have better access to financial services and opportunities for their populations. On the other hand, countries with lower FII values face challenges in providing financial services and opportunities to their citizens, leading to financial exclusion. As previously mentioned, the index is flexible and can be modified over time and for different sets of countries to reflect changes in financial inclusion dynamics.

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