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The Importance of Digital Finance Indicators and Comparison of Digital Finance Performance Using Bulut Scoring System

Dijital Finans Göstergelerinin Önemi ve Dijital Finans Performansının Bulut Puanlama Sistemiyle Karşılaştırılması

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ÖZ

Bu çalışmada amaçlanan; dijital finans göstergelerinin önem düzeyini tespit etmek ve tespit edilen önem düzeylerine göre dünya ülkelerinin dijital finans performanslarını ölçmektir. Bu ölçümün yapılmasının nedeni ülkeler arası kıyaslama yapmak ve hangi ülkenin dijital finans çağına daha hazır olduğunu görebilmektir. Çalışmada Global Findex veritabanı tarafından yayınlanan verilerden yararlanılmıştır. Bu veriler yardımıyla elde edilen dijital finans göstergelerinin önem düzeyini belirlemek için NMV yöntemi, ülkeler arası performans sıralaması yapabilmek için ise BSS yöntemi kullanılmıştır. NMV sonuçlarına göre aile dışından bir bireyde veya tasarruf kulübünde birikimlerini değerlendirmenin ön planda olduğu saptanmıştır. Ayrıca aile dışından bireylerden borç alma göstergesinin de önem arz ettiği tespit edilmiştir. Bu sonuçlar insanların yüksek risk eğiliminde olduklarının bir işareti olabilir. BSS skorlarına bakıldığında ise dijital finans performansı yüksek olan ülkeler yıldan yıla farklılaşsa da hemen hemen hepsinin dijital ödeme sistemlerini kullandıkları, dijital ekonomiye önem verdikleri ve dijital dönüşüm süreçlerini hızlandırmaya çalıştıkları görülmüştür.

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ABSTRACT

This study aims to identify the significance levels of digital finance indicators and measure the digital finance performance of countries based on these identified significance levels. The purpose of this measurement is to enable cross-country comparisons and determine which nations are better prepared for the digital finance era. The research utilizes data published by the Global Findex Database (GFD). To assess the significance levels of the digital finance indicators derived from this data, the Normalized Maximum Values (NMV) method was employed, while the Bulut Scoring System (BSS) method was used for inter-country performance ranking. The NMV results indicate that evaluating savings through individuals outside the family unit or within savings clubs holds primary importance. Additionally, the indicator related to borrowing from individuals outside the family was identified as significant. These findings may suggest a propensity for high-risk behavior among individuals. An analysis of the BSS scores reveals that, although the digital finance performance of countries varies from year to year, nearly all high-performing nations utilize digital payment systems, prioritize the digital economy, and strive to accelerate their digital transformation processes.

1. Introduction

The rapid advancement of technology has made the digital age nearly indispensable for individuals today. This is

primarily due to the pervasive integration of digital life into every aspect of existence, with traditional practices in various operations nearing extinction. Consequently, adapting to digital living has become a necessity. The impact

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of digital life became particularly pronounced following the COVID-19 pandemic, which significantly amplified its influence. Even after the pandemic subsided, these digital tools have continued to facilitate ease in daily life.

Digitalization has emerged as a product of accelerated access to information through technological means and is now utilized in nearly all fields. This development has been driven by widespread internet access and the use of mobile devices such as computers, phones, tablets, and smartphones. While this influence has positive aspects, it also carries negative implications. Security issues in mobile tools and social media applications used to access the digital age present risk factors within this system. However, with these issues addressed through reliable software, the positive aspects of digitalization become more prominent, demonstrating that it not only facilitates human life but also saves time. Furthermore, technological services such as data storage and processing are believed to prevent direct output-focused losses, such as document loss and paper waste (Beyaz Özbey, 2022: 144).

The digital age, which interacts with nearly every discipline, is closely tied to the financial sector. When discussing finance, the management of instruments such as money, funds, and capital comes to mind. Moreover, the activities encompassing the management, acquisition, and effective utilization of these instruments are collectively referred to as financial management. Within financial management, numerous financial decisions must be made, alongside technological investments that directly influence these decisions, as such investments impact a firm's balance sheet. Consequently, there exists a significant relationship between digitalization and finance. Innovations introduced by the digital age have diversified consumer demands, leading to the design of new products and subsequent financial investments in this domain. Organizations within the financial sector—such as consulting firms, insurance companies, banks, factoring, and leasing companies—are also undergoing a transformation into the digital age. Among these, banks are the most prominent and significantly affected by technology. Nearly all banks are now capable of providing online services, including transactions such as electronic funds transfers (EFT), mobile banking, Society for Worldwide Interbank Financial Telecommunication (SWIFT) transactions, telephone banking, and Quick Response (QR) code payments. In light of this, digitalization has become essential for the financial sector to deliver improved services to customers and establish both efficient and effective communication with them (Gören Yargı, 2023: 168-171).

Digital finance can be defined as the execution of financial transactions through digital tools. Examples of these financial instruments include internet banking, mobile banking, digital wallets, cryptocurrencies, and other financial technologies. The primary objective of conducting financial transactions digitally—or the essence of digital finance—is to accelerate financial processes, making them

reliable and accessible (Şahin, 2022: 134).

The concepts of e-finance and FinTech, closely intertwined with digital finance, are also relevant to this topic. E-finance refers to the execution of financial institutions' operations via the internet or the realization of financial products, services, and market transactions through electronic tools that utilize the internet (Allen et al., 2002: 5-6). The term FinTech, derived from the combination of "finance" and "technology," represents financial technology. Additionally, FinTech is an innovative approach that enhances and develops financial activities through technology, employing digital solutions in place of traditional financial paradigms (Schueffel, 2016: 45; Gimpel et al., 2017: 247).

The aim of this study is to determine the significance level of digital finance indicators and compare the digital finance performance of countries worldwide based on these established weights. To ascertain the significance levels and perform a performance ranking, newly emerging multi-criteria decision-making techniques will be utilized. Furthermore, the indicators identified as digital finance indicators and the study sample will be explained in the methodology section. The study will proceed by first elucidating relevant concepts, followed by a compilation of studies pertinent to the research topic. The final section will detail the methodological aspects, present the findings, interpret the results, and conclude with recommendations and evaluations.

2. Literature Review

This section reviews existing research related to the topic within the literature. No studies were found that directly measure digital finance performance; however, studies indirectly examining the impact of digital finance on firm or financial performance are discussed. These studies are presented chronologically, from past to present.

Urbonaviciute & Maknickiene (2019) analyzed the financial performance of digital retail companies using multi-criteria decision-making techniques, specifically the Simple Additive Weighting (SAW) and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) methods. The sample consisted of the top four online retail companies by sales turnover: Amazon, JD, Alibaba, and eBay. TOPSIS results indicated that Alibaba exhibited the highest financial performance, while SAW results highlighted eBay as the top performer. The analysis suggested that the company with the highest sales turnover does not necessarily demonstrate the best financial performance, indicating that sales turnover alone is insufficient for success.

Babarinde, Abdulmajeed, & Kazeem (2020) examined the concept of digital finance from a theoretical perspective, identifying commonalities among definitions in the literature. They noted the use of human interfaces in all digital finance applications and highlighted that branchless banking, electronic banking, mobile banking, mobile

money, internet banking, bank cards, credit cards, Point of Sale (POS) devices, mobile wallets, and agency banking are recurring concepts across studies. They emphasized the need for increased research in digital finance, given the rapid evolution of developments in the financial sector.

Bil & Mutlu Yıldırım (2021) assessed the effectiveness of digital transformation in the banking sector using the MOORA technique for Garanti Bank between 2016 and 2020. Indicators included digital transformation and technological advancement, customer privacy, and information security. Findings revealed that digitalization facilitated transactions, improved customer quality, expanded the customer base, increased the share of digital channels, and provided secure services. Over the years, the effectiveness of digital transformation increased to keep pace with technological advancements.

Daud et al. (2022) analyzed the impact of digital finance, digital marketing, and digital payments on the financial performance of 190 Small and Medium Enterprises (SMEs) in Indonesia, determined through snowball sampling. Using structural equation modeling, the findings indicated that all three factors positively influenced financial performance, underscoring the importance of financial and digital literacy for SMEs.

Wang (2022) performed econometric tests to examine the role of digital finance in financial theory, identifying the digitization of money—closely linked to blockchain technology—as its foundation. However, he argued that Bitcoin is not the cornerstone of digital finance but rather a supporting factor in its development.

Wu & Huang (2022) measured the impact of digital finance on the financial performance of 157 energy firms in China using the Generalized Method of Moments (GMM) method. Results indicated that digital finance positively influenced financial performance, although issues with financial access reduced overall performance.

Ecer, Büyükaslan, & Zolfani (2022) compared cryptocurrencies—a digital finance product—using a sample of the 15 largest cryptocurrencies by market capitalization and 16 factors. Evaluations were based on the Distance from Average Solution (EDAS), Multi-Attributive Ideal-Real Comparative Analysis (MAIRCA), and Measurement of Alternatives and Ranking according to COMpromise Solution (MARCOS) techniques, with the Borda Count method used to combine results. The analysis identified Ethereum, Tether, and Bitcoin as top-performing cryptocurrencies, with software reliability, ease of wallet integration, and stability emerging as the most significant factors.

Tüminçin, Öztel, & Korkmaz (2022) evaluated financial performance in the IT sector during the COVID-19 pandemic using the Entropy and Preference Ranking Organization Method for Enrichment Evaluations (PROMETHEE) methods. Based on criteria weights determined via Entropy, net working capital held the highest

weight. Yearly assessments showed increased performance in 2020, with 2021 as the peak year, attributed to a rise in digital transactions during the pandemic.

İslamoğlu & Bayrak (2022) assessed the impact of digital banking services on financial performance in Turkey using time series analysis. Results showed that digital banking services positively influenced financial performance.

Zuo, Li, & Xia (2023) investigated the effect of digital finance on the efficiency of commercial banks, focusing on technological innovation, financial innovation, technology-finance integration, and industry advantages. Using text mining and the Malmquist index in data envelopment analysis, results indicated that digital finance enhanced bank efficiency, with the impact varying across entities.

Dewi & Wiksuana (2023) tested whether the performance of SMEs in Indonesia varied with digital financial services using closed-ended surveys and structural equation modeling. The analysis suggested that the sustainability of digital financial services could enhance SME financial performance.

Hu et al. (2023) examined whether digital finance promotes corporate sustainability, applying a two-way fixed-effects model and mediation effects model. Findings highlighted digital finance's role in encouraging corporate sustainability, suggesting that accelerating digital finance could contribute to sustainable economic development in China.

Demirel, Ulusoy, & Özbilge (2023) explored the impact of digital payment systems on the accessibility and depth of financial institutions in Turkey, using credit card, bank card, ATM, and POS device counts as indicators. Results showed a positive impact on financial depth, while only Automated Teller Machines (ATMs) and POS devices enhanced accessibility. Innovations in digital payment systems were linked to improved financial access, depth, and economic growth.

Mo, Che, & Ning (2023) assessed the impact of digital finance on environmental, social, and governance (ESG) performance using data from firms listed on the Shanghai and Shenzhen stock exchanges from 2011 to 2017. Results showed that digital finance supports ESG performance by alleviating financial constraints, with recommendations to promote ESG financial innovation and environmental performance improvement.

Tan & Tao (2023) analyzed the relationship between digital finance and innovation performance in universities, using data from 72 universities between 2011 and 2019 with panel regression analysis. Findings indicated a positive impact of digital finance on innovation performance, highlighting that enhancing digital finance supports university innovation.

Eze et al. (2024) identified the most effective electronic banking institutions using multi-criteria decision-making methods, with the Analytic Hierarchy Process (AHP) for weighting criteria. Technological capability emerged as the

most critical criterion, followed by security measures, with First Bank ranking as the top electronic banking institution.

Özmerdivanlı (2024) explored the relationship between digital transformation and profitability in the banking sector, using return on assets (ROA) as the profitability indicator and ATM, branch, credit card, and bank card counts as digital transformation indicators in emerging markets. Findings indicated that digital transformation increased bank profitability and positively impacted financial performance.

Ecer, Gunes, & Zavadskas (2024) compared digital transformation performance among Turkish banks, identifying key factors for digital transformation. Using the Step-Wise Weight Assessment Ratio Analysis (SWARA) and Weighted Aggregated Sum Product Assessment (WASPAS) methods with a sample of the 12 largest banks in Turkey, the most critical factors were fast customer response, social media presence, and market integration, with İş Bankası and Garanti Bankası leading in digital transformation performance.

A total of 18 studies were evaluated in this literature review, with nearly all findings indicating that digital finance positively impacts financial performance.

3. Methodology

In this section, information is provided regarding the dataset used, the indicators comprising the dataset, and the methods employed in the study.

The Sample of the Study

The Global Findex Database (GFD), developed by the World Bank in 2011 and also known as the Global Financial Inclusion Database, provides indicators representing the account ownership, savings, borrowing, payment, and risk status of individuals worldwide. These indicators are recorded based on country, region, and income group, and further categorized by gender, age, education level, income, and labor force participation. The indicators have been published by Findex and reported for the years 2011, 2014, 2017, and 2021 (Demirgüç-Kunt et al., 2022). These indicators are classified and presented in Table 1 at the Appendixes.

Table 1 presents indicators sourced from the GFD, classified under the categories of accounts, borrowing, saving, and ownership. Following this classification, each indicator is subdivided into specific subcategories. The “account” indicator is divided into the number of accounts and financial institution accounts, each further segmented into 10 variables. The “borrowing” indicator is split into borrowing from formal financial institutions and borrowing from family or friends, with each subcategory also consisting of 10 variables. The “saving” indicator includes saving at a financial institution and saving through an individual outside the family or a savings club, each with 10 variables. Unlike the other indicators, the “ownership”

indicator is categorized into three subcategories: owning a credit card, owning a debit card, and owning either a debit or credit card, with each subcategory containing 10 variables. In summary, there are 9 main variables, each with 10 sub-variables.

The indicators in Table 1 also serve as digital performance indicators essential for measuring digital finance performance. In other words, they represent the variables and criteria comprising the study’s sample. The alternatives in the study consist of all countries registered with the World Bank with accessible data. Digital finance performance for each country was measured based on assigned weights.

The Method of the Study

The study employs two methods. The first, the Normalized Maximum Values (NMV) technique, is used to determine the weights of the nine main variables in the study. Based on these assigned weights, the Bulut Scoring System (BSS) is then utilized to rank performance.

Normalized Maximum Values Method (NMV)

Developed by Tevfik Bulut, the Normalized Maximum Values (NMV) method—translated from its Turkish name—is a straightforward and concise empirical technique used for weighting in applications such as ranking, selection, efficiency analysis, risk estimation, optimal solution determination, and performance measurement. The method consists of four stages. The first stage involves creating a decision matrix, a common step in many multi-criteria decision-making techniques. The second stage converts all values in the decision matrix into proportional values. The third stage establishes a normalization matrix based on the maximum criterion. In the fourth and final stage, the criterion weights are calculated, determining their significance levels (Bulut, 2022).

In the first step, a decision matrix is constructed, as shown in Equation 1:

$$X_{ij} = \begin{bmatrix} x_1(1) & x_1(2) \cdots & x_1(m) \\ x_2(1) & x_2(2) \cdots & x_2(m) \\ \vdots & \vdots & \vdots \\ x_n(1) & x_n(2) \cdots & x_n(m) \end{bmatrix} \quad (1)$$

In the second step, all data are converted into proportional values by dividing each datum by the total sum of the criterion, as represented in Equation 2:

$$X_{ij} = X1 / \sum X \quad (2)$$

In the third step, the maximum criterion is identified, and a normalization matrix is established. This matrix is constructed using the values calculated in the second step, from which the maximum, mean, and standard deviation are derived sequentially. This process is applied individually to each criterion. During the integration of these three operations, a standardization procedure is applied to the

criteria for which the maximum, mean, and standard deviations have been calculated. This process is also referred to as data normalization:

Max (Xij), Mean (Xij), Std. Deviation S(Xij);
Standardization (Max, Mean, Std. Deviation) (3)

In the final step, criterion weights are determined, enabling commentary on their levels of importance. In this process, the normalized criterion values are divided by the total normalized criterion value to obtain the weights. Once calculated, the criteria are ranked from highest to lowest to identify their significance levels:

$W_{ij} = \text{Normalized Criterion} / \text{Total Normalized Criterion}$ (4)

Studies utilizing the NMV method in the literature include the determination of decision criteria weights for the capacity of the Turkish healthcare system (Bulut, 2025), the identification of the economic impacts of clean technologies by assessing the significance levels of macroeconomic indicators (Örtlek & Kılıçaslan, 2025), the calculation of weights for key risk factors of non-communicable diseases in European countries (Bulut, 2024a), the evaluation of Organisation for Economic Co-operation and Development (OECD) countries based on the Better Life Index using the NMV method to assess decision criteria importance (Yücel et al., 2024), the determination of financial performance indicators for companies in the growing companies stock fund index (Kılıçaslan, 2023), and the measurement of performance indicator weights for companies listed in the Borsa İstanbul IPO Index (Bağcı & Sarıay, 2021).

Bulut Scoring System (BSS)

The BSS method, developed by Tevfik Bulut using the R programming language, is a multi-criteria decision-making approach. It provides clear and accurate results with minimal computation, offering instant solutions for both small and large datasets. Initially tested in the healthcare sector, it is applicable across all industries. The method comprises four stages. The first stage involves creating a decision matrix, a step common to many methods. In the second stage, raw unstandardized scores are calculated using Formula 5:

$$R = \frac{O_1 \times w_1 \times X_1 + O_2 \times w_2 \times X_2 + O_3 \times w_3 \times X_3 + \dots + O_j \times w_j \times X_j}{c \times a} \quad (5)$$

R: Normalization process

c: Number of criteria

a: Number of alternatives

o: Indicator of positive or negative criterion (+ / -)

w: Weight

X: Criterion value

In the third stage, the range value is calculated by determining the maximum and minimum values of the raw scores (R values) obtained in the previous stage, taking their absolute values, and summing them. This ensures that R values are zero or above. The maximum and minimum

values vary depending on whether the criterion reflects a benefit or cost nature. The formula for this calculation is provided in Equation 6:

$$M = |R_j^{\max}| + |R_j^{\min}| \quad (6)$$

M: Range value

$R_j^{\max}$: Maximum of normalized values

$R_j^{\min}$: Minimum of normalized values

In the fourth and final stage, BSS scores are calculated, and the scores are determined. The formula for this calculation is shown in Equation 7 (Bulut, 2024b: 1-4; Bulut, 2024c: 454-456).

In the fourth and final stage, BSS scores are calculated and determined using Equation 7:

$$BSS = \ln(R + M + 1) \quad 0 \leq BSS \leq \infty \quad (7)$$

ln: Natural Logarithm

Studies employing the BSS method include a theoretical study outlining the development of the BSS method steps in R software (Bulut, 2024b), the evaluation of Turkish healthcare system capacity (Bulut, 2025), the comparison of global health security index performances of world countries (Bulut et al., 2024), the measurement of epidemiological wave amplitudes in OECD countries based on COVID-19 case numbers during the pandemic (Bulut & Top, 2023), the performance analysis of the pharmaceutical manufacturing sector in Turkey over time (Top & Bulut, 2022), and the development of an index for measuring the financial performance of organized industrial zones (Bulut, 2017a).

4. Findings

In this study, the weights of the criteria used as digital finance indicators were first calculated using the NMV method. This calculation utilized data from 2011, 2014, 2017, and 2021 published by Findex, spanning four years. The World Bank's Global Findex Database, developed in 2011, covers these years as it has been published and reported for 2011, 2014, 2017, and 2021. Additionally, the weights of the nine main variables under the four categories shown in Table 1 were measured, and the results are presented in Table 2 at the Appendixes.

Upon evaluating the NMV scores shown in Table 2;

For 2011, the digital finance indicator with the highest weight, at 16%, is "saving through an individual outside the family or a savings club," while "having an account or a financial institution account" holds the lowest weight at 7%.

For 2014, the indicator with the highest weight is "borrowing from family or friends" at 15%, and, again, "having an account or a financial institution account" has the lowest weight at 7%.

For 2017, the indicator with the highest weight, at 16%, is "saving through an individual outside the family or a savings club," while "having an account or a financial institution

account” remains the lowest at 7%.

For 2021, the indicator with the highest weight is “saving through an individual outside the family or a savings club” at 16%, whereas “having an account or a financial institution account” has the lowest weight at 6%.

When evaluating all NMV scores over the specified period, it is evident that individuals do not place high importance on simply opening an account or holding a financial institution account. Instead, they prioritize saving through an individual outside the family or a savings club, and in certain years, borrowing from family or friends is also deemed significant. The preference for savings clubs or non-family individuals over banks and similar institutions for investments suggests a higher risk tolerance. This is further supported by the prominence of borrowing indicators, indicating a preference for short-term, quickly liquidated investments aimed at swiftly enhancing financial well-being through rapid returns. This finding aligns with examples of investors who have significantly increased their wealth through sharp rises in digital finance products, such as cryptocurrencies like Bitcoin. However, it is critical to note that high risk tolerance can also lead investors toward potential bankruptcy.

The BSS technique was employed to measure the digital finance performance of countries based on the weighted digital finance indicators. The resulting performance scores are presented in Table 3 and Table 4 at the Appendixes.

Table 3 presents the BSS scores for 2011 and 2014, reflecting the digital finance performance of countries. The variation in the number of countries each year is due to their inclusion or exclusion in the Findex reports. For 2011, the top five countries in digital finance performance were Cambodia, Peru, North Macedonia, Lithuania, and Vietnam. The high performance in these countries can be attributed to factors such as the widespread use of cryptocurrencies and digital currencies, as well as their commitment to the digital economy. In Cambodia, the local currency is used for digital transactions, and the country has transitioned to a blockchain-based payment system. Similarly, Peru emphasizes digital currency use and is working toward introducing its own digital currency. In North Macedonia, trust in digitalization has grown due to its potential to stimulate the economy and generate social benefits, enhancing transparency, reducing corruption, and improving accountability, which in turn increases trust in the government. In Lithuania, financial technology (FinTech) plays a significant role in digital finance performance, supported by favorable tax conditions, rapid bureaucratic processes, minimal capital requirements, and ease of doing business. Vietnam, one of Asia’s fast-growing economies, demonstrates the importance of the digital economy in its growth, with nearly all banking transactions conducted through digital payment systems. In 2011, the countries with the lowest digital finance performance were Afghanistan and Hong Kong. Due to the crisis in Afghanistan, the country faced significant financial distress, with most banks

non-operational and the system on the verge of collapse. Hong Kong, heavily dependent on foreign trade and investment, was adversely impacted by the global economic crisis and negative economic developments in China, directly affecting its financial markets.

In 2014, the top countries in digital finance performance were Canada, Norway, New Zealand, Finland, and Australia, while Tajikistan ranked lowest. Canada, ranked first, is economically strong and globally recognized for its expertise in information technology. Many sectors in Canada have seamlessly transitioned to digital transformation, with digital banks attracting substantial investments, establishing the country as a leader in the digital sector. Norway demonstrates its digital advancement through its commitment to a cashless society, where cash usage is minimal, and it is actively developing its own digital currency. Similarly, New Zealand is experiencing a decline in cash usage, integrating cryptocurrencies into its digital finance sector while still allowing cash as an alternative. Finland, one of the most advanced countries in financial technologies, attracts investors and innovators with its strong technical infrastructure and rapid adaptation to the digital world. Australia, like Finland, leads in financial technologies, applying blockchain and artificial intelligence across sectors such as banking, insurance, investment, and personal finance. Tajikistan’s low digital finance performance is attributed to the small size of its financial sector, lack of international engagement by its banks, and reliance on the Russian economy, which has been impacted by sanctions.

Table 4 displays the digital finance performance based on BSS scores for 2017 and 2021. In 2017, the top five countries were Canada, Norway, New Zealand, Luxembourg, and the United Kingdom, while Iceland had the lowest performance. Consistent with 2014, Canada, Norway, and New Zealand maintained top positions, reflecting their strong information technology networks, infrastructure, and low cash usage rates, making them well-suited for digital transformation. Luxembourg, where the banking sector constitutes a significant share of the economy, is Europe’s largest center for investment funds and serves an international clientele with diverse financial services and products, explaining its high ranking. The United Kingdom has positioned itself as a leader in digital finance by implementing regulations that allow cryptocurrencies to test products and services, marking its commitment to growth in this sector. Conversely, Iceland struggled with inflation and a current account deficit following an economic crisis, requiring financial assistance from the International Monetary Fund (IMF) and European countries, which hindered its focus on digital finance.

In 2021, the top countries were Iceland, Canada, and Norway, with South Sudan at the bottom. Iceland’s dramatic rise from the lowest rank in 2017 to the top in 2021 is primarily due to rapid financial system expansion through reforms. Instead of selling failing banks, Iceland increased

trust by guaranteeing depositors, implemented capital controls to prevent capital flight, and promoted economic growth by reducing unemployment. In summary, Iceland achieved swift economic recovery without compromising citizen welfare, implementing constraints while providing high-quality health and education services aligned with international standards. South Sudan, having gained independence from Sudan, has been hindered by famine and internal conflicts. Persistent struggles for independence, exacerbated by the deaths of key leaders, widespread armament, tensions with Sudan, internal strife, and rampant corruption, have obstructed peace and development, resulting in its low digital finance performance.

5. Conclusion and Discussion

The growing use of technology in every aspect of life underscores the necessity of adapting to the digital age. In this era, information is accessed through devices such as phones and tablets via the internet, saving time and enhancing convenience. Like other sectors, the financial industry is closely linked to the digital age, with financial investments increasingly shaped by technology. Financial institutions are adapting by offering digital products and services, such as mobile banking and cryptocurrencies. The convergence of finance and technology has given rise to financial technology (FinTech), an innovation replacing traditional approaches with digital solutions.

This study assesses and compares the digital finance performance of countries worldwide using digital finance indicators. In an era where digitalization permeates all areas of life, the extent of digitalization in countries' financial sectors is of interest. Thus, this study evaluates how well countries have adapted to the digital age in finance. Research on this topic in the literature is limited, typically examining the impact of digital finance on financial performance rather than directly measuring performance. Most studies indicate that digital finance positively affects financial performance.

Using the World Bank's GFD, developed in 2011, this study measures the digital finance performance of countries. The indicators in this database are grouped into accounts, borrowing, saving, and ownership, encompassing nine variables: number of accounts, financial institution accounts, borrowing from formal institutions, borrowing from family or friends, saving at a financial institution, saving through a non-family individual or savings club, debit/credit card ownership, and ownership of either a debit or credit card. The study's alternatives consist of all countries in the World Bank database with accessible data, covering 2011, 2014, 2017, and 2021. The methods employed include multi-criteria decision-making techniques: the NMV method, developed by Tevfik Bulut in 2017, and the BSS, developed in 2024.

The NMV scores generally highlight that individuals prioritize saving through a non-family individual or savings club. Borrowing from family or friends was also prominent

across periods, suggesting that people do not rely solely on account holdings for investments. The preference for high-risk, high-reward savings options reflects a desire for immediate returns, focusing on liquidity and risky, yet highly liquid, assets. The aim appears to be short-term gains to quickly enhance prosperity. However, while high-risk investments can yield positive outcomes, they also pose the risk of losses, including bankruptcy.

Using the NMV-weighted digital finance indicators, BSS scores were calculated for 2011, 2014, 2017, and 2021 to assess countries' digital finance performance. In 2011, the highest-performing countries were Cambodia, Peru, North Macedonia, Lithuania, and Vietnam, with Hong Kong at the bottom. In 2014, Canada, Norway, New Zealand, Finland, and Australia topped the list, with Tajikistan at the bottom. In 2017, Canada, Norway, New Zealand, Luxembourg, and the United Kingdom ranked highest, while Iceland performed lowest. By 2021, Iceland, Canada, and Norway led, with South Sudan at the bottom. These findings reveal that high-performing countries prioritize the digital economy, utilize digital payment systems, support blockchain transitions, and work on creating digital currencies. They also specialize in information technology, support FinTech companies, promote innovation, and aim to reduce cash usage. Conversely, low-performing countries often face financial instability, an underdeveloped financial sector with limited international engagement, dependency on external economies, and internal crises such as civil wars.

Iceland's example is particularly noteworthy. After experiencing an economic crisis due to inflation and current account deficits, Iceland rose from the lowest performance to the top through significant reforms, including deposit insurance, capital controls, and exemplary health and education services, facilitating rapid economic recovery.

The finance sector must adapt to these changes in an increasingly digitalized world. Making controlled financial decisions during this adaptation is crucial. The rapid flow of information and ability to conduct transactions instantly can test investors' emotions. Instant changes in the digital age may prompt impulsive reactions, but financial success requires rational handling of these reactions and informed decision-making. For long-term success, risk assessment and portfolio diversification are essential to build resilience against market volatility. Strategic planning in financial decisions is vital, and investors should avoid impulsively chasing rapidly rising assets. The concept of "Fear of Missing Out" (FOMO) in financial literature describes a mindset driving hasty decisions to seize perceived opportunities. However, assessing whether such opportunities align with predetermined strategies is critical before acting.

This study is expected to contribute to the literature by providing insights into the importance of digital finance indicators for future research and offering a perspective on countries' digital finance performance. It is recommended that the study be replicated using different methods to

compare with current results, enhancing the generalizability of findings and fostering new approaches based on these outcomes.

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Appendixes

Table 1: Digital Finance Indicators

Main Indicators			
Account	Borrow from	Saved at	Ownership of
Account	A legitimate financial institution	A financial institution	A credit card
Financial institution account	Family or friends	A savings club or a non-family individual	A debit card
			A debit or credit card
Sub-Indicators			
<i>Account, female</i>	<i>A legitimate financial institution, female</i>	<i>A financial institution, female</i>	<i>A credit card, female</i>
<i>Account, male</i>	<i>A legitimate financial institution, male</i>	<i>A financial institution, male</i>	<i>A credit card, male</i>
<i>Account, young</i>	<i>A legitimate financial institution, young</i>	<i>A financial institution, young</i>	<i>A credit card, young</i>
<i>Account, older</i>	<i>A legitimate financial institution, older</i>	<i>A financial institution, older</i>	<i>A credit card, older</i>
<i>Account, primary education or lower</i>	<i>A legitimate financial institution, primary education or lower</i>	<i>A financial institution, primary education or lower</i>	<i>A credit card, primary education or lower</i>
<i>Account, secondary education or higher</i>	<i>A legitimate financial institution, secondary education or higher</i>	<i>A financial institution, secondary education or higher</i>	<i>A credit card, secondary education or higher</i>
<i>Account, income, poorest 40%</i>	<i>A legitimate financial institution, income, poorest 40%</i>	<i>A financial institution, income, poorest 40%</i>	<i>A credit card, income, poorest 40%</i>
<i>Account, income, richest 60%</i>	<i>A legitimate financial institution, income, richest 60%</i>	<i>A financial institution, income, richest 60%</i>	<i>A credit card, income, richest 60%</i>
<i>Account, out of labor force</i>	<i>A legitimate financial institution, out of labor force</i>	<i>A financial institution, out of labor force</i>	<i>A credit card, out of labor force</i>
<i>Account, in labor force</i>	<i>A legitimate financial institution, in labor force</i>	<i>A financial institution, in labor force</i>	<i>A credit card, in labor force</i>
<i>Financial institution account, female</i>	<i>Family or friends, female</i>	<i>A savings club or A savings club or a non-family individual, female</i>	<i>A debit card, female</i>
<i>Financial institution account, male</i>	<i>Family or friends, male</i>	<i>A savings club or A savings club or a non-family individual, male</i>	<i>A debit card, male</i>
<i>Financial institution account, young</i>	<i>Family or friends, young</i>	<i>A savings club or a non-family individual, young</i>	<i>A debit card, young</i>

<i>Financial institution account, older</i>	<i>Family or friends, older</i>	<i>A savings club or a non-family individual, older</i>	<i>A debit card, older</i>
<i>Financial institution account, primary education or lower</i>	<i>Family or friends, primary education or lower</i>	<i>A savings club or a non-family individual, primary education or lower</i>	<i>A debit card, primary education or lower</i>
<i>Financial institution account, secondary education or higher</i>	<i>Family or friends, secondary education or higher</i>	<i>A savings club or a non-family individual, secondary education or higher</i>	<i>A debit card, secondary education or higher</i>
<i>Financial institution account, income, poorest 40%</i>	<i>Family or friends, income, poorest 40%</i>	<i>A savings club or a non-family individual, income, poorest 40%</i>	<i>A debit card, income, poorest 40%</i>
<i>Financial institution account, income, richest 60%</i>	<i>Family or friends, income, richest 60%</i>	<i>A savings club or a non-family individual, income, richest 60%</i>	<i>A debit card, income, richest 60%</i>
<i>Financial institution account, out of labor force</i>	<i>Family or friends, out of labor force</i>	<i>A savings club or a non-family individual, out of labor force</i>	<i>A debit card, out of labor force</i>
<i>Financial institution account, in labor force</i>	<i>Family or friends, in labor force</i>	<i>A savings club or a non-family individual, in labor force</i>	<i>A debit card, in labor force</i>
			<i>A debit or credit card, female</i>
			<i>A debit or credit card, male</i>
			<i>A debit or credit card, young</i>
			<i>A debit or credit card, older</i>
			<i>A debit or credit card, primary education or lower</i>
			<i>A debit or credit card, secondary education or higher</i>
			<i>A debit or credit card, income, poorest 40%</i>
			<i>A debit or credit card, income, richest 60%</i>
			<i>A debit or credit card, out of labor force</i>
			<i>A debit or credit card, in labor force</i>

Note: All variables are calculated for individuals aged 15 and older.

Source: Demirgüç-Kunt et al., 2022

Table 2: NMV Scores

Indicators / Years	2011	2014	2017	2021
Account	7%	7%	7%	6%
Financial institution account	7%	7%	7%	6%
Borrowed from a legitimate financial institution	15%	14%	15%	15%
Borrowed from family or friends	13%	15%	13%	15%
Saved at a financial institution	13%	13%	13%	12%
Saved using a savings club or a non-family individual	16%	14%	16%	16%
Owns a credit card	14%	13%	14%	14%
Owns a debit card	8%	9%	8%	8%
Owns a debit or credit card	8%	8%	8%	7%
Total	100%	100%	100%	100%

Table 3: BSS Points (Years 2011 & 2014)

2011	BSS	Rankings	2014	BSS
Cambodia	0.000979310	1.	Canada	0.001002448
Peru	0.000966657	2.	Norway	0.000994492
North Macedonia	0.000940301	3.	New Zealand	0.000986086
Lithuania	0.000933312	4.	Finland	0.000968592
Vietnam	0.000927208	5.	Australia	0.000963328
Armenia	0.000918290	6.	Luxembourg	0.000958696
West Bank and Gaza	0.000916973	7.	Sweden	0.000957449
El Salvador	0.000911505	8.	United Kingdom	0.000956606
Thailand	0.000910690	9.	United States	0.000942265
Ireland	0.000907443	10.	Japan	0.000940199
Italy	0.000903897	11.	Israel	0.000939570
Tanzania	0.000902108	12.	Spain	0.000925556
Kazakhstan	0.000896245	13.	Denmark	0.000923199
Cyprus	0.000893724	14.	Switzerland	0.000922867
Haiti	0.000891113	15.	Germany	0.000918802
Gabon	0.000888911	16.	Hong Kong SAR	0.000916981
South Africa	0.000883943	17.	Belgium	0.000916625
Belarus	0.000880240	18.	Korea, Rep.	0.000915382
Australia	0.000879141	19.	Ireland	0.000910903
Taiwan, China	0.000876398	20.	Netherlands	0.000907256
Togo	0.000873142	21.	Austria	0.000903257
Iraq	0.000869685	22.	France	0.000891098
Nigeria	0.000868887	23.	Taiwan	0.000884835
Israel	0.000852153	24.	Singapore	0.000879120
Malta	0.000851530	25.	Estonia	0.000875307
Estonia	0.000845363	26.	Slovenia	0.000875016
Sri Lanka	0.000840759	27.	Malta	0.000865915
Venezuela	0.000839002	28.	Croatia	0.000865848
Ecuador	0.000833372	29.	United Arab Emirates	0.000862492
Azerbaijan	0.000811162	30.	Iran	0.000858394

Congo, Rep.	0.000809873	31.	Bahrain	0.000858008
Rwanda	0.000803273	32.	South Africa	0.000854010
Indonesia	0.000802654	33.	Italy	0.000845332
United Kingdom	0.000798298	34.	Latvia	0.000839126
Spain	0.000796928	35.	Mongolia	0.000820936
Croatia	0.000793241	36.	Kuwait	0.000815361
Russia	0.000792131	3.	Czech Republic	0.000814934
Kyrgyz Republic	0.000788180	38.	Malaysia	0.000812512
Nicaragua	0.000785888	39.	Slovak Republic	0.000807823
Malawi	0.000785008	40.	Portugal	0.000806560
Ukraine	0.000779025	41.	Kenya	0.000804969
Korea, Rep.	0.000771891	42.	Jamaica	0.000794637
Turkmenistan	0.000771498	43.	Cyprus	0.000791371
Chad	0.000767936	44.	Thailand	0.000790772
Mongolia	0.000765851	45.	Botswana	0.000790500
Bangladesh	0.000764563	46.	China	0.000785082
Mauritius	0.000764100	47.	Mauritius	0.000784686
Zimbabwe	0.000762259	48.	Puerto Rico	0.000775848
Central African Republic	0.000756234	49.	Lithuania	0.000775723
Costa Rica	0.000752963	50.	Turkey	0.000773354
Liberia	0.000752257	51.	Saudi Arabia	0.000771652
Malaysia	0.000751488	52.	Brazil	0.000767834
Jordan	0.000750954	53.	Poland	0.000756580
Yemen, Rep.	0.000750824	54.	Serbia	0.000756262
Brazil	0.000739788	55.	North Macedonia	0.000755654
Sierra Leone	0.000735775	56.	Chile	0.000751905
Botswana	0.000729030	57.	Costa Rica	0.000749532
Senegal	0.000725935	58.	Greece	0.000748104
Sudan	0.000725244	59.	Hungary	0.000747835
Honduras	0.000722806	60.	Venezuela	0.000746206
Uzbekistan	0.000719287	61.	Uruguay	0.000744746
Germany	0.000719208	62.	Namibia	0.000743387
Slovak Republic	0.000718241	63.	Uganda	0.000742334
Paraguay	0.000715162	64.	Russia	0.000739638
Comoros	0.000710483	65.	Romania	0.000738425
Czech Republic	0.000703802	66.	Bulgaria	0.000735480
Japan	0.000696650	67.	Belarus	0.000731715
India	0.000696406	68.	Ukraine	0.000725128
Tajikistan	0.000691281	69.	Nigeria	0.000724093
Hungary	0.000688275	70.	Sri Lanka	0.000721664
Montenegro	0.000686983	71.	Dominican Republic	0.000718888
Saudi Arabia	0.000686763	72.	Indonesia	0.000715315
Moldova	0.000684002	73.	Montenegro	0.000712870

Uruguay	0.000683614	74.	Belize	0.000710624
France	0.000679897	75.	Argentina	0.000707289
Angola	0.000674649	76.	Mexico	0.000705535
Lesotho	0.000671067	77.	Panama	0.000700796
Serbia	0.000670506	78.	Zambia	0.000697194
Lao PDR	0.000668657	79.	Kazakhstan	0.000696861
Bosnia and Herzegovina	0.000665706	80.	Lebanon	0.000687734
Niger	0.000663901	81.	India	0.000684052
Eswatini	0.000661827	82.	Bolivia	0.000683683
Benin	0.000661294	83.	Kosovo	0.000681948
Argentina	0.000660636	84.	Philippines	0.000681237
Jamaica	0.000659420	85.	Colombia	0.000680129
Panama	0.000658963	86.	Rwanda	0.000677044
Kenya	0.000657089	87.	Vietnam	0.000676400
Egypt	0.000649365	88.	Albania	0.000675731
Georgia	0.000647811	89.	Bosnia and Herzegovina	0.000673243
Bolivia	0.000647038	90.	Gabon	0.000672596
Chile	0.000645658	91.	Georgia	0.000672061
Netherlands	0.000641756	92.	Zimbabwe	0.000663458
Poland	0.000638857	93.	Guatemala	0.000663235
Bulgaria	0.000638170	94.	Azerbaijan	0.000660822
Denmark	0.000637967	95.	El Salvador	0.000657675
Qatar	0.000637717	96.	Malawi	0.000657313
Lebanon	0.000636352	97.	Sierra Leone	0.000654725
Djibouti	0.000632447	98.	Nepal	0.000654637
United Arab Emirates	0.000632434	99.	Ecuador	0.000653376
Burundi	0.000632033	100.	Ghana	0.000653235
Belgium	0.000629115	101.	Algeria	0.000651517
Latvia	0.000628061	102.	Tanzania	0.000647562
Romania	0.000627863	103.	Peru	0.000647153
Trinidad and Tobago	0.000626537	104.	Cambodia	0.000644858
Uganda	0.000625103	105.	Angola	0.000644652
Austria	0.000624479	106.	Cameroon	0.000641195
Mexico	0.000622363	107.	Moldova	0.000640136
Albania	0.000622069	108.	Honduras	0.000638346
Guatemala	0.000620693	109.	Senegal	0.000636898
Madagascar	0.000617317	110.	Ethiopia	0.000636142
United States	0.000616961	111.	Cote d'Ivoire	0.000636064
Guinea	0.000614786	112.	Mauritania	0.000635428
Ghana	0.000614780	113.	Sudan	0.000633603
Singapore	0.000613771	114.	Jordan	0.000632815
Mali	0.000613018	115.	Benin	0.000632556
Kuwait	0.000612419	116.	Uzbekistan	0.000632265

Burkina Faso	0.000604919	117.	Niger	0.000631393
Turkey	0.000603936	118.	Iraq	0.000626212
Portugal	0.000603689	119.	Congo, Rep.	0.000625536
Algeria	0.000603642	120.	Bhutan	0.000622481
Bahrain	0.000601176	121.	Armenia	0.000621276
Mauritania	0.000598942	122.	Somalia	0.000620078
Kosovo	0.000597279	123.	Tunisia	0.000619392
Slovenia	0.000593435	124.	Congo, Dem. Rep.	0.000618199
Zambia	0.000592093	125.	Nicaragua	0.000618047
Dominican Republic	0.000591547	126.	Burkina Faso	0.000617379
Congo, Dem. Rep.	0.000589772	127.	Mali	0.000616647
Colombia	0.000587928	128.	Bangladesh	0.000615192
Oman	0.000587707	129.	Kyrgyz Republic	0.000611888
Philippines	0.000585835	130.	West Bank and Gaza	0.000611790
New Zealand	0.000585277	131.	Myanmar	0.000611131
Greece	0.000583005	132.	Guinea	0.000606962
Iran	0.000580341	133.	Haiti	0.000605654
Nepal	0.000578160	134.	Egypt	0.000602860
Cameroon	0.000570815	135.	Burundi	0.000600728
Pakistan	0.000568418	136.	Yemen, Rep.	0.000599391
Canada	0.000567156	137.	Madagascar	0.000599258
China	0.000566436	138.	Togo	0.000596707
Finland	0.000561770	139.	Chad	0.000596605
Luxembourg	0.000559627	140.	Pakistan	0.000595458
Syrian Arab Republic	0.000553632	141.	Afghanistan	0.000580652
Afghanistan	0.000545020	142.	Tajikistan	0.000565454
Hong Kong SAR	0.000489775	143.		

Table 4: BSS Points (2017 & 2021 Years)

2017	BSS	Rankings	2021	BSS
Canada	0.000957516	1.	Iceland	0.001167381
Norway	0.000945143	2.	Canada	0.001162199
New Zealand	0.000919403	3.	Norway	0.001150646
Luxembourg	0.000912692	4.	Israel	0.001113519
United Kingdom	0.000906641	5.	United States	0.00111025
Australia	0.000897957	6.	New Zealand	0.001108928
United States	0.000896553	7.	Korea, Rep.	0.001108099
Finland	0.000891391	8.	Denmark	0.001106863
Switzerland	0.000890665	9.	Hong Kong SAR	0.001106237
Israel	0.000886892	10.	Austria	0.001103242
Japan	0.000884045	11.	Finland	0.001101034
Sweden	0.000882233	12.	Australia	0.001099515
Korea, Rep.	0.00087637	13.	Japan	0.001097147
Denmark	0.000874004	14.	Sweden	0.001092762
Hong Kong SAR	0.000871459	15.	Switzerland	0.00108916
Germany	0.000869374	16.	Taiwan	0.001086526
Singapore	0.000864565	17.	Germany	0.001086423

Belgium	0.000860915	18.	United Kingdom	0.001085281
Austria	0.000859746	19.	Ireland	0.001082256
Spain	0.000856962	20.	Belgium	0.001065037
Taiwan	0.00085386	21.	Spain	0.001059624
Ireland	0.000850455	22.	Italy	0.001049085
Netherlands	0.000849869	23.	Estonia	0.00104655
Italy	0.000833309	24.	Netherlands	0.001042194
Malta	0.000832865	25.	Slovenia	0.00103909
France	0.000826817	26.	Singapore	0.001037018
Slovenia	0.000822328	27.	Slovak Republic	0.001032347
United Arab Emirates	0.000820263	28.	France	0.001030904
Estonia	0.000815108	29.	Czech Republic	0.001023752
Bahrain	0.000792943	30.	Malta	0.001019971
Croatia	0.000791756	31.	China	0.001012788
Portugal	0.000785608	32.	Thailand	0.000993565
Iran	0.000784418	33.	Portugal	0.000984977
Turkey	0.000780053	34.	Poland	0.0009806
Slovak Republic	0.000779289	35.	Mongolia	0.000978634
Czech Republic	0.000775631	36.	Brazil	0.000976144
Poland	0.000774448	37.	Latvia	0.00097531
Latvia	0.000770694	38.	Cyprus	0.000975185
Namibia	0.000767711	39.	South Africa	0.00097077
Malaysia	0.000767498	40.	Greece	0.00096773
Trinidad and Tobago	0.000761275	41.	Croatia	0.000965419
Kuwait	0.000754785	42.	Saudi Arabia	0.000961395
Thailand	0.000753844	43.	Ukraine	0.000961361
China	0.000750645	44.	Chile	0.000953706
Mongolia	0.000748801	45.	Iran	0.000953061
Belarus	0.000747353	46.	Mauritius	0.000951979
Mauritius	0.00074733	47.	Bulgaria	0.000948645
Venezuela	0.000745079	48.	Turkey	0.000943411
Chile	0.000739311	49.	Russia	0.000938134
Cyprus	0.000736288	50.	Malaysia	0.000937498
Lithuania	0.000735364	51.	Uruguay	0.000936494
Maldives	0.000734825	52.	Namibia	0.000934142
Uruguay	0.000734079	53.	Hungary	0.00093004
Kenya	0.000732977	54.	Lithuania	0.000927272
Bulgaria	0.000723294	55.	Kazakhstan	0.000921308
Saudi Arabia	0.000719228	56.	Venezuela	0.00091888
Brazil	0.000712829	57.	Serbia	0.000915056
Russia	0.000709731	58.	Sri Lanka	0.000914664
South Africa	0.000708108	59.	United Arab Emirates	0.000914258
Hungary	0.000706924	60.	Kenya	0.000904203
Greece	0.000703449	61.	Argentina	0.000903812
Ukraine	0.000702991	62.	North Macedonia	0.000898485
Serbia	0.000702164	63.	Bosnia and Herzegovina	0.000895617
North Macedonia	0.000699268	64.	Jamaica	0.00088623
Costa Rica	0.000694587	65.	Bolivia	0.000884422
Dominican Republic	0.000687571	66.	Romania	0.000880409
Kazakhstan	0.0006809	67.	Uganda	0.000874093
Indonesia	0.000679836	68.	Costa Rica	0.000870743
Sri Lanka	0.000675652	69.	Ecuador	0.000855331
India	0.000672574	70.	Moldova	0.000844895
Montenegro	0.000671533	71.	Nigeria	0.000844147
Romania	0.000671308	72.	Georgia	0.000843674

Moldova	0.000667862	73.	Philippines	0.000833301
Uganda	0.000666918	74.	Peru	0.000831466
Georgia	0.000664623	75.	India	0.000830714
Argentina	0.00065951	76.	Kosovo	0.000828613
Libya	0.000655627	77.	Liberia	0.000826591
Rwanda	0.000653944	78.	Indonesia	0.000825999
Lebanon	0.000653492	79.	Colombia	0.000824064
Botswana	0.000650132	80.	Dominican Republic	0.000819951
Nepal	0.000647812	81.	Ghana	0.000817048
Bolivia	0.000646176	82.	Gabon	0.000815647
Gabon	0.000645965	83.	Nepal	0.000813201
Armenia	0.000645475	84.	Morocco	0.000809846
Jordan	0.000643983	85.	Mozambique	0.000809253
Nigeria	0.000643469	86.	Jordan	0.000805893
Kosovo	0.000642206	87.	Mali	0.000804291
Ethiopia	0.000633609	88.	Armenia	0.000803144
Bosnia and Herzegovina	0.000632779	89.	Cameroon	0.000797503
Ghana	0.000632767	90.	Senegal	0.000795792
Zambia	0.000631679	91.	Zimbabwe	0.000793743
Colombia	0.000630986	92.	Kyrgyz Republic	0.000790126
Vietnam	0.000630868	93.	Panama	0.000787127
Mozambique	0.00062668	94.	Togo	0.000784612
Panama	0.000624391	95.	Lao PDR	0.000784303
Ecuador	0.000623647	96.	Albania	0.000781054
Peru	0.000623242	97.	Cambodia	0.000778707
Burkina Faso	0.000622871	98.	Tunisia	0.000777757
Zimbabwe	0.000621601	99.	Zambia	0.000775795
Liberia	0.000620695	100.	Uzbekistan	0.000774632
Tunisia	0.000617881	101.	Algeria	0.000771606
Egypt	0.00061752	102.	West Bank and Gaza	0.000765531
Cameroon	0.000616805	103.	Benin	0.00076261
Benin	0.000614201	104.	Bangladesh	0.000761918
Lesotho	0.000613349	105.	Myanmar	0.000761757
Philippines	0.000613135	106.	Egypt	0.000760798
Tajikistan	0.000612189	107.	Burkina Faso	0.000758681
Togo	0.000610449	108.	Tanzania	0.000758344
Azerbaijan	0.000609913	109.	Malawi	0.000758073
Mexico	0.000608158	110.	Sierra Leone	0.000756713
Albania	0.000607946	111.	Guinea	0.000751042
Haiti	0.000606091	112.	Cote d'Ivoire	0.000750021
Turkmenistan	0.000603041	113.	Honduras	0.00074571
Malawi	0.000602561	114.	Congo, Rep.	0.000743735
Honduras	0.000600874	115.	Paraguay	0.000742136
Guatemala	0.00060082	116.	Iraq	0.000736429
Senegal	0.00059917	117.	Tajikistan	0.000733141
Mali	0.000598409	118.	El Salvador	0.000730358
Lao PDR	0.000598047	119.	Nicaragua	0.000729839
Cambodia	0.000590598	120.	Afghanistan	0.000719908
Paraguay	0.000590008	121.	Lebanon	0.000710033
Algeria	0.000589988	122.	Pakistan	0.000695023
Tanzania	0.000589761	123.	South Sudan	0.000685446
Bangladesh	0.000587313	124.		
Mauritania	0.000584762	125.		
Kyrgyz Republic	0.000583741	126.		
Sierra Leone	0.000579017	127.		

Uzbekistan	0.000578636	128.		
El Salvador	0.000578219	129.		
Cote d'Ivoire	0.000575852	130.		
Nicaragua	0.000574411	131.		
Congo, Rep.	0.000574258	132.		
West Bank and Gaza	0.000572469	133.		
Pakistan	0.000571913	134.		
Myanmar	0.000571718	135.		
Guinea	0.000569237	136.		
Iraq	0.000566584	137.		
Morocco	0.000565053	138.		
Central African Republic	0.000557329	139.		
Niger	0.000554874	140.		
Chad	0.000553756	141.		
Congo, Dem. Rep.	0.000553261	142.		
Gambia, The	0.000549016	143.		
Madagascar	0.000546473	144.		
South Sudan	0.000540595	145.		
Afghanistan	0.000532458	146.		
Iceland	0.000478872	147.		