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Asian Journal of Finance (AJF)

Volume II | Issue I | October 2025



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Editorial Note

As the Managing Editor, I am delighted to introduce the second issue of the first volume of the *Asian Journal of Finance*, a rapid, peer-reviewed scholarly journal published by the Faculty of Management Studies, Sabaragamuwa University of Sri Lanka. The *Asian Journal of Finance* serves as an open-access platform for scholars, researchers, and professionals in finance, banking, insurance, economics, and related disciplines to share high-quality empirical and conceptual work that advances theory, policy, and practice in the Asian context.

AJF is strongly committed to promoting academic excellence and integrity by maintaining rigorous double-blind peer review and editorial standards. The journal welcomes original research articles, conceptual analyses, case studies, reviews, short communications, and thought pieces that address emerging issues in financial markets, risk management, investment analysis, actuarial science, financial technology, and sustainable finance. By facilitating scholarly dialogue across disciplines, AJF aims to strengthen the linkage between theory and practice, fostering innovative insights for academia, industry, and policymakers alike.

Electronically managed and globally accessible, AJF continues to engage a wide readership that includes researchers, practitioners, policymakers, and postgraduate students interested in dynamic developments within Asian and global financial systems. The journal provides an opportunity for academics to disseminate their most recent scientific contributions while continuing to reinforce the collaborative bond between AJF and the wider research community. As journals remain the primary medium for disseminating scientific knowledge, the *Asian Journal of Finance* has emerged as a multidisciplinary platform from Sri Lanka that promotes regional and global scholarship in finance and management. Through its prompt review processes and efficient editorial work, AJF ensures that authors can share their latest findings in an open-access biannual publication dedicated to academic integrity and innovation. The journal prioritises original, high-quality, and impactful research that enriches the global discourse on finance, economics, and sustainable development.

The issue begins with an article by A.K.K.K. Athukorala and A.R. Dissanayake from the University of Moratuwa, who examine the *applicability of Geometric Brownian Motion (GBM) and Geometric Fractional Brownian Motion (GFBM)* to forecast share prices in Sri Lanka's telecommunication services sector. Drawing on five years of market data from Sri Lanka Telecom PLC and Dialog Axiata PLC, the authors demonstrate that GBM provides superior predictive performance with lower mean absolute percentage error (MAPE), highlighting its potential as an effective tool for financial forecasting and investment analysis in emerging markets.

Next, H.A.C. Jeewanthi from the University of Ruhuna presents a comprehensive bibliometric review exploring the interplay among *taxation, corporate social responsibility (CSR), and corporate governance (CG)*. Through a systematic analysis of thirty-seven peer-reviewed papers indexed in Scopus from 2004 to 2023, the study maps intellectual trends and global patterns, offering insights into responsible corporate behaviour and the evolving nexus between governance and taxation. This contribution deepens understanding of how ethical governance frameworks can support sustainable fiscal practices and strengthen corporate accountability.

The third paper, authored by M.T. Nabizade and N. Dhanda from Kurukshetra University, India, provides a descriptive analysis of the *performance of microfinance institutions (MFIs) in Afghanistan*. Using secondary data from major institutions such as The First Microfinance Bank, FINCA, MUTAHID, and OXUS, the authors explore outreach, financial performance, and institutional resilience amid Afghanistan's socio-political challenges. Their findings highlight both achievements and structural vulnerabilities in the sector, particularly in the aftermath of the COVID-19 pandemic, and offer practical recommendations for enhancing financial inclusion and sustainability in post-conflict economies.

Finally, S.S. Weedige of Wayamba University of Sri Lanka investigates the *drivers of bancassurance adoption* by integrating the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB). Using Partial Least Squares Structural Equation Modelling (PLS-SEM) on primary survey data, the study finds that perceived usefulness and trust in banks significantly influence customers' attitudes and purchase intentions, while subjective norms and perceived behavioural control play crucial roles. This research provides actionable insights for financial institutions seeking to build consumer trust and promote financial inclusion through innovative service integration.

Together, these articles encapsulate the journal's mission to foster scholarly excellence, regional engagement, and methodological diversity. They collectively advance discourse in financial modelling, governance and accountability, microfinance resilience, and consumer behaviour in financial services—areas that are central to sustainable economic growth and development across Asia.

The editorial board extends its sincere appreciation to the contributing authors, reviewers, and the dedicated editorial team for their continued commitment to upholding the quality and relevance of the *Asian Journal of Finance*. We look forward to further strengthening this scholarly platform as a bridge between academic research and financial practice.

Warm regards,

Dr. K D U D Fernando
 Managing Editor
 Asian Journal of Finance
 Department of Accountancy & Finance
 Faculty of Management Studies
 Sabaragamuwa University of Sri Lanka



Article

Applicability of Geometric Brownian Motion and Geometric Fractional Brownian Motion to Forecast Share Prices of the Telecommunication Services Sector in Sri Lanka

A.K.K.K. Athukorala^{1*} and A.R. Dissanayake²

¹University of Moratuwa, Katubeddha, Sri Lanka

²University of Moratuwa, Katubeddha, Sri Lanka

Abstract: The Brownian motion is a Mathematical concept that European botanist Robert Brown introduced in 1827 to study the behaviour of molecules. The Brownian motion concept was transformed into many versions, and Geometric Brownian Motion (GBM) and Geometric Fractional Brownian Motion (GFBM) are the latest transformations of this concept. The GBM and GFBM are mathematical models used to forecast the prices of stocks, commodities, etc. In this study, the GBM and GFBM were tested to estimate the share prices of telecommunication industry companies in Sri Lanka. The two sample companies were selected to represent 18% of the population of the telecommunication industry group. The five-year share prices were collected from sample companies: Sri Lanka Telecom PLC and Dialog Axiata PLC. The two models were implemented by estimating parameters such as the drift, the volatility, probability measurement and the time interval. In addition, the Hurst component was generated by a MATLAB program for GFBM. This study concluded that GBM is the most accurate model for forecasting share prices of the telecommunication industry group with minimum mean absolute percentage error (MAPE).

Keywords: GBM, GFBM, MAPE.

*Corresponding Author: kalpanakumudukumari@gmail.com



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1. INTRODUCTION

1.1 The Stock Exchange

The stock market is a vital contributor to the economy of any country. The stock market or stock exchange is a market used for transacting shares. The transactions are issuing shares

by public companies and buying and selling the shares. These financial activities are performed through stock exchanges (whether physical or electronic) or over-the-counter (OTC) marketplaces according to the set of legislation. Since the evolution of technology, all financial activities are now conducted via online platforms.

The operations in the stock exchange can be divided into two groups: primary and secondary. In the primary market, the stock market works with organisations to issue and offer their shares to the general public for the first time through the process of an initial public offering (IPO). In the secondary market, these primary shares are transacted through a large number of investors according to the standard rule of “supply and demand”. As an advantage of the stock market, the public companies can raise their capital while the public grabs the opportunity for ownership of a public company. In addition, dividend payments are made to shareholders.

There may be one or more stock exchanges in a country. The stock exchange of Sri Lanka is named “Colombo Stock Exchange (CSE)”. The CSE was not built overnight, and it dates back to 1986. Its inception goes back to 1896, when it was known as the “Colombo Share Brokers Association (CSBA)”, and since then it has passed through many milestones. There are 297 public companies registered under the Companies Act No.07 of 2007. These public companies represent 20 Global Industry Classification Standard (GICS) industry groups with a market capitalisation of Rs. 5815.46 billion as at the 31st of January 2022. The public companies integrated under the Companies Act No.7 of 2007 or any other state corporations, inaugurated under the laws of Sri Lanka or initiated under the laws of any other state (subject to Exchange Control approval), are eligible for the registration of CSE according to the Securities & Exchange Commission Act No.36 of 1987 and the legislation of the exchange. The CSE maintains two indexes: the All Share Price Index (ASPI) and S&P SL20, and manages two main systems: central depository system and an automated trading system. The fifteen broker companies have been engaged with CSE by empowering the vision “To be the preferred choice for the creation of wealth and value”.

This study focuses on the two companies in the telecommunication services industry group: Sri Lanka Telecom PLC and Dialog Axiata PLC. According to the GICS hierarchy, telecommunication services are the leading industry group in the communication services sector. This industry group is divided into two industries: diversified telecommunication services and wireless telecommunication services. The diversified telecommunication services industry has two sub-industries: alternative carriers and integrated telecommunication services. The wireless telecommunication services industry has one subindustry. The sample industry group of this study is presented in Figure 1.

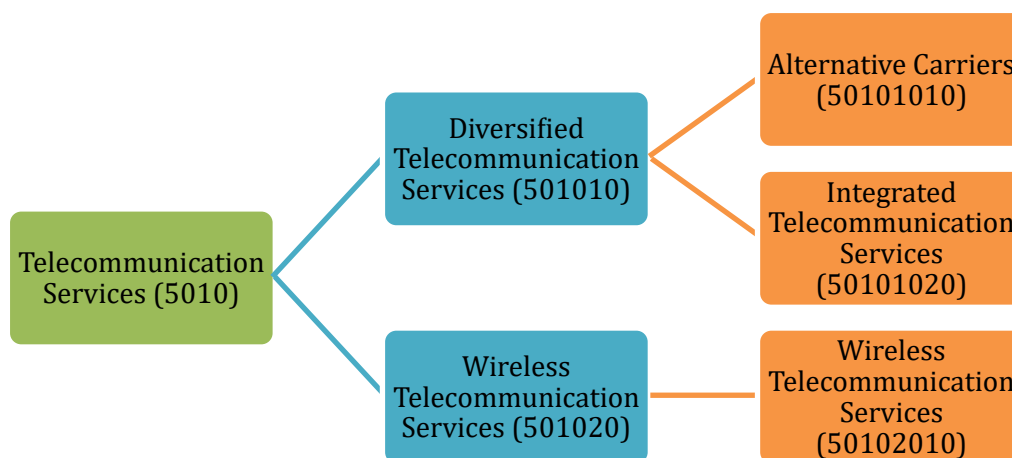


Figure 1: The industry group of telecommunication services

Source: Author's creation, 2024

1.2 Sri Lanka Telecom PLC

Sri Lanka Telecom PLC is a leading information & communication technology service provider in Sri Lanka. SLT serves a consumer base of over nine million islands-wide by empowering its latest technology with ultimate-speed fibre, copper and wireless access networks. SLT has vastly contributed to the Sri Lankan economy, as well, by diversifying its strategies of land and portable telephone, broadband, data services, Internet Protocol Television (IPTV), cloud computing and hosting services, and networking solutions. SLT has subsidiaries such as eChanneling PLC, Mobitel (Pvt) Ltd and the Sri Lanka Technological Campus. SLT has a market capitalisation of 1.69% in CSE by issuing 1,804,860,000 shares.

1.3 Dialog Axiata PLC

Dialog Axiata PLC is a subsidiary of Axiata Group Berhad (Axiata) and a well-known mobile telecommunication service provider in Sri Lanka. Dialog serves through its high-level portable communication and high-speed mobile broadband services to a consumer base of over 17 million Sri Lankans. Dialog also demonstrated the first 5G pilot transmission in South Asia. Dialog has a market capitalisation of 1.99% in CSE by issuing 117,399,866 shares.

1.4 Brownian Motion Concept

The Brownian motion is the concept of this study. It was founded by a European botanist, Robert Brown, in 1827. He introduced this concept to study the behaviour of molecules based on the kinetic-molecular conception of matter. In 1905, Albert Einstein developed a scientific approach, and Norbert Wiener formulated a mathematical expression for it in 1918. The French Mathematician Bachelier improved this concept for modelling share price fluctuations. The Geometric Brownian Motion (GBM) model is the latest outcome of this

concept, and it can be generalised by the Geometric Fractional Brownian Motion (GFBM) model.

This study refers to the applicability of the Brownian motion concept to the telecommunication services sector in Sri Lanka. This Brownian motion concept is commonly used in modelling stock price movements due to its stochastic nature. Therefore, It has broadly tested the GBM and GFBM in order to select the most accurate model for forecasting share prices of the telecommunication services sector.

1.5 Research Objectives

Primary Objective

To test the most accurate model between GBM and GFBM for forecasting share prices in the telecommunication service sector companies in Sri Lanka.

Secondary Objectives

- To study the concept of Brownian motion in the field of Financial Mathematics.
- To study the GBM and GFBM models.
- To estimate the parameters of sample companies for GBM and GFBM models.
- To apply both models to sample companies.
- To analyse the most accurate model by comparing the Mean Absolute Percentage Error (MAPE).

2. LITERATURE REVIEW

Ibrahim et al. (2020) investigated the accuracy of GBM and GFBM in modelling Malaysia's crude palm oil price simulation. In their research, persistent and anti-persistent behaviour across different periods was displayed. The Hurst component was calculated in three different methods: absolute moment, aggregate variance, and the Higuchi method.

According to Areerak (2014), the Brownian Motion model with adaptive parameters (BMAP) and the Fractional Brownian Motion model with adaptive parameters (FBMAP) were tested to forecast future share prices in two companies in the Thai stock market. The ADVANC Info Service Public Company Limited (ADVANC) and Land and Houses Public Company Limited (LH) closed prices are discussed in the paper. He concluded that FBMAP was the most suitable model for forecasting the share prices of his sample companies. As a new point, the parameters were adapted to avoid the effect of closed days of the share market.

The review looks at the way South African monetary business sectors behave with respect to the GBM process. It utilizes the daily, weekly, and monthly stock returns time series of a few significant protections exchanging the South African monetary market, all the more explicitly the US dollar/Euro, JSE ALSI Total Returns Index, South African All Bond Index,

Anglo-American Corporation, Standard Bank, Sasol, US dollar Gold Price, Brent spot oil cost, and South African white maize not so distant future. It likewise uncovers the presence of both long memory and random walk or GBM in the South African monetary business sectors returns when the Hurst component estimation is utilised and observes that the Currency market is the most efficient of the South African monetary business sectors. That's what the review infers, albeit a few presumptions that the cycle is abused, the Brownian motion as a model in South African monetary business sectors can't be dismissed. It very well may be acknowledged in certain occasions if a few boundaries, for example, the Hurst component, are added (Karangwa, 2008).

According to Agustini et al. (2018), the GBM model is the most accurate prediction technique for forecasting share prices, with a 95% confidence level, as evidenced by an MAPE of less than 20%. In this study, the share prices are obtained from the Indonesian stock exchange under the Jakarta Composite Index, which includes Charoen Pokphand Indonesia Tbk, Harum Energy Tbk, Media Nusantara Citra Tbk, PP London Sumatra Indonesia Tbk, Vale Indonesia Tbk, Indo Tambangraya Megah Tbk, and Indocement Tunggul Prakasa Tbk.

It is realised that the market records of Saudi Arabia, which is named the Tadawul All Share Index (TASI), mirror the exhibition of economic development and monetary stability of Saudi Arabia. Consequently, determining the performance is very significant. In this experimental review, we determined the daily index prices of TASI for the year 2018. To act on this, we relied upon two models, including GBM and GFBM. Further, the estimation of each model was acquired dependent on three unique approaches of calculating volatility, such as simple volatility, log volatility and stochastic volatility. In the interim, the assessment of the presentation of each model was determined by utilizing mean absolute percentage error (MAPE). The outcomes uncovered that all models have high precision with paltry distinction. This demonstrates that every model can be accustomed to anticipating the exhibition of TASI (Alhagyan & Alduais, 2020).

Si and Bishi (2020) used GBM to forecast share prices in the Bombay Stock Exchange (BSE). He proved it with a MAPE value of less than 10% i.e. 5.41%. Before forecasting the stock price using the GBM model, the Kolmogorov-Smirnov test and the Q-Q plot technique were run on the sample data to verify that the data are normally distributed and practicable to forecast.

Until the 1970s, most Muslim people were not associated with the share market venture due to the Islamic prohibitions of specific activities. During the 1990s, a significant advancement happened in a portion of the arrangements of regulation related to religious equity ventures, and from that point forward, the Islamic equity funds began working. The securities exchange is where securities of organisations are traded under strict standards, guidelines and rules. The Malaysian stock exchange is called Bursa Malaysia. Syria-based equity is essentially portions of the organisation meeting the standards of Islamic law. Roughly 88% of the ongoing effects of posting on BM are Syria agreeable and address two-thirds of the market capitalisation of Malaysia. The securities exchange follows Brownian

motion, where the assets are ceaselessly assigned in tiny time spans and positions, and the value of the assets of the country varies by an irregular number. The paper conjectures that Syria's counter is in four areas: development, money, agriculture and trading services. The technique involved was the Geometric Brownian motion as far as instability models. This strategy can be applied by the analyst to gauge the stock prices (Omar & Jaffar, 2011).

This empirical literature was helpful in this research study to develop the theoretical background. Moreover, the structure of this study is sketched by using research that was conducted in many different countries, not only for the stock market, but for the commodity market.

According to the literature, these two approaches (GBM & GFBM) were used in Financial Mathematics in forecasting share prices in several sectors in many countries. Therefore, the determination of the most accurate model among GBM and GFBM for forecasting share prices of telecommunication services sector companies in Sri Lankan context could be identified as the empirical research gap of this study.

3. RESEARCH METHODOLOGY

3.1 Population

The population of the research is based on the Global Industrial Classification Standard (GICS). GICS was developed by an independent international financial data and investment services company called S&P Dow Jones Indices. The GICS hierarchy consists of 11 sectors, 24 industry groups, 69 industries and 158 sub-industries. Therefore, GICS has become the universal classification for financial investment research, industry analysis, portfolio management and asset allocation. According to the methodology of GICS, a single sector can be categorised as shown in Figure 2.



Figure 2: The structure of GICS
Source: Author's creation, 2024

There are two industry groups in the communication services sector, and one of these industry groups is based on the population. The hierarchy of the communication services sector can be shown in Figure 3.

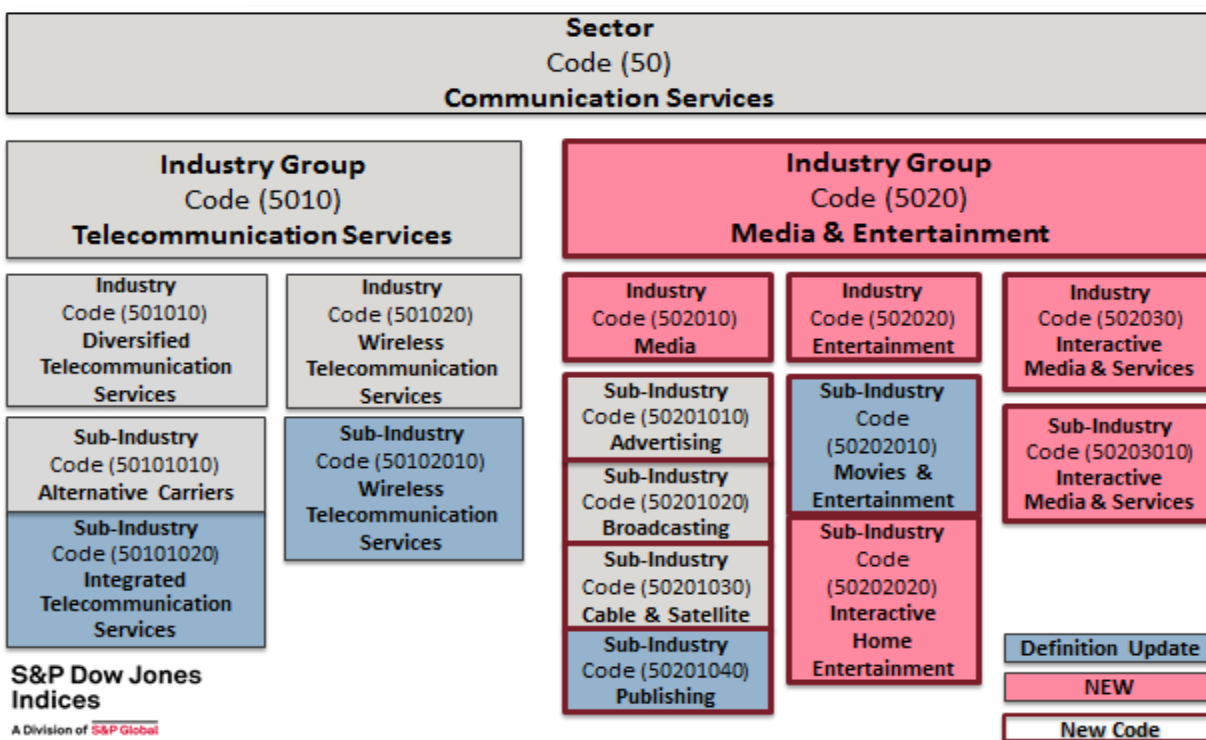


Figure 3: The hierarchy of communication services

Source:

The industry group “Telecommunication Services” consists of two industries: diversified telecommunication services and wireless telecommunication services. The industry of diversified telecommunication services has two sub-industries called alternative careers and integrated telecommunication services. The 11 companies which have obtained the license of the Telecommunication Regulatory Commission of Sri Lanka (TRC) were selected as the population of the research. These 11 companies are as follows.

- Sri Lanka Telecom PLC
- Lanka Bell Ltd
- Dialog Broadband Networks (Pvt) Ltd
- Hutchinson Telecommunication Lanka (Pvt) Ltd
- Bharti Airtel Lanka (Pvt) Ltd
- Mobitel (Pvt) Ltd
- Dialog Axiata PLC
- TATA Communications Lanka Ltd

- Lanka Communication Services (Pvt) Ltd
- Societe International Telecommunications Aeronautiques (SITA)
- Lanka Education & Research Network (LEARN)

3.2 Sample

The two sample companies are selected from Eleven telecommunication companies serve the population. These two companies are the only two telecommunication companies that issues shared with the general public. The sample proportion can be calculated as 18.2% $\left(\frac{2}{11} \times 100\%\right)$. The following two companies, which are registered in the Colombo Stock Exchange (CSE) were selected as the sample.

- Sri Lanka Telecom PLC
- Dialog Axiata PLC

3.3 Sampling Method

In statistics, there are four non-probability sampling methods, such as convenience sampling, judgmental /purposive sampling, snowball sampling and quota sampling. The purposive sampling is a sampling method that is purely built according to the purpose of the research. The accuracy of a mathematical model for forecasting share prices is tested in this research. Therefore, public limited companies should be selected for the sample. The two companies which are registered in CSE are purposively selected among the population of 11 telecommunication services companies.

3.4 Data Collection Method

The two kinds of data are introduced in the research methodology. They are primary data and secondary data. Primary data is obtained directly by the data source, and secondary data is the data that has been gathered in the past by someone else and shared publicly. The share prices of sample companies are taken from [the www.investing.com](http://www.investing.com) website. Therefore, the data of the research is secondary and collected in an automated way by entering the time duration.

The daily share prices of each company for the five-year period (from 01st Jan 2016 to 31st Dec 2020) is collected. The actual data for SLT is from 05/01/2016 to 31/12/2020, and the actual data for Dialog is from 04/01/2016 to 31/12/2020. The details of share prices can be shown in Table 1.

Table 1: No of share prices per year

Company	2016	2017	2018	2019	2020	Average
---------	------	------	------	------	------	---------

SLT	235	233	237	237	208	230
Dialog	239	241	240	241	209	234

Source: Author's creation, 2024

3.5 Tools

The MATLAB software package is used to calculate the Hurst component, and MINITAB is used for the descriptive analysis. The entire model is analysed with Microsoft Excel.

4. ANALYTICAL FRAMEWORK

The theoretical formulas that were used for the analysis are clearly presented under the following sub-topics.

4.1 GBM Model

The final formula for GBM can be presented as follows. The $S(t + \Delta t)$ be the forecasted share price.

$$S(t + \Delta t) = S(t) \cdot \exp \left[\left(\mu - \frac{1}{2} \sigma^2 \right) \Delta t + \sigma z \sqrt{\Delta t} \right] \quad (1)$$

Where

- μ - Annual Drift
- σ - Annual Volatility
- z - Inverse of the Standard Normal Probability
- Δt - Time difference between two consecutive trading periods (years)
- $S(t)$ - Share price in the previous time period

In order to forecast share prices using GBM, the parameters of annual volatility, annual drift, and the standard normal probability should be estimated.

Calculation of Annual Volatility

The volatility is a fixed parameter of a stock and is expressed annually. The volatility gives an opinion on the stability of share prices. The high volatility refers to the stock price, which changes continuously within a relatively high interval. The most common and accepted method of measuring the stock volatility is the standard deviation of the price returns. The following algorithm is used to calculate the annual volatility.

Let S_i be the stock price at the end i^{th} merchandising period and u_i be the logarithm of the daily return as follows.

$$u_i = \ln \ln \left(\frac{S_i}{S_{i-1}} \right) \quad \text{for } i = 1 \dots n \quad (2)$$

The $\underline{u}$ be the mean and v be the standard deviation of u_i . The annual volatility (σ) can be obtained by using the estimated $\underline{u}$ and v .

$$\text{annual volatility } (\sigma) = \frac{v}{\sqrt{\Delta t}} \quad (3)$$

Calculation of Annual Drift

$$\text{Annual Drift}(\mu) = \frac{\underline{u}}{\Delta t} + \frac{\sigma^2}{2} \quad (4)$$

Calculation of Probability Measurement

A continuous random variable S_t act in accordance with a lognormal distribution, if its natural logarithm, $\ln \ln (S(t))$ undergoes a normal distribution. Here, $S(t)$ follows a lognormal distribution, since $(S(t))$ follows the normal distribution. Let the mean and the standard deviation of $(S(t))$ The data set is m & s

$$\ln \ln (S(t)) \sim N(m, s^2) \Rightarrow S(t) \sim \text{lognormal}$$

Probability density function of log-normal distribution,

$$f(S(t), m, s) = \frac{1}{\sqrt{2\pi} \cdot s \cdot S(t)} \exp \left[-\frac{[\ln \ln (S(t)) - m]^2}{2s^2} \right] \quad (5)$$

Where,

Mean	$\mu' = \exp \left[\left(m + \frac{s^2}{2} \right) \right]$
Variance	$\sigma'^2 = [e^{s^2} - 1] \exp[(2m + s^2)]$

The standard normal probability (z) for each share price at t can be obtained by the inverse of the probability density function, which is calculated in formula 5.

4.2 GFBM Model

The final formula for GFBM can be presented as follows. The $S_H(t + \Delta t)$ be the forecasted share price.

$$S_H(t + \Delta t) = S(t) \cdot \exp \left[\left(\hat{\mu} \Delta t - \frac{1}{2} \hat{\sigma}^2 (\Delta t)^{2H} + \hat{\sigma} z \sqrt{(\Delta t)^{2H}} \right) \right] \quad (6)$$

Where,

- H - Hurst component
- $\hat{\mu}$ - Annual Drift with Hurst component
- $\hat{\sigma}$ - Annual Volatility with Hurst Component

Δt - Time difference between two consecutive trading periods (years)

$S(t)$ - Share price during the previous time period

In order to forecast share prices using GFBM, the parameters of $H, \hat{\mu}, \hat{\sigma}$ should be estimated. The calculation of z is similar to the GBM model.

Calculation of Hurst Component

There are nine methods to estimate the Hurst component. The rescaled range analysis is the most used and most accurate method to estimate the Hurst component. In this study, the rescaled range analysis is applied to find the Hurst component and the algorithm is given in Figure 4.

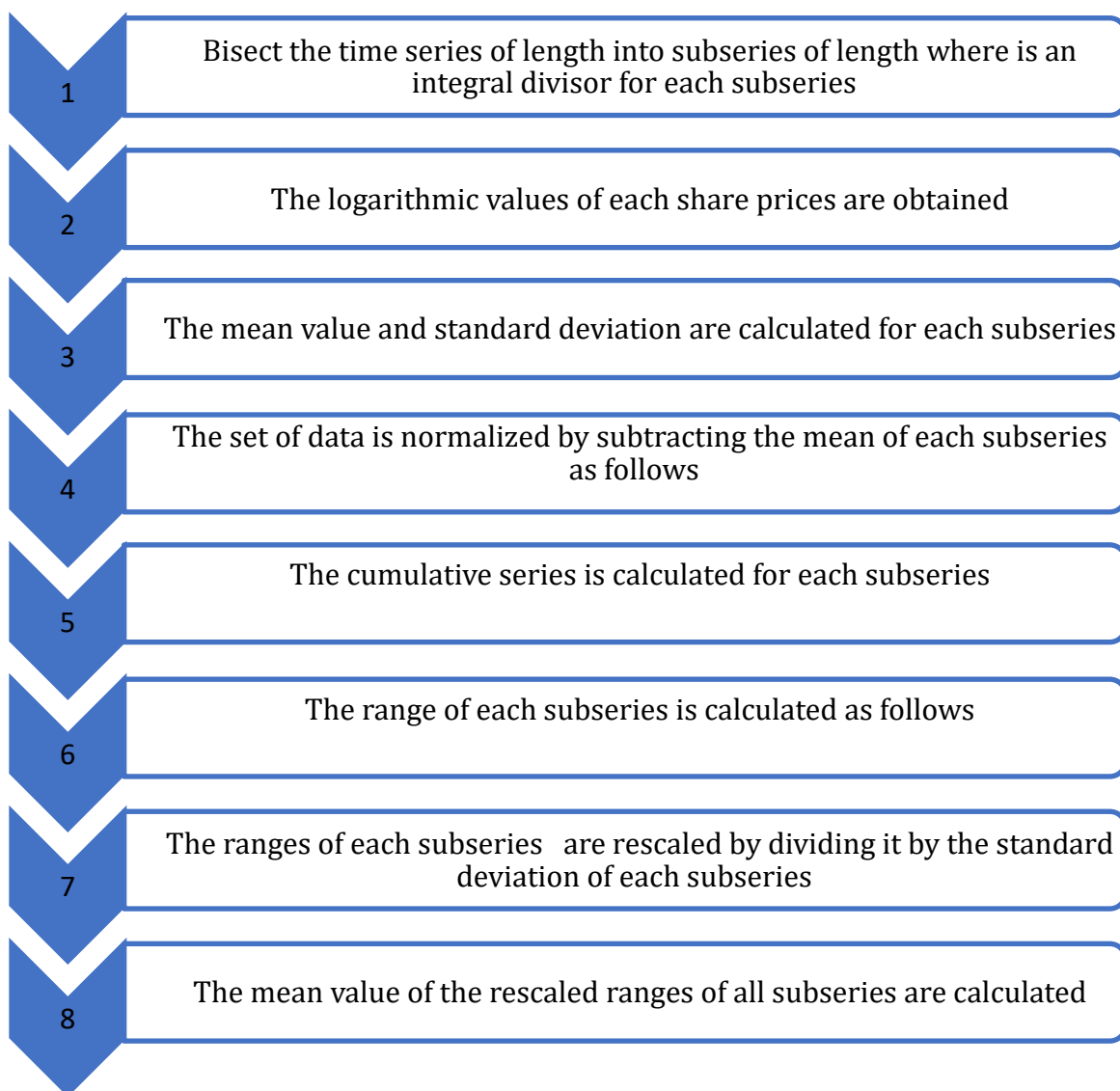


Figure 4: Algorithm of Hurst Component

Source: Author's creation, 2024

The above algorithm is processed by the MATLAB program. The $(R/S)_l$ components for relevant divisions of time series can be obtained by the program.

The $(R/S)_l$ statistic follows the relation, $(R/S)_l = c * l^H$. Thus, the value of H can be generated by using a simple linear regression. The variable $\log \log (l)$ as the independent, and the variable $\log \log ((R/S)_l)$ is the dependent. The slope of the resulting Equation 7 is the value of the Hurst component.

$$\begin{aligned} \left(\frac{R}{S}\right)_l &= c * l^H \\ \ln \ln \left[\left(\frac{R}{S}\right)_l\right] &= \ln \ln [c * l^H] \\ \ln \ln \left[\left(\frac{R}{S}\right)_l\right] &= \ln \ln [c] + H * \ln \ln [l] \\ \ln \ln \left[\left(\frac{R}{S}\right)_l\right] &= H * \ln \ln [l] + \ln \ln [c] \end{aligned} \quad (7)$$

Calculation of Volatility with the Hurst Component

The volatility formula is slightly varied due to the Hurst component as follows.

$$\hat{\sigma} = \frac{v}{\sqrt{(\Delta t)^{2H}}} \quad (8)$$

Calculation of Drift with the Hurst Component

The drift with the Hurst component can be obtained by substituting values for formula 9.

$$\hat{\mu} = \frac{u}{\Delta t} + \frac{\hat{\sigma}^2}{2} \quad (9)$$

4.3 Calculation of MAPE

This is the most important calculation for the final result. The minimum MAPE values are obtained to choose the most accurate model. The MAPE is calculated by using the following formula.

$$MAPE = \frac{1}{n} \sum_{i=1}^n \frac{(A-F)}{A} \quad (10)$$

Where,

A	-	Actual share price
F	-	Forecasted share price
n	-	Number of data points

The interpretation of MAPE is shown in Table 2.

Table 2: Interpretation of MAPE

MAPE Value	Interpretation
< 10%	A highly accurate forecasting
10 – 20%	A good forecasting
20 – 50%	A reasonable forecast
> 50%	An inaccurate forecast

Source: Brătian et al, 2021

5. ANALYSIS

5.1 Descriptive Analysis

The abstract of the descriptive analysis is presented in Table 3. The number of data points of SLT and Dialog is 1150 and 1170, respectively. The mean share price and standard deviation of SLT are 30.232 and 5.65, respectively. The mean share price and standard deviation of Dialog are 11.514 and 1.375, respectively.

Table 3: The summary of descriptive analysis

Statistic	SLT	Dialog
No of variables	1150	1170
Mean	30.232	11.514
Standard Deviation	5.650	1.375
Variance	31.927	1.892
Minimum Value	19.000	8.000
First Quartile	26.100	10.600
Median	30.000	11.400
Third Quartile	34.125	12.400
Maximum Value	46.400	14.800
Mode	30	11.4
Frequency for the mode	39	59
Skewness	0.14	0.29
Kurtosis	-0.64	-0.40

Source: Author's creation, 2024

5.2 GBM & GFBM Model

The estimated parameters for GBM and GFBM models are shown in Table 4. The estimation of Δt is taken by assuming the average number of days per year for SLT and Dialog as 230 and 234, respectively.

Table 4: Parameter estimation for GBM & GFBM

Parameter	SLT	Dialog
$\underline{u}$	-0.000273	0.000134
$\underline{v}$	0.024671	0.014378
σ	0.374	0.2199
μ	0.007148	0.0555
Δt	$\frac{1}{230}$	$\frac{1}{234}$
H	1.034817	1.003783
$\hat{\sigma}$	6.857155	3.4250
$\hat{\mu}$	23.4475	5.8967

Source: Author's creation, 2024

After applying time-independent variables to GBM, the final formulas for SLT and Dialog are presented in 11 and 12, respectively.

$$S(t + \Delta t) = S(t) \cdot \exp[-0.000273 + 0.0247z] \quad (11)$$

$$S(t + \Delta t) = S(t) \cdot \exp[0.000134 + 0.0144z] \quad (12)$$

After applying time-independent variables to GFBM, the final formulas for SLT and Dialog are presented in 13 and 14, respectively.

$$S_H(t + \Delta t) = S(t) \cdot \exp[0.1016 + 0.0247z] \quad (13)$$

$$S_H(t + \Delta t) = S(t) \cdot \exp[0.0251 + 0.0144z] \quad (14)$$

The time series plots of actual and forecasted share prices using GBM and GFBM of SLT are demonstrated in Figure 5 and Figure 6, respectively. Furthermore, the time series plots of actual and forecasted share prices using GBM and GFBM of Dialog are demonstrated in Figure 7 and Figure 8, respectively.

5.3 Graphical Representation of Forecasted Data

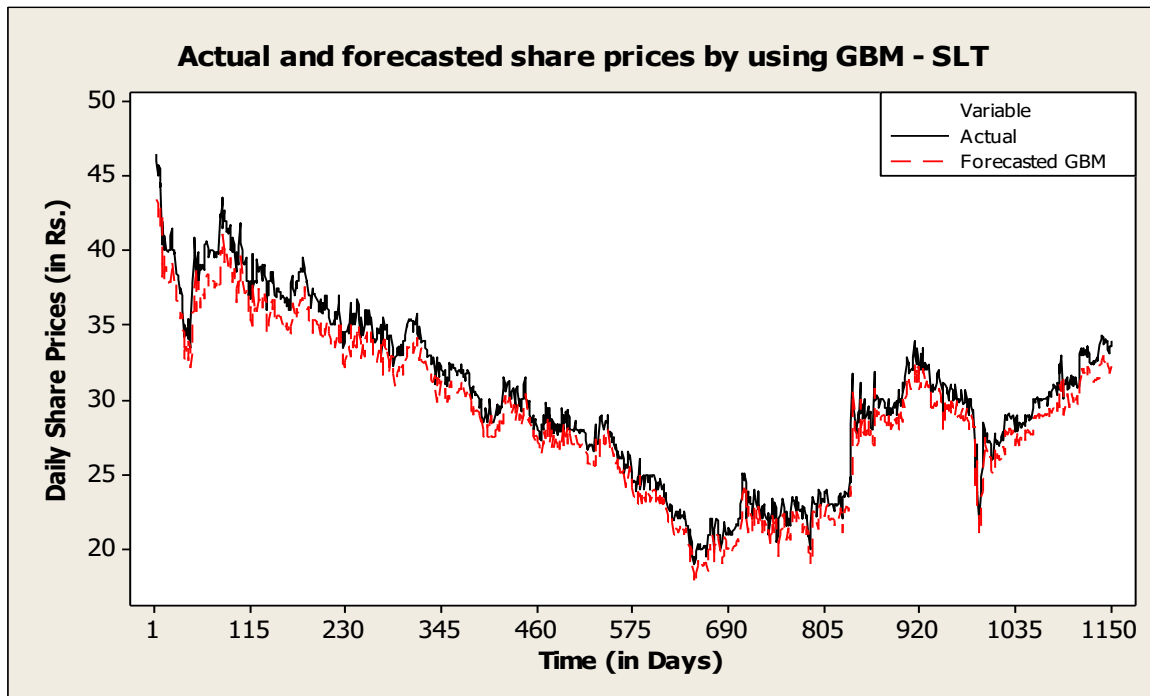


Figure 5: Actual and forecasted share prices using GBM – SLT
Source: Author's creation, 2024

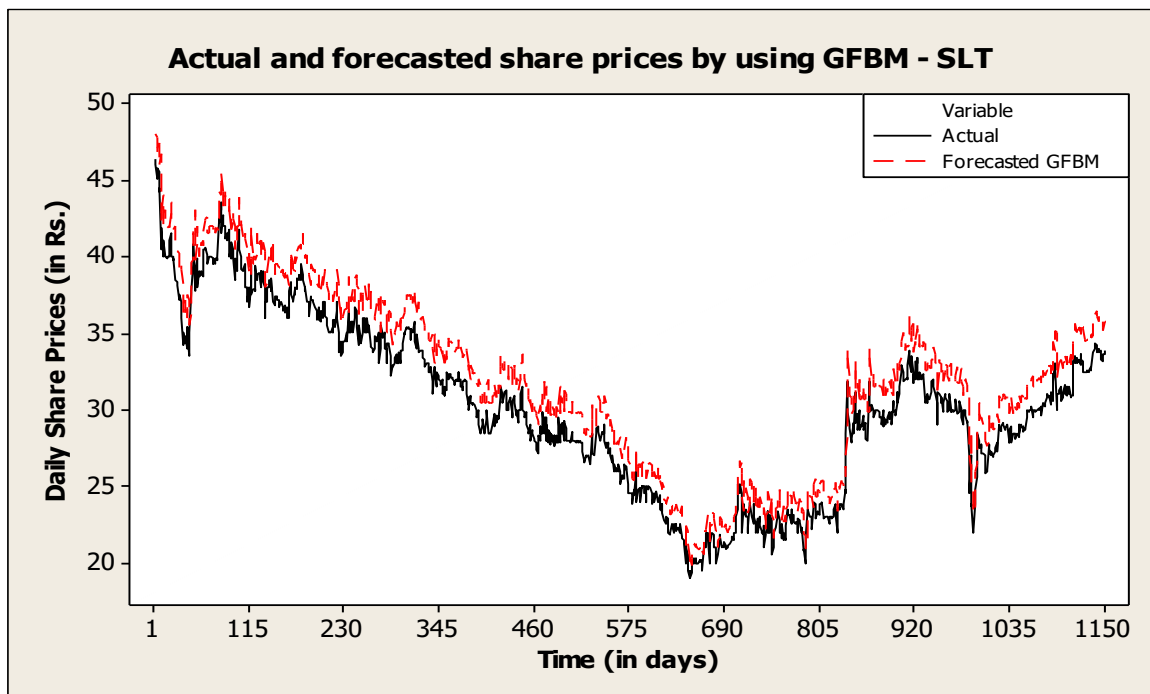


Figure 6: Actual and forecasted share prices using GFBM – SLT
Source: Author's creation, 2024

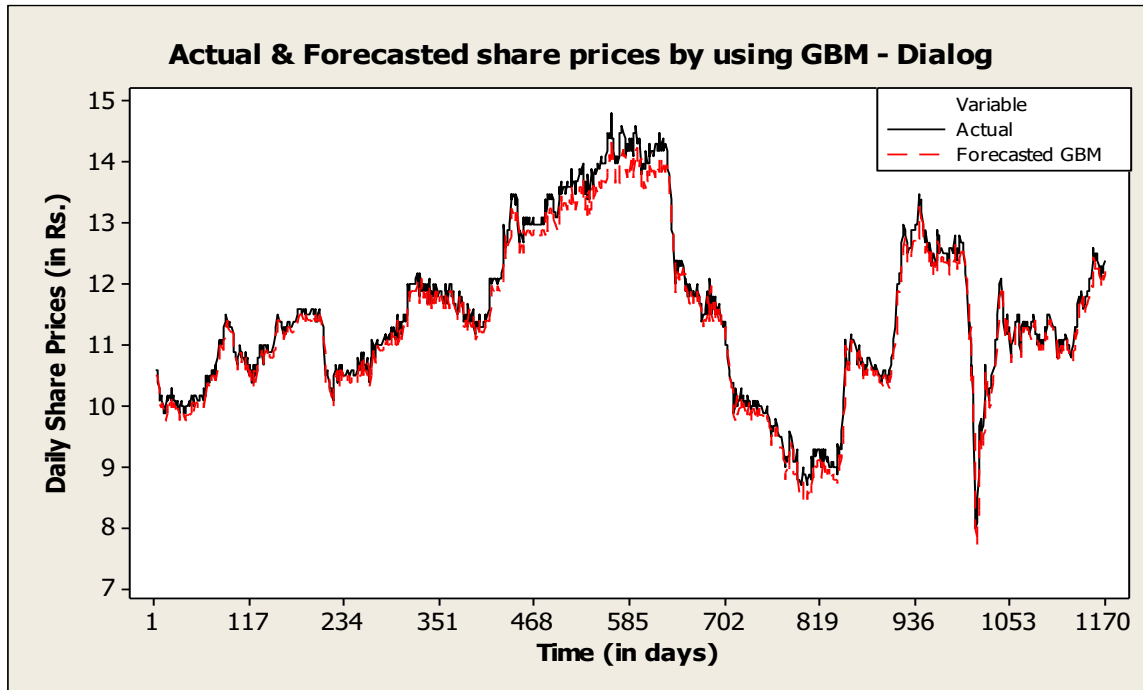


Figure 7: Actual and forecasted share prices using GBM – Dialog
 Source: Author's creation, 2024

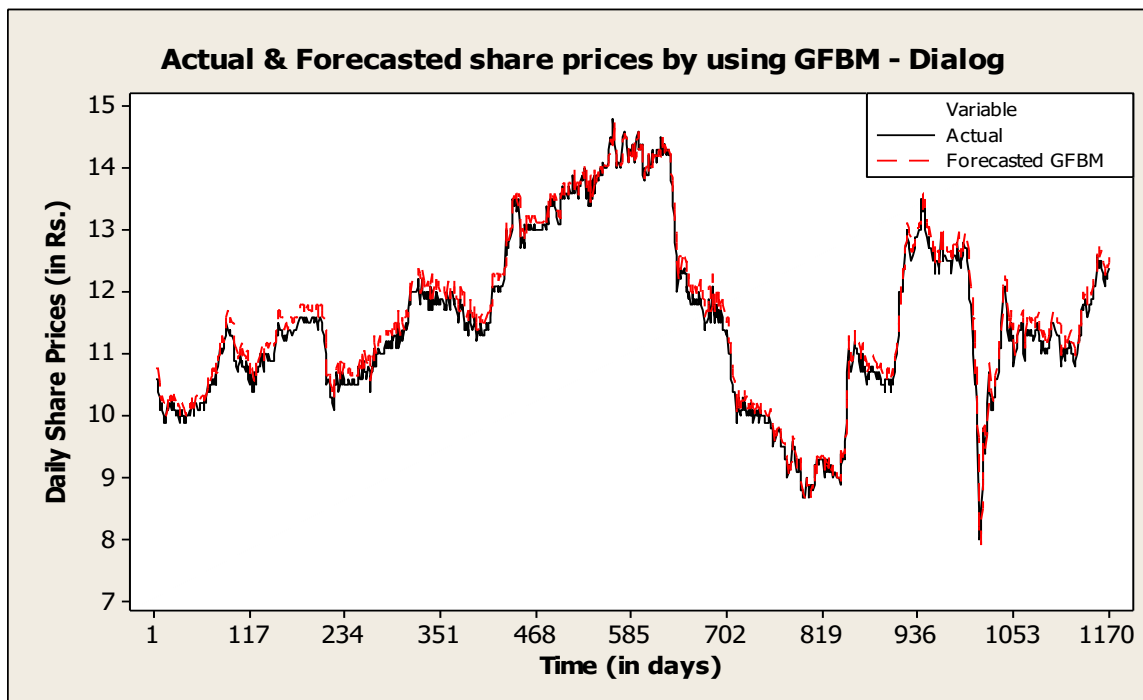


Figure 8: Actual and forecasted share prices using GFBM – Dialog
 Source: Author's creation, 2024

6. DISCUSSION AND CONCLUSION

In this study, two mathematical models are tested to forecast share prices. The daily share prices for the 5 years of the two companies in the telecommunication sector was analysed. In this chapter, the summary of the research is presented.

As the first sample company, 1150 daily share prices for five years are obtained from Sri Lanka Telecom PLC. SLT has 230 trading days per year. The mean share price is Rs 30.232, and the variance is 31.927. The share prices varied from Rs 19 to Rs 46.4, representing the minimum and maximum values, respectively, within the five-year time period.

As the second sample company, 1170 daily share prices for five years are obtained from Dialog Axiata PLC. Dialog has 234 trading days per year. The mean share price and variance become Rs 11.514 and 1.892, respectively. The minimum and maximum share prices are Rs . 8 and Rs . 14.8.

By comparing these descriptive statistics of both companies, the mean value of a single share of SLT is greater than that of Dialog. Also, the high liquidity of SLT can be noticed more than that of Dialog. Both companies were affected by COVID-19 pandemic, and it led to a reduction of average trading days per year. Since the CSE was closed at the beginning of 2020, there were only 208 and 209 trading days in 2020 for SLT and Dialog, respectively.

As the ultimate result of this study, the share prices of each company are estimated using GBM and GFBM models. In order to estimate share prices by using GBM, the parameters of $S(t)$, μ , σ , Δt and z should be calculated for each company. The parameters of μ , σ and Δt are independent of time and have a single constant value for the whole time series. The parameters of $S(t)$ and z are dependent variables of time and have a series of values.

In order to estimate share prices by using GFBM, the parameters of $S(t)$, $\hat{\mu}$, $\hat{\sigma}$, Δt and z should be calculated. The parameters of $\hat{\mu}$, $\hat{\sigma}$ and Δt are independent of time and have a single constant value for the whole time series. The parameters of $S(t)$ and z are dependent variables of time and have a series of values.

The estimated share prices for both companies were obtained using GBM and GFBM. The mean absolute percentage error can be presented in Table 5.

Table 5: MAPE values

Company	GBM	GFBM
SLT	4.2%	6.3%
Dialog	1.5%	1.6%

Source: Author's creation, 2024

Since the minimum MAPE values, GBM is the most accurate model for forecasting the share prices of both companies, SLT and Dialog.

The GBM is the most accurate model between GBM and GFBM for forecasting share prices of the telecommunication sector in Sri Lanka.

6.1 Recommendations for Future Researches

The four stakeholders can be introduced through this study. They are:

- Two sample companies
- The other telecommunication companies in the population
- The current shareholders of the sample companies
- The people who wish to invest in the telecommunication sector

The recommendation which can be given to all the above stakeholders are to forecast share prices by using the GBM model and make rational decisions. Investors can use GBM's accurate forecasts to better assess the risk and volatility associated with telecommunication stocks, and it may lead to portfolio diversification and risk mitigation. Policymakers and regulatory bodies can use the volatility and drift estimates from GBM to monitor market stability and identify periods of excessive speculation or instability in the telecommunication sector. The telecommunications sector is critical for infrastructure and digital economy growth. Reliable stock price forecasts can attract more foreign direct investment, aiding in the economic advancement of Sri Lanka.

The GBM and GFBM models are tested to forecast the share prices of telecommunication sector companies in Sri Lanka. The same models can be used to forecast share prices of other sectors of the GICS classification in CSE.

In this research, the rescaled range analysis was used to estimate the Hurst component. There are more than eight methods to calculate the Hurst component, such as the aggregate variance method, the Higuchi method, and the detrended fluctuation analysis, etc. This research can be followed by estimating the Hurst component by using other methods.

The concept of GBM and GFBM can be applied to forecasting the prices of the commodity market. Although it is not practicable for Sri Lanka, it can be implemented for the commodity markets in other countries.

The research can be enhanced to test these GBM and GFBM models when the market is affected by external factors such as the COVID-19 pandemic, economic crisis and terrorist attacks.

The time series forecasting techniques, such as Auto Regressive Integrated Moving Average (ARIMA) models, can be used for forecasting share prices, as well as the Geometric Brownian motion concept. But GBM and GFBM are widely used in financial mathematics because they are designed to model the stochastic behaviour of asset prices, capturing the random fluctuations and volatility present in financial markets. GBM assumes a constant drift and volatility, aligning with the efficient market hypothesis, which suggests that price movements are largely random and unpredictable.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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Article

Review of Taxation, Corporate Social Responsibility, and Corporate Governance Research Interplay

H.A.C. Jeewanthi^{1*}

¹Department of Accountancy, Faculty of Management Studies and Finance, University of Ruhuna, Sri Lanka.

Abstract: This paper reviews the liaison among the prior articles that examined the interrelationship among taxation, corporate social responsibility (CSR), and corporate governance (CG) research published during the last 20 years to investigate knowledge developments and provide a future agenda. A bibliometric analysis was performed to examine the trends and patterns of knowledge development in combined CSR-CG-Taxation research to identify the productive authors and journals, influential papers, dominant countries, and the intellectual structure of the prior research, and to identify the interrelationships among CSR-CG-Taxation research. Thirty-seven peer-reviewed journal articles published between 2004 and 2023 in the Scopus database were selected for the final analysis. VOSviewer software was utilised to analyse the bibliometric data. The results revealed that the research on the CSR-CG-Taxation interplay is an emerging area with a shorter history of less than a decade. Despite the research in this area just appearing, the prior studies have embraced different key themes to extend the knowledge, indicating the importance and diversity of this area. The key themes of prior research on CSR-CG-Taxation interplay have revealed two main streams. While many studies focus on the role of CG in CSR and taxation interplay, several other studies focus on the role of CSR in CG and taxation interplay. Notably, this review proposed several avenues for further research. Review findings are significant for scholars, policymakers, governments, and the business community, as findings provide significant insights regarding the involvement of combined CSR and CG attributes in tax-related decision-making. Overall, this review provides valuable insights into responsible corporate behaviour from the role of corporate governance in CSR and tax-related decision-making, as well as CSR in CG and tax-related decision-making, emphasising its significance for social and economic development. Moreover, this research area can further be extended by exploring the impact of legal and illegal taxation on CSR and CG attributes using empirical evidence from different geographical locations.

Keywords: Bibliometric, Corporate Governance, Corporate Social Responsibility, Taxation, VOSviewer

*Corresponding Author: jeewanthi@mgt.ruh.ac.lk



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1. INTRODUCTION

Recently, the research on corporate social responsibility (CSR), corporate governance (CG), and taxation has gained increasing popularity not only among scholars but also among practitioners, governments, and the public (Abdelfattah & Aboud, 2020; Benlemlih et al., 2023; Davis et al., 2022). While CG is defined as a manner in which organisations are managed and governed (OECD, 2004), it includes a set of procedures, mechanisms, and relationships by which most corporations are controlled and managed (Chen et al., 2022; E-Vahdati et al., 2019; Ebrahim & Fattah, 2015; Enciso-Alfaro & García-Sánchez, 2023). CSR practices are any activity that involves firms' efforts to make a positive impact on the environment and society (Abdelfattah & Aboud, 2020; Afrizal et al., 2020; Alatawi et al., 2023; Bonsón & Bednárová, 2015). It comprises economic, social, legal, ethical, environmental, and philanthropic responsibilities (Du & Li, 2023; Kong et al., 2022). Conversely, taxation is identified as handling tax compliance within the legal boundaries and paying a fair share of profits, which has a direct impact on the value of shareholders (Huseynov & Klamm, 2012; Kao & Liao, 2021) and an indirect effect on the smooth functioning of the organisation, state, and the well-being of the society (Abdelfattah & Aboud, 2020; Kenyon, 2008).

Although taxation is a compulsory legal obligation (Abdelfattah & Aboud, 2020), CSR is generally considered a voluntary requirement rather than a regulatory requirement (Choi et al., 2019). Even though organisations' responsibilities regarding taxation and CSR are relatively different, both CSR and tax compliance play similar roles in demonstrating socially responsible corporate behaviour (Abdelfattah & Aboud, 2020). Hence, the role of CG is critical in managing CSR and taxation practices to meet the expectations of shareholders and wider stakeholders (Chen et al., 2022; Firmansyah & Triastie, 2020). As per agency theory, the prime objective of business organisations is to operate businesses in the best interest of the shareholders and to increase their value (Haw et al., 2004). In contrast, based on responsible behavioural theories such as ethics theory, legitimacy theory, and stakeholder theory, corporations need to be responsible in complying with ethical business practices, paying legitimate tax liability, and undertaking socially responsible activities to meet the conflicting expectations of the broader stakeholders (Abdelfattah & Aboud, 2020; Firmansyah & Triastie, 2020). Recently, growing studies have started to explore the association between CSR, CG, and taxation practices, as they are critical factors in determining regulatory compliance, responsible corporate behaviour, and shareholder value (Abdelfattah & Aboud, 2020; Pratiwi & Siregar, 2019; Salhi et al., 2020).

In literature, the impact of CG on corporate socially responsible behaviour regarding the adoption of voluntary CSR practices and handling regulatory tax-related compliances is highly debatable, with inconclusive and contrasting findings (Firmansyah & Estutik, 2020; Firmansyah & Triastie, 2020; Lanis & Richardson, 2018; Probohudono et al., 2015; Silvera et al., 2022). Although CG is the cornerstone of business organisations, its behaviour in

addressing socially responsible practices in terms of CSR and tax-related decision-making is unclear. Moreover, how and to what extent these combined CSR, CG, and taxation attributes operate is also indecisive (Abdelfattah & Aboud, 2020; Huseynov & Klamm, 2012; Lanis & Richardson, 2018; Rudyanto et al., 2023; Silvera et al., 2022). While some studies found that governance attributes influence the adoption of more CSR practices to avoid tax liabilities and build organisational reputation, other scholars found that governance attributes influence more legitimate tax compliance when they are involved in higher CSR than lower CSR practices (Abdelfattah & Aboud, 2020; Ali et al., 2022; Arora & Gill, 2022; Landry et al., 2013; Lanis & Richardson, 2018). Notably, the involvement of good CG in paying a fair share of taxes and implementing ethical CSR practices can support the achievement of a balanced development of business organisations and society (Huseynov & Klamm, 2012; Kiesewetter & Manthey, 2017). However, empirical findings on combined CSR-CG-Taxation studies reveal different organisational practices, behaviours, and diverse interrelationships in different locations and contexts (Landry et al., 2013; Lanis & Richardson, 2018; Rudyanto et al., 2023; Silvera et al., 2022; Tan et al., 2023). Although the studies on combined CSR, CG, and taxation are increasing, a clear understanding of the knowledge structures, trends, and nexus within this study area is unobserved. Hence, this paper addresses the main problem of 'What are the knowledge developments in the combined CSR-CG-Taxation research and the agenda for the future?'

Thus far, literature reviews exploring the combined CSR-CG-Taxation research interplay have not yet been attempted. Examining prior studies on combined CG-CSR-Taxation practices is vital as it opens the debates for responsible organisational behaviour, managing conflicting stakeholders' interests, and indirectly influencing the effective functioning of governments and the well-being of society (Abdelfattah & Aboud, 2020; Beasley et al., 2021). Accordingly, this paper aims to scientifically map the prior publications on combined CG, CSR, and taxation research to identify the knowledge patterns, trends, and future research postulates for advancing the literature. There are different types of reviews, such as scoping reviews, bibliometric reviews, meta-analysis-based reviews, and systematic literature reviews (Singhania et al., 2022). This paper follows the bibliometric review approach as it is more suitable for providing a comprehensive overview of the current status of knowledge, unexplored patterns, and relationships within a CSR-CG-Taxation research context. Consequently, this review aims to answer the following sub-research questions to address the main problem:

RQ1: What are the leading journals publishing the interrelated CG-CSR-Taxation research?

RQ2: Who are the productive authors investigating the interrelationship among CSR-CG-Taxation research?

RQ3: What are the influential papers in the combined CSR-CG-Taxation research domain?

RQ4: Which countries are the major contributors to integrated CSR-CG-Taxation research?

RQ5: Which topics and themes under CSR-CG-Taxation research have been examined in the past, and what are the trends for future research?

The remaining sections of this paper are organised as follows. The next section discusses the methodology, including the bibliometric approach, followed by the results and analysis. The fourth section provides discussion, literature gaps, and suggestions for future research. The last section offers a conclusion, including the implications and limitations of the study.

2. RESEARCH METHODOLOGY

2.1 Research Approach

This study follows a bibliometric analysis approach to achieve research objectives (Ellili, 2022; Khan et al., 2022; Mumu et al., 2021). It is useful to identify, analyse, and organise the critical components of a specific research area to provide an overview by quantitatively structuring and mapping a larger set of research publications with multi-faceted titles using visualising software (Pritchard, 1969; Ramos-Rodríguez & Ruíz-Navarro, 2004; Van Eck & Waltman, 2010). Bibliometric reviews of the existing literature benefit academicians, practitioners, and policymakers in getting valuable insights into the existing knowledge of specific areas of interest (Qian & Sun, 2022; Siao et al., 2022; Zainuldin & Lui, 2022). It mainly focuses on assessing a particular field of knowledge to identify the status quo, providing trends/patterns and nexus for advancing the existing knowledge (Baker et al., 2020). There is a growing interest in studying not only CSR, CG and taxation as independent studies but also combined CSR-CG-Taxation studies because they are interrelated with each other (Landry et al., 2013; Lanis & Richardson, 2018; Shams et al., 2022; Wen et al., 2020). Even though prior bibliometric reviews examined specific aspects of corporate governance (Cucari, 2019; Das Mohapatra & Panda, 2022; de Klerk & Singh, 2021), CSR (Ohlan et al., 2022; Vázquez-Carrasco & López-Pérez, 2013), and taxation literature in isolation or with any two dimensions (Benlemlih et al., 2023; Bird & Davis-Nozemack, 2018; Hardeck et al., 2021), a review of the combined CSR-GC-Taxation research has not yet been undertaken. Therefore, this paper aims to perform a bibliometric analysis of interrelated CG-CSR-Taxation research to identify the conceptual structure, patterns of publications, trends, and future research postulates.

2.2 Database selection and search string development

The Scopus database (Elsevier) was selected for data collection. It is a widely used comprehensive scholarly database for bibliometric reviews with many journals and peer-reviewed articles (E-Vahdati et al., 2019; Ellili, 2022). Accordingly, a set of keywords was identified to search for articles relevant to the study (Mumu et al., 2021). A comprehensive

list of keywords was selected, referring to prior reviews and published scholarly articles on the study area for capturing all the relevant data for the review (Ellili, 2022; Khan, 2022; Siao et al., 2022). These keywords were combined using ‘AND’ and ‘OR’ connectors and performed a Title/Abstract/Keywords search to yield all the most relevant records (E-Vahdati et al., 2019; Ellili, 2022). The initial search query used for collecting CG, CSR and Taxation research was: (TITLE-ABS-KEY ((“corporate social responsibility” or “social responsibility” or “CSR” or “sustainability reporting” or “disclosure” or “ESG reporting” or “ESG disclosure”)) AND TITLE-ABS-KEY ((“corporate governance” or “CEO” or “internal control*” or “gender” or “audit committee” or “internal audit” or “political connection*” or “ownership structure” or stakeholder pressure” or “board”)) AND TITLE-ABS-KEY ((“tax plan*” or “tax manag*” or “tax*”))).

2.3 Data extraction and selection

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is the standard approach to reporting the data collection process for systematic reviews (Khan et al., 2022; Kumar et al., 2020). It guides researchers in identifying, screening, assessing eligibility and including articles for the final analysis. Hence, PRISMA guidelines (Figure 1) were adopted to support the process of article collection and perform an objective records selection (Ellili, 2022; Khan et al., 2022; Mumu et al., 2021). Accordingly, the initial database search yielded 287 records for combined CG-CSR-Taxation research. This search was refined at three stages based on year range, document type and language before extracting the final list of records. Accordingly, 265 records were obtained by limiting the initial search only to the papers published over the last 20 years, between 2004 and August 2023. Next, the search was limited only to peer-reviewed journal articles (198) and documents written in English, and 192 papers were found to be eligible for the final analysis. The 192 records were screened based on the abstract and keyword reading, and 127 articles irrelevant to the study were removed. Sixty-five relevant articles were assessed against the inclusion/exclusion criteria in the total reading. Any article that investigates different aspects of all CSR, CG and taxation in a single paper were included (inclusion criteria) for the final analysis and all the other articles that discuss either one or any two aspects, such as CG-CSR, CSR-Taxation and CG-Taxation, were excluded (exclusion criteria) from the study. Hence, 28 articles not meeting the inclusion criteria were removed from the total reading. Finally, 37 peer-reviewed articles that examined combined CSR-CG Taxation were selected for the bibliometric analysis.

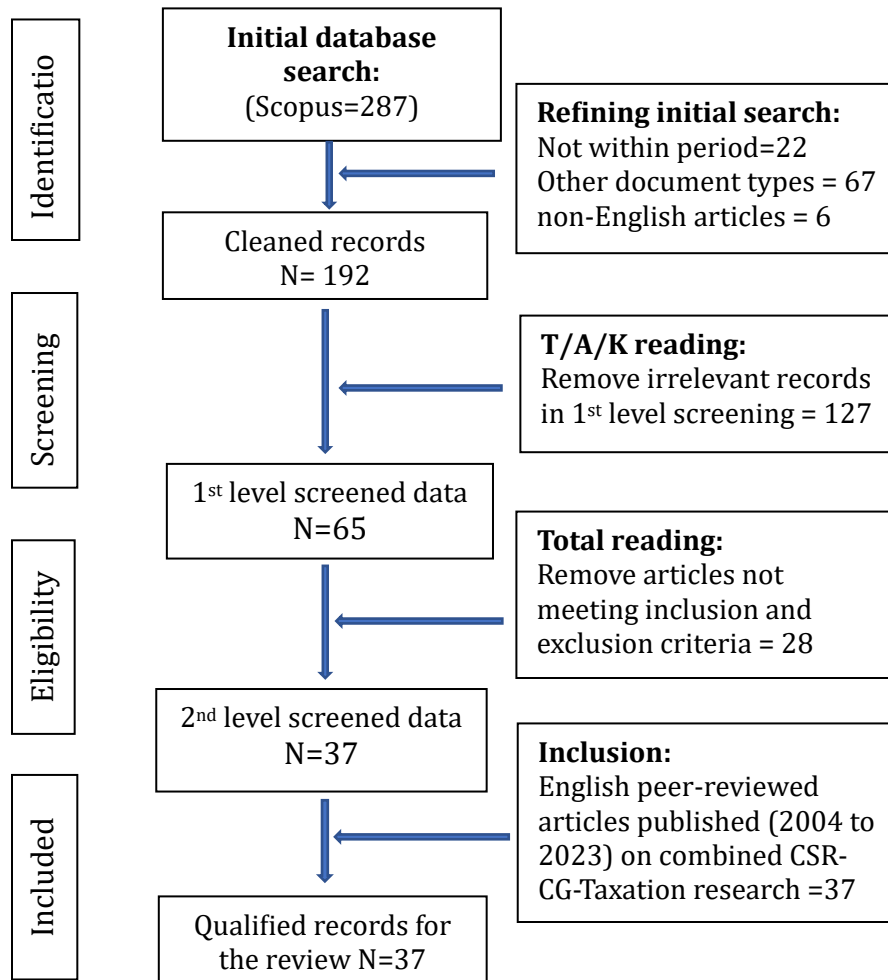


Figure 1: PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagram

Source: Author's creation, 2024

2.4 Data Analysis and Presentation

The eligible records selected for the final examination were analysed using Microsoft Excel (Ellili, 2022; Singhanian et al., 2022) and the VOSviewer software (Van Eck & Waltman, 2010). Excel was used to perform descriptive statistics for developing tables, graphs, and charts to identify trends and patterns of knowledge development, such as publication trends, influential authors, significant articles, and leading journals. Next, the VOSviewer software (Van Eck & Waltman, 2010) was used to identify and visualise interrelationships among keywords, dominant countries and author collaborations for intellectual mapping of prior literature to determine the conceptual structure among the publications, research gaps and future trends (Wan et al., 2023; Zainulidin & Lui, 2022).

3. RESULTS AND ANALYSIS

This section provides the bibliometric analysis results of 37 articles on the interrelationship among CG-CSR-Taxation practices over the last 20 years.

3.1 Publication Trends

The total number of combined CSR-CG-Taxation articles published during the last 20 years was 37 (Figure 1). Interestingly, the first article published in this area was reported in 2012 (Huseynov & Klamm, 2012). However, just after the publication of the paper titled ‘Tax Aggressiveness, Corporate Social Responsibility, and Ownership Structure’ in 2013 (Landry et al., 2013), no papers were reported until 2016. Notably, with the publication of the article titled ‘Tax Avoidance, Value Creation and CSR’ in 2017 (Kiesewetter & Manthey, 2017), the number of publications has gradually increased, and 2020 and 2022 were the years that reported the highest number of publications (10 articles each) in this area of interest during the study period. Notably, 90% of the articles were published during the last five years (2019-2023). The reasons for this boom can be the increasing global and scholarly attention on issues of CG relating to CSR practices, and the adoption of more tax avoidance and planning approaches. Furthermore, the significance of the intermediation of CG on tax and CSR-related decisions (Landry et al., 2013; Lanis & Richardson, 2018; Shams et al., 2022; Wen et al., 2020) and their impact on sustainability in the organisations and for responsible financing can also be critical factors in this regard.

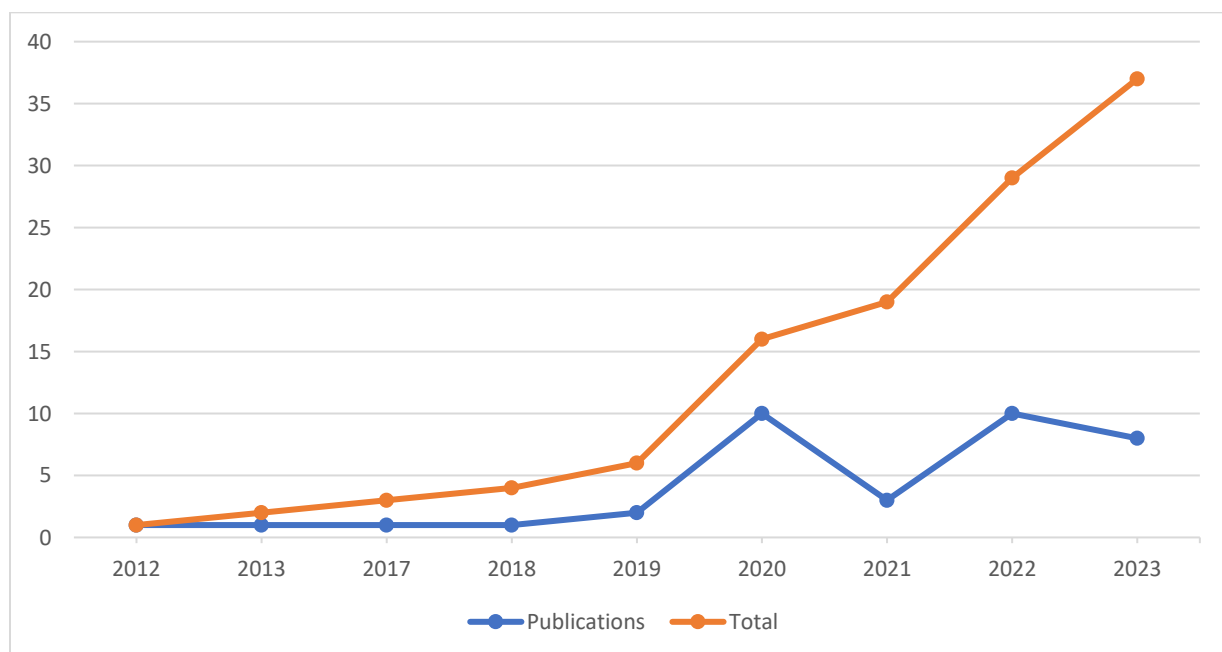


Figure 2: Distribution of publications over the years

Source: Author's creation, 2024

3.2 Journal distribution

A total of 37 papers under review have been published in 29 diverse journals, indicating that this area of study has just started to emerge (Table 1).

Table 1: Journal distribution and dominant journals

Journal	No of papers
Sustainability (Switzerland)	5
Journal of Corporate Finance	2
Journal of Governance and Regulation	2
Accounting and Business Research	2
Journal of Financial Crime	2
International Journal of Business	1
Journal of International Accounting, Auditing and Taxation	1
International Journal of Innovation, Creativity and Change	1
Systematic Reviews in Pharmacy	1
Corporate Governance (Bingley)	1
International Journal of Management	1
Social Responsibility Journal	1
Journal of Corporate Governance	1
Journal of International Accounting Research	1
Managerial Finance	1
Competitiveness Review	1
Journal of Accounting, Ethics and Public Policy	1
Cogent Economics and Finance	1
Journal of Contemporary Accounting and Economics	1
Investment Management and Financial Innovations	1
Journal of Engineering Science and Technology	1
International Journal of Professional Business Review	1
Scientific African	1
International Journal of Emerging Markets	1
Journal of Accounting in Emerging Economies	1
Asian Journal of Accounting Research	1
International Journal of Disclosure and Governance	1
Research in International Business and Finance	1
Corporate Social Responsibility and Environmental Management	1
Total	37

Source: Author's creation, 2024

Accordingly, Sustainability (Switzerland) is the dominant journal, having published five (5) papers, followed by the Journal of Corporate Finance (2), the Journal of Governance and Regulation (2), the Accounting and Business Research (2), and the Journal of Financial Crime (2). 24 remaining journals published one paper each, indicating that further research is needed to enhance the knowledge in this study area.

3.3 Leading authors and influential publications

3.3.1 Dominant authors

According to the author's details, 98 authors have contributed to publishing 37 articles in the study area. The average number of authors per paper is two. While two or more authors contributed to producing 31 articles, only six papers were identified as single-author papers. The total number of publications produced by each author is an effective approach to analysing the leading authors in the study area. However, except for two authors who contributed to two papers with multiple co-authors (Firmansyah & Estutik, 2020; Firmansyah & Triastie, 2020), all other authors have contributed one paper each to the field. According to the VOSviewer overlay co-author network, there is no significant collaboration among the academics who contribute to this area. Figure 3 further details the most recent authors depicted in light green and yellow nodes. Accordingly, the VOSviewer nodes indicate that most of the publications were new, and this area of research has just started to emerge (Figure 3).

3.3.2 Influential publications

In bibliometric studies, the most influential articles, authors, and journals can be identified based on their number of citations (Antwi et al., 2022; Aspiranti et al., 2023).

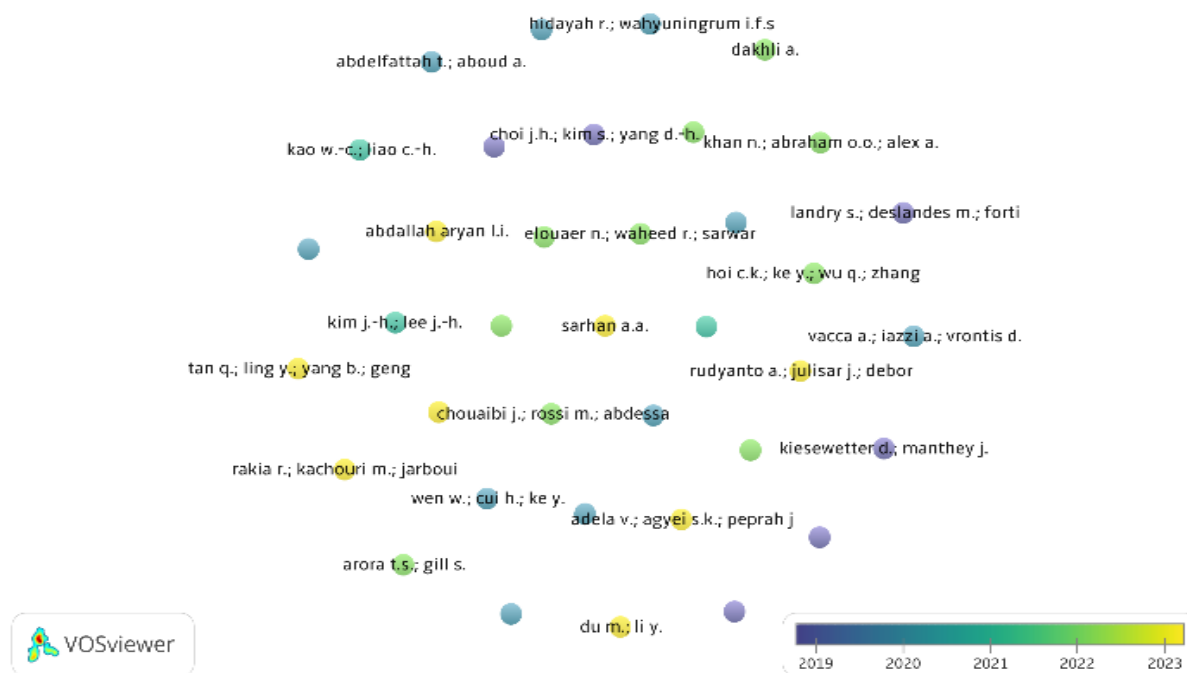


Figure 3: Overlay visualisation map of Authors.

Source: Author's creation using VOSviewer, 2024

The number of citations is determined based on the times a particular document has been cited (Ellili, 2023; Khamis & Aysan, 2022). Table 2 details the top ten most influential articles and respective authors in this study area. The number of citations for the selected papers ranged between 0 and 150. The most cited paper was titled ‘Tax Avoidance, Tax Management and Corporate Social Responsibility’ (Huseynov & Klamm, 2012), with 150 citations. The second most cited article was contributed by Wen et al. (2020), titled ‘Directors with Foreign Experience and Corporate Tax Avoidance’, which received 63 citations, followed by the article titled ‘Tax Aggressiveness, Corporate Social Responsibility, and Ownership Structure’ (Landry et al., 2013) which has 59 citations and was the third most cited paper. The remaining articles have fewer citations, indicating that this study area is evolving.

Figure 4 shows the density visualisation for the most cited documents. It also indicates that the article produced by Huseynov and Klamm (2012) was the highly cited paper, followed by the articles contributed by Wen et al. (2020), Landry et al. (2013), Abdelfattah and Aboud (2020) and Lanis and Richardson (2018) respectively.

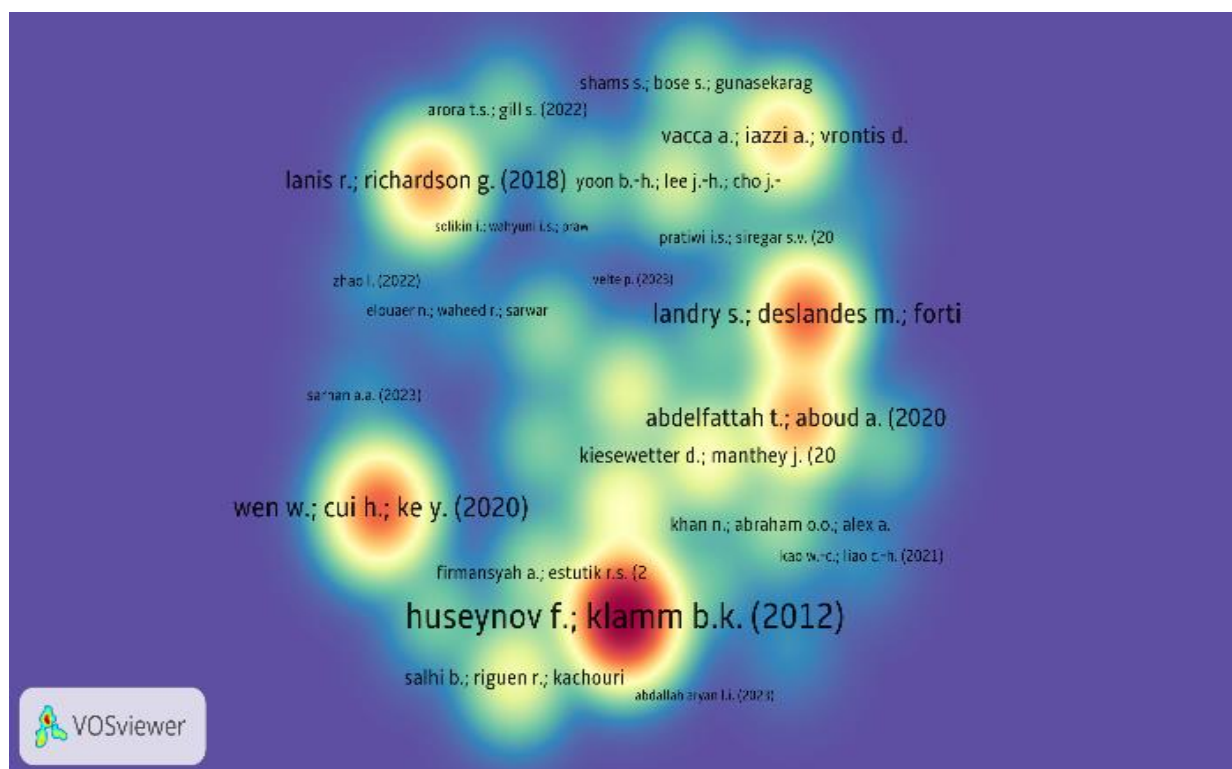


Figure 4: Density visualisation of most cited documents

Source: Author's creation using VOSviewer, 2024

Table 2: Top 10 most influential articles

Authors	Title	Citation
Huseynov and Klamm (2012)	Tax avoidance, tax management and corporate social responsibility	150

Wen et al. (2020)	Directors with foreign experience and corporate tax avoidance	63
Landry et al. (2013)	Tax aggressiveness, corporate social responsibility, and ownership structure	58
Abdelfattah and Aboud (2020)	Tax avoidance, corporate governance, and corporate social responsibility: The case of the Egyptian capital market	42
Lanis and Richardson (2018)	Outside directors, corporate social responsibility performance, and corporate tax aggressiveness: An empirical analysis	41
Vacca et al. (2020)	The role of gender diversity on tax aggressiveness and corporate social responsibility: Evidence from Italian listed companies	31
Jarboui et al. (2020)	Tax avoidance: do board gender diversity and sustainability performance make a difference?	18
Kiesewetter and Manthey (2017)	Tax avoidance, value creation and CSR – a European perspective	18
Salhi et al. (2020)	The mediating role of corporate social responsibility on the relationship between governance and tax avoidance: UK common law versus French civil law	15
Kholis et al. (2020)	Determining factors for disclosure of sustainability reporting with inclusive stakeholder models in Indonesia public company issuer	12

Source: Author's creation, 2024

3.4 Top 10 Leading Contributory Countries

Figure 5 shows the overlay map contribution from different countries to the area of combined CSR-CG-Taxation research. As such, the 37 papers under investigation have been contributed by authors from 20 countries (Figure 5). The combined CG-CSR-Taxation research has become an evolving area of interest for both emerging and developed countries. Notably, more than 55% of the countries in the sample have contributed to two or more papers (from 2 up to 9), indicating the popularity of scholarly attention in this area. The

leading ten-country collaborations are given in Table 3. Surprisingly, Indonesia is the main contributor to the study area, with nine papers, followed by Tunisia (5). The United States and China have contributed four documents each. South Korea is the fifth leading country that contributed to 3 papers.

While the United States, Cyprus, and Germany were the early contributors to the field, both developing and developed countries have recently started contributing to this area of interest, including Pakistan, Nigeria, China, Jordan, India, Ghana, Hong Kong, and France (Figure 5). These results revealed crucial insights about the significance of this area under investigation among both emerging and developed countries.

Table 3: Top 10 dominant country contributors

Rank	Country Collaboration	No of papers
1	Indonesia	9
2	Tunisia	5
3	China	4
4	United states	4
5	South Korea	3
6	Germany	2
7	Italy	2
8	UK	2
9	Australia	2
10	Egypt	2

Source: Author's Creation, 2024

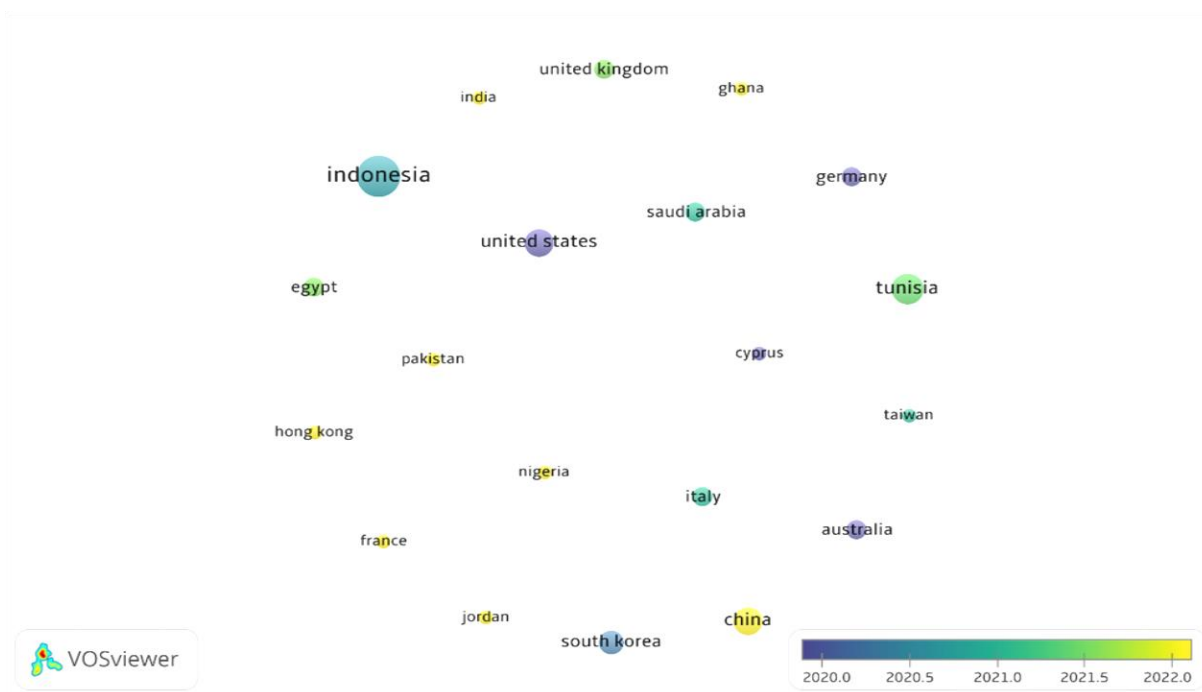


Figure 5: Overlay visualisation map of leading countries

Source: Author's creation using VOSviewer, 2024

3.5 Keyword analysis and mapping knowledge structure

The co-occurrence analysis maps the knowledge structure and identifies key research strands within the papers (Khan, 2022; Kumar et al., 2022; Kumar et al., 2020). Importantly, it helps to identify the most significant keywords, interlinks among each keyword and the main keyword clusters/themes within the study area (Ellili, 2022; Najaf et al., 2022). This analysis was conducted based on ‘Author keywords’.

Table 4: Keywords for the top ten clusters

Cluster	Colour	Keywords
1	Red	book tax difference, chaebol, CSR, dividend payout, dividend tax, donations, ESG, management perk, overinvestment, tax, political connections
2	Green	CEO duality, CEO experience, corporate tax avoidance, director reputation, educational experience, imprinting theory, feminine, labour market for directors, news and media coverage, social norms
3	Blue	Covid-19, CSR activities, financial constraints, foreign activity, political connection, Ghana, generalised method of moments
4	Dark Yellow	Audit committee, audit quality, corporate social responsibility, good corporate governance, independent commissioners, pharmaceutical industry
5	Purple	Corporate social responsibility, family and non-family firms, gender diversity, listed firms of Jordan, reputation, tax aggression
6	Light Blue	Corporate social responsibility, corporate governance, Egypt, family firms, tax management, women directors
7	Orange	Agency problem, empire building, firm valuation, tax avoidance, tax disclose
8	Brown	Directors with foreign experience, political motive, reputational cost, tax enforcement, corporate philanthropy

9	Light Orange	Corporate sustainability, stakeholder agency theory, sustainable corporate governance, sustainable institutions
10	Light Purple	Outside directors, India, firm value, corporate tax aggressiveness

Source: Author's creation based on VOSviewer co-occurrence analysis, 2024

Based on the VOSviewer network analysis, 102 keywords are depicted in 22 clusters (Figure 6). The number of keywords for visualised clusters ranges from 11 to 2. The clusters with the most keywords have appeared in Red (11), followed by Green (10), Blue (8), Dark yellow (7) and Purple (6). According to co-occurrence network analysis (Figure 6), CSR, CG and Tax avoidance are the most frequently used keywords. While CG, CSR and tax avoidance have a strong link with the highest keyword frequencies, the connection between CSR and tax avoidance is the strongest within the papers under review. Notably, most of the clusters have an apparent connection with specific attributes of CG, CSR, and taxation. Although CSR, CG and tax avoidance are dominant keywords, prior scholars have used other similar keywords to represent each main key theme. The top 10 clusters with highly appearing different and similar keywords, and their occurrences are shown in Table 4.

Table 5: The key themes for the primary 10 clusters with related publications

Cluster	Key theme	No	Authors
1	CSR on tax avoidance with political connections for earnings management	4	Choi et al. (2019), Pratiwi and Siregar (2019), Yoon et al. (2021), Hoi et al. (2022)
2	Linkage of board member characteristics with tax avoidance for responsible corporate behaviour	3	Kim and Lee (2021), Kao and Liao (2021), Tan et al. (2023)
3	Political connections in financial management for responsible corporate behaviour	3	Silvera et al. (2022), Adela et al. (2023), Rudyanto et al. (2023)
4	CG and assurance on tax avoidance and CSR reporting	2	Istianingsih, (2020), Solikin et al. (2022)
5	CG and gender diversity in tax avoidance for responsible corporate practices	5	Landry et al. (2013), Jarboui et al. (2020), Vacca et al. (2020) Abdallah Aryan (2023), Elouaer et al. (2022)

6	CG and women in socially responsible actions for tax management	4	Huseynov and Klamm (2012), Abdelfattah and Aboud (2020), Shams et al. (2022), Rakia et al. (2023)
7	Good governance for value creation	1	Kiesewetter and Manthey (2017)
8	Political connection in responsible firm behaviour and tax compliance	2	Wen et al. (2020), Zhao (2022)
9	Sustainable governance in corporate sustainability	1	Velte (2023)
10	External governance of internal responsibility for tax aggressiveness	2	Lanis and Richardson (2018), Arora and Gill (2022)

Source: Author's creation, 2024

Key research themes can be discovered based on each cluster's keywords, as depicted in Figure 6 and Table 4. Despite the studies on the development of interrelated CSR-CG-Taxation research, scholars have discussed diverse themes within the broader CG, CSR, and taxation research. The key themes for the primary 10 clusters with related publications are given in Table 5. Despite these themes mainly discussing responsible corporate behaviour with firm value, earnings management, sustainability, sustainable development, social well-being or corporate sustainability performance, they mainly examined the impact of CG on the taxation and CSR interplay with minimal consideration of the impact of CSR on CG and taxation interplay.

The identified clusters and themes are critical as they captured nearly 75% of the papers under review. According to the key themes of the prior studies, most of the papers have examined the impact of different CG attributes, such as political connections, gender diversity, CEO characteristics, director experience, director reputation, outside directors, foreign directors, women directors, and auditing function, on CSR and tax avoidance or tax management (Abdelfattah & Aboud, 2020; Hidayah et al., 2020; Jarboui et al., 2020; Kim & Lee, 2021; Landry et al., 2013). The rest of the papers have examined the impact of CSR on CG and tax avoidance (Kholis et al., 2020; Salhi et al., 2020). These studies mainly centred around key themes such as responsible corporate behaviour regarding tax management, tax avoidance, value creation, social well-being or internally responsible practices (Table 5).

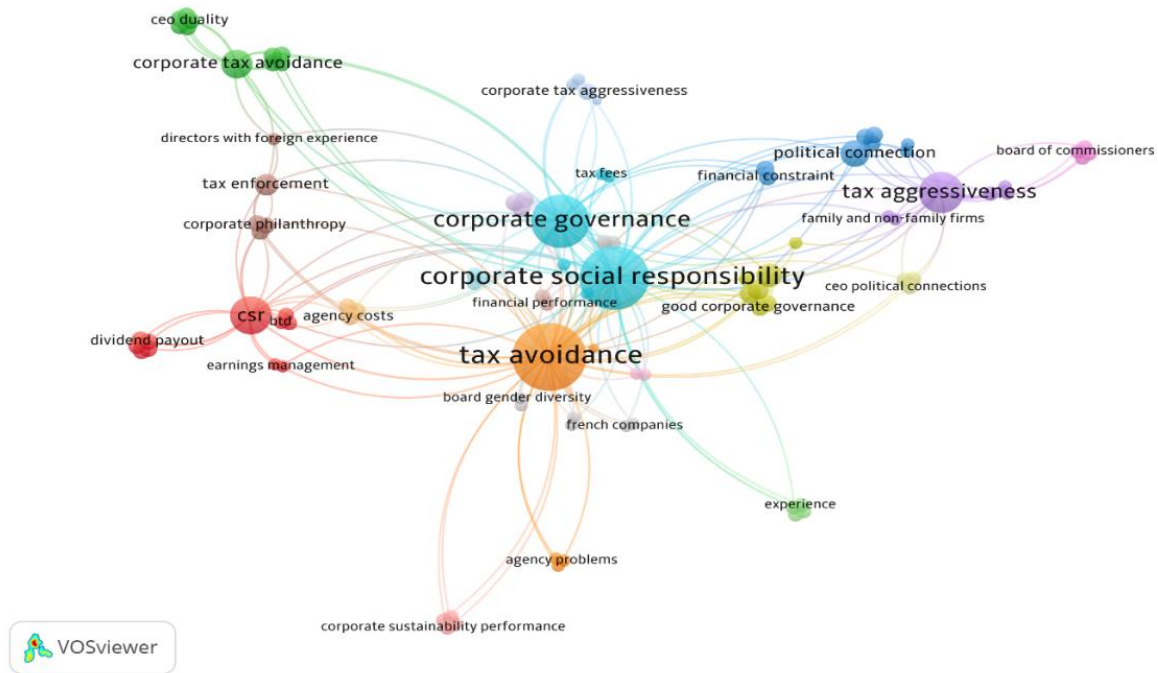


Figure 6: Co-occurrence network map

Source: Author's creation based on VOSviewer, 2024

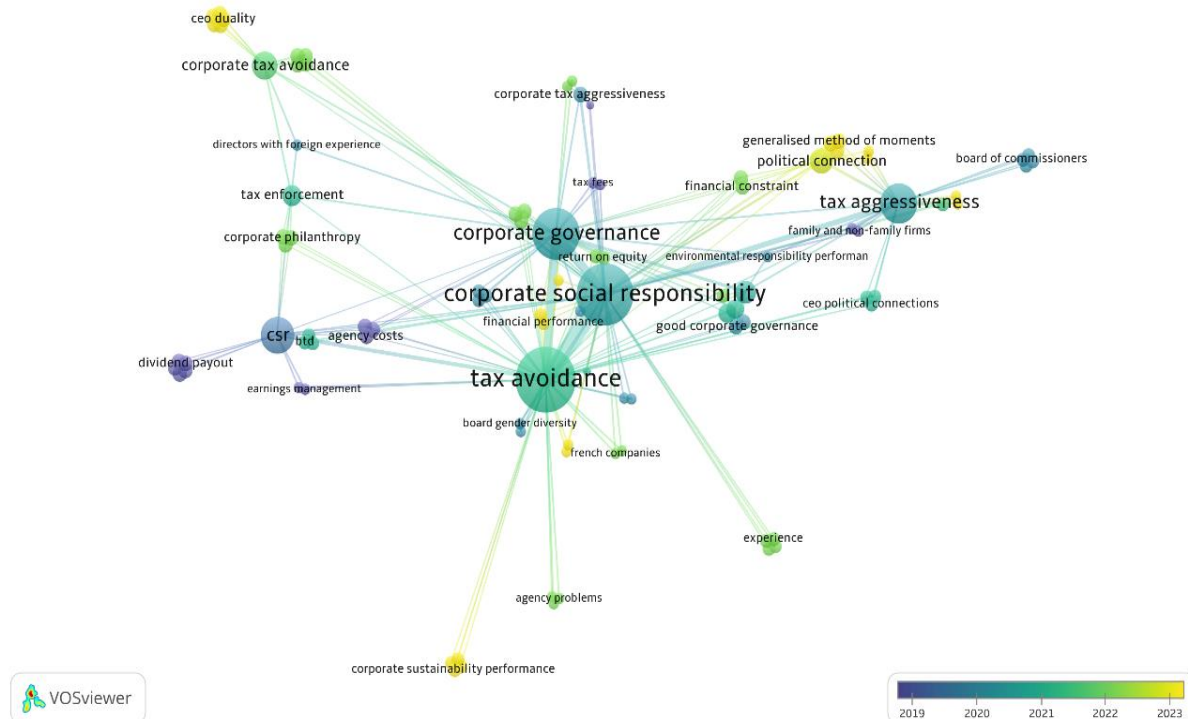


Figure 7: Overly network of keyword co-occurrence with emerging themes

Source: Author's creation using VOSviewer, 2024

3.6 Emerging topics in CG, CSR, and taxation research

Overly co-occurrence analysis is used to identify the emerging key topics within the study area based on colour and frequency of occurrence (Figure 7). The evolving topics are in yellow and light green, and the prior research topics are in blue and dark green (Wan et al., 2023). The CG, CSR and tax avoidance are the main topics that have a stronger association with each other and with other external and internal organisational factors (Landry et al., 2013; Lanis & Richardson, 2018; Rudyanto et al., 2023; Silvera et al., 2022; Tan et al., 2023).

Among all topics, CEO duality (Tan et al., 2023), political connections (Rudyanto et al., 2023; Zhao, 2022), gender (Abdallah Aryan, 2023; Rakia et al., 2023), director experience (Tan et al., 2023), CEO political connections (Kim & Lee, 2021), good corporate governance (Stianingsih, 2020), and agency problems (Velte, 2023), are emerging topics discussed relating to CG. From the taxation perspective, corporate tax avoidance (Tan et al., 2023), tax avoidance (Du & Li, 2023; Rakia et al., 2023; Sarhan, 2023; Zhao, 2022), corporate tax aggressiveness (Rudyanto et al., 2023) and tax enforcement are the recent key topics. CSR has mainly been identified as ESG (Yoon et al., 2021), CSR disclosure (Hidayah et al., 2020), sustainability reporting disclosure (Kholis et al., 2020), corporate philanthropy (Zhao, 2022) and corporate social responsibility (Sarhan, 2023) within all past and emerging studies. More specifically, CG-CSR-Taxation research has been linked with several other performance effects, such as financial planning (Du & Li, 2023), stakeholder value creation, financial performance, and environmental responsibility performance (Firmansyah & Estutik, 2020), firm valuation (Silvera et al., 2022), and corporate sustainability performance (Jarbouei et al., 2020; Velte, 2023) as recently examined organisational factors.

5. DISCUSSION, RESEARCH GAPS, AND FUTURE AVENUES

This bibliometric study analyses patterns and developments of prior literature on interrelated CSR-CG-Taxation research to answer the key research questions. The bibliographic analysis results indicate that the research on CSR-CG-Taxation interplay is a fresh and popular area with a shorter history of a decade from its first appearance in 2012 (Hidayah et al., 2020). Although the total number of papers is limited, the trend of scholarly attraction to the combined CG-CSR-Taxation research interrelationship has surprisingly increased, with over 90% of the papers published during the last five years (Figure 2). Although over 80% of the papers were multi-co-authored, strong collaboration among the current authors was unnoticed (Figure 3).

Although both developed and developing countries have contributed to the development of this area with various findings, just over 50% of countries contributed only a single study each into the study area (Figure 5). Notably, the CG-CSR-Taxation relation is a matter of emerging scholarly concern not only in developed countries but also in developing countries. However, the empirical findings of both developed and developing countries are

minimal (Figure 5). Hence, future scholarly attention to more empirical studies from various countries and sectors could extend the current understanding in this area of interest. The prior papers in CG-CSR-Taxation have been published in a broader range of specific and multidisciplinary journals (29), reflecting that this area still appears (Table 1). The citation density map (Figure 4) shows influential authors, and Table 2 provides details on influential publications. However, the number of citations per publication is relatively lower for the papers under review. While the scholarly attention on this area of study is recent, there were no strong relationships among authors and countries. Consequently, the findings call for more collaborative papers from these locations and other countries that have not yet been represented.

The keyword analysis shows the knowledge structure of the study area (Figure 6). CG, CSR, and tax avoidance are the common themes within the selected articles (Table 4). The network map yielded 22 clusters with 102 author keywords (Figure 6). Ten main themes that captured 75% of the articles were observed (Table 5). These key themes comprise many studies on the interplay between CG attributes that intermediate CSR and tax avoidance/aggression, with limited attention on the impact of CSR attributes on CG and tax avoidance/aggression interplay.

The Overlay keywords map depicts emerging topics of scholarly interest (Figure 7). They included CEO duality (Tan et al., 2023), political connections (Rudyanto et al., 2023; Zhao, 2022), gender (Abdallah Aryan, 2023; Rakia et al., 2023), director experience (Tan et al., 2023), CEO political connections (Kim & Lee, 2021), good corporate governance (Stianingsih, 2020), and agency problems (Velte, 2023), corporate tax avoidance (Tan et al., 2023), tax avoidance (Du & Li, 2023; Rakia et al., 2023; Sarhan, 2023; Zhao, 2022), corporate tax aggressiveness (Rudyanto et al., 2023), tax enforcement, ESG (Yoon et al., 2021), CSR disclosure (Hidayah et al., 2020), sustainability reporting disclosure (Kholis et al., 2020), corporate philanthropy (Zhao, 2022) and corporate social responsibility (Sarhan, 2023) as vital topics in each aspect of CG, CSR, and taxation domains. Hence, future studies can explore many other CG, CSR, and taxation attributes that have not been investigated or have been minimally investigated within the prior studies.

While this paper answers all questions, the analysis results indicate that the research on CG-CSR and taxation interplay is just beginning, and several gaps in this area of interest have been identified. Specifically, study findings revealed that more research is needed in this area for a deeper and more comprehensive understanding of the multifaceted interrelationships among combined CG-CSR and taxation. Theoretically, CG is responsible for balancing shareholder and stakeholder expectations, whereas CSR and taxation focus on ensuring balanced social and economic development (Abdelfattah & Aboud, 2020). Irresponsible corporate behaviour can lead to substantial adverse long-term impacts on society and the economy (Lanis & Richardson, 2018). However, the prior findings regarding the behaviour of CG are not yet conclusive in addressing the theoretical aims of CSR and tax management (Landry et al., 2013; Lanis & Richardson, 2018; Shams et al., 2022; Wen et al.,

2020). Moreover, it needs to be more evident whether and how CG promotes CSR and tax compliance or invests in CSR to compensate for tax avoidance, aggression, or managing taxes in the contemporary business context. Additionally, there are ample research gaps in the areas of whether and how the different attributes of CG show involvement regarding CSR and tax compliance from different locations, depending on different contextual factors. Therefore, further research can continue to understand how these CG attributes influence CSR practices, both legal and illegal planning, and meet the interests of broader stakeholder groups from the perspectives of neglected and minimally studied attributes.

Moreover, few studies have examined how CSR practices can influence CG attributes and taxation. While CSR is a socially responsible practice undertaken by the business organisation, it also involves a cost. However, the higher CSR involving companies have made some impact on CG and taxation in both positive and negative ways. For instance, while higher CSR companies pay a fair share of taxes, with solid support from the CG structure, some companies use higher CSR as compensation for aggressive tax avoidance. Hence, the impact of CSR on GC and taxation in isolation and combined with legal and illegal tax planning (and management/compliance) has not been well addressed in prior studies.

On the other hand, the impact of taxation on CSR and CG has not yet been investigated in prior research. However, it is one key strand that can be explored to extend this area further. In particular, the impact of legal and illegal tax attributes such as tax avoidance, tax havens, tax aggression, tax planning, tax management, tax compliance or tax administration on CSR and CG attributes is found to be a novel area of investigation to extend this area of research. Hence, exploring the tri-directional relationships among GC-CSR and taxation is crucial for more in-depth analysis and discussion within various sectors in different geographical locations. Adding to this, investigating CSR-CG-taxation relating to frauds, financial crimes, compliance, sustainability assurance, forensic accounting, auditing, earnings management, stakeholder management, ESG, organisational decision-making and controls can further advance this area for a more comprehensive understanding of the function of CSR-CG-Taxation in diverse business contexts. This understanding can further be extended by examining combined CSR-CG-Taxation with or without considering contextual factors such as organisational and national culture, legal requirements, local and national governance structures, and other social and economic factors based on different contexts.

5. CONCLUSION AND IMPLICATIONS

This paper provides a bibliometric analysis of the articles that examined the combined CG-CSR-Taxation literature published in the Scopus database over 20 years. Due to its timely importance, the paper aims to identify the knowledge developments, patterns, and intellectual structure within combined CSR-GC-Taxation research. Only the published peer-reviewed journal articles written in English were selected for the analysis. Accordingly, 37 articles that examined concepts related to CSR, CG, and taxation were selected and analysed

using Microsoft Excel (Ellili, 2022; Singhanian et al., 2022) and VOSviewer visualisation software (Van Eck & Waltman, 2010). The analysis was conducted in terms of influential authors and articles, leading countries and journals and past and recent themes using a bibliometric analysis approach to answer the research questions (Ellili, 2022; Khan et al., 2022; Mumu et al., 2021).

Surprisingly, 31 papers under review were contributed by multiple authors, with only six single-author papers. Except for two authors who contributed two papers, all others contributed one paper each to the study area. While Sustainability (Switzerland) is the dominant journal, the Journal of Corporate Finance, Journal of Governance and Regulation, Accounting and Business Research, and Journal of Financial Crime are dominant journals publishing in this area. Considering the contributory locations, Indonesia is the leading, followed by the United States, China, Tunisia, and the UK. Huseynov and Klamm (2012) were the most influential authors, followed by Wen et al. (2020), Landry et al. (2013), Abdelfattah and Aboud (2020) and Lanis and Richardson (2018) based on the number of citations for their single paper contributions. Notably, the collaboration among authors, articles, and journals within the papers under review is significantly limited. In sum, all these findings conclude that the research on CG-CSR-Taxation interplay has started recently and is gaining increased scholarly attention.

Co-occurrence cluster analysis yielded 22 keyword clusters within the area of interest. Ten main themes were identified based on main clusters, indicating that the themes are well represented in most articles under review. The main key themes are centred around the impact of CG attributes on the interplay between CSR and tax avoidance, with minimal attention on the impact of CSR on tax avoidance and CG attributes. Although the area of study is emerging, the key themes discussed in the prior studies are relatively comprehensive in addressing critical issues in this field. Notably, the overlay cluster analysis depicts the overlay co-occurrence map. Consequently, several emerging topics were identified under taxation, CSR, CG, and performance initiatives for providing insights into the latest developments and key themes examined in this area.

Nevertheless, the CSR-CG-Taxation relation is a critical aspect to consider in everyday business operations, decision-making and long-term corporate sustainability; the research on the interrelationship in this area is new. Although CG, CSR and taxation are identified as factors determining corporate responsible behaviour, shareholder value and economic development, research findings on combined GC, CSR, and taxation are diverse. Hence, undertaking further research in this novel area is timely. The keyword analysis revealed interesting knowledge patterns within the papers under review. As per the analysis, the impact of CG and CSR has been examined for managing taxes in terms of avoidance and tax aggression, whereas the impact of CSR has been examined in managing CG and Taxation. Hence, two strands of themes were identified. The first strand focuses on the impact of CG on CSR and taxation. Some countries consider CSR mandatory, whereas others consider it a voluntary requirement. While some businesses in some contexts have strong corporate

governance structures, others, such as small and medium companies, have relatively less intense governance structures. Nevertheless, taxes are mandatory everywhere. Hence, the involvement of CG in CSR, paying a fair share of taxes and complying with tax regulations can significantly vary among organisations (in countries/sectors) depending on CSR and CG attributes or contextual factors. This relationship can be further extended by analysing the impact of different aspects of CG on managing taxes and CSR practices. While CSR and taxation are aimed towards social well-being, existing literature still identifies more tax aggressiveness and tax avoidance with increased CSR practices.

The second strand slightly investigated the impact of CSR on CG and Taxation attributes. While higher CSR indicates strong CG performance and higher tax compliance, it also indicates weaker involvement of CG and aggressive tax avoidance/evasion. Hence, exploring the impact of CSR on CG and taxation attributes is vital for understanding and ensuring sustainability in businesses as well as society. Interestingly, none of the studies has examined the impact of taxation on CSR and CG, which is a fantastic area of research. This strand of research also helps to comprehensively examine the behaviours of CG and CSR in the context of higher or lower tax compliance or illegal and legal tax planning (e.g: compliance, avoidance, evasion, havens). Moreover, research on CSR-CG-Taxation interplay can be further extended by examining these attributes relating to other related aspects such as financial crimes, forensic accounting, frauds, compliance, sustainability assurance, auditing, and internal controls and reporting aspects, with or without considering contextual factors.

The findings of this research are significant and have several implications for diverse stakeholders. First, it provides an overview of the current knowledge regarding influential articles, authors, countries, and the patterns of publications in the study area for interested parties, including academicians, practitioners, states, policymakers, and the public. Second, it helps to identify the key themes discussed during the past decade that are critical to understanding the prior research. Next, it reveals the emerging themes, research gaps and directions for further research to advance the field of research. Finally, this review of CG-CSR-Taxation research provides significant insights into corporate socially responsible behaviour regarding corporate governance, CSR, and taxation practices critical for long-term development. Hence, exploring different facets of combined CG, CSR and taxation from both developing and developed countries is vital for making policies and guidelines to ensure corporate futures while assuring the well-being of society.

Although this bibliometric analysis provides a comprehensive overview of the interplay of CG-CSR-Taxation research trends and patterns, it has some limitations. Data for the study were collected in the form of peer-reviewed journal articles only from the Scopus database. Hence, the analysis disregards the other research databases and data forms, such as conference papers, books, and book chapters, to derive this conclusion. Moreover, this analysis mainly focuses on providing a bibliometric mapping of intellectual structure and proposing emerging areas for further research. Accordingly, an in-depth review of the

literature was not undertaken. Although the recent themes were proposed as emerging themes, the prior papers have also been examined in minimal empirical studies. Therefore, the bibliometric analysis overlooked the prior papers and keywords when determining the emerging themes. Consequently, future scholars can address these limitations and contribute to advancing the current understanding by performing an in-depth literature review to provide a more detailed and critical analysis of the contents of published articles in this area of interest.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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Article

Performance of Microfinance Institutions in Afghanistan: A Descriptive Analysis

M.T. Nabizade^{1*} and N. Dhanda²

¹Department of Commerce, Kurukshetra University, Haryana, India

²Department of Commerce, Kurukshetra University, Haryana, India

Abstract: Microfinance has been widely used in Afghanistan as a means of combating poverty and promoting revenue growth in the last few years. However, because of the unprecedented COVID-19 epidemic and the fall of governments, microfinance institutions have faced considerable challenges in the last several years. This study examines the performance of microfinance institutions (MFIs) in Afghanistan to identify trends in their outreach and financial performance. The study employs a quantitative research technique using secondary data gathered from yearly reports of targeted MFIs, publications, and databases. In addition to obstacles such as the COVID-19 epidemic and the government's collapse, the First Microfinance Bank and FINCA Microfinance have experienced a decrease in borrowers as a result of financial uncertainty, MUTAHID Microfinance has observed changes driven by the market, and OXUS Microfinance Institution is modifying the number of borrowers depending on demand. Compared to OXUS's aggressive growth initiatives, FMFB and FINCA's conservative methods are shown by the study of loan disbursements. Regardless of these differences, all of the chosen MFIs were consistently present in each province.

Keywords: Afghanistan, Financial Performance, Microfinance, MFIs, MISFA.

*Corresponding Author: t.nabizada2019@gmail.com



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1. INTRODUCTION

1.1 Microfinance Institutions in Afghanistan

The prominence and influence of Afghanistan's microfinance institutions (MFIs) have increased during the past two decades. In Afghanistan, microfinance organisations have been

essential to attempts to reduce poverty and improve rural areas. With multiple institutions offering financial services to countless families, the microfinance industry has seen substantial expansion during the last 20 years. Microfinance has been shown to have favourable effects on employment and income, but its implications for women's empowerment and the reduction of poverty are more challenging (Hemat, 2024). The microfinance sector made tremendous strides forward with the 2003 launch of the Microfinance Investment Support Facility for Afghanistan (MISFA) organisation. MISFA seeks to reduce poverty, promote financial independence, and provide relief by directing and overseeing microfinance institutions (MFIs) in Afghanistan. MISFA is an initiative that seeks to consolidate and reorganise different donor funds into organised and adaptable aid; its principal recipients are Afghanistan's MFIs (Sultani & Chandrashekhar, 2023).

The Afghanistan Microfinance Association (AMA) is the country's national network of development finance institutions (DFIs). It was founded in 2005 by MISFA, microfinance specialists, and other participants, and in 2007, AMA was approved by Afghanistan's Ministry of Justice (AMA, 2023). The banking and non-banking financial sectors make up Afghanistan's financial system. Afghanistan's financial organisations, such as the Central Bank of Afghanistan (DAB), are faced with four major obstacles: a lack of an up-to-date legal and regulatory framework for banking operations; inexperienced executives and technical employees; the absence of any banking operating systems; and weak payments made through communication networks. These limitations severely limit the formal financial sector's capacity to offer the general public, non-governmental organisations, businesses, cross-border and multilateral organisations, and governmental institutions efficient and dependable financial services, particularly both local and global systems of payment (Şahin & Humta, 2023).

As of December 2019, there are a total of nine microfinance institutions operating in Afghanistan, with a total loan portfolio of 9,607,678,446 AFN, and these financial institutions have about 423,357 clients, 150,509 active borrowers, with about 37% of them being women, and 2,670 staff members who have offices throughout the country (Sultani, 2021). These MFIs have played an important role in delivering financial services to marginalised groups, with a particular emphasis on female financial independence and financial inclusion. However, the COVID-19 epidemic has had a tremendous effect on Afghanistan's private educational institutions and MFIs, resulting in financial losses and interruptions to educational activities. Despite these hurdles, the financial success of microfinance institutions is determined by a variety of variables, such as interest rates, institutional features, and market length (Ibrahim et al., 2018).

This study explores the issues and challenges faced by MFIs in Afghanistan to illuminate trends in their outreach and financial performance. The study exclusively investigates four microfinance organisations operating in Afghanistan. A considerable proportion of the microfinance industry in Afghanistan was comprised of these institutions, which were chosen by predetermined standards. The selection of four MFIs was motivated

by the need to assess multiple measures of MFI performance and to ensure alignment with the study objectives. The following institutions have been tagged, namely: The First Microfinance Bank (FMFB), Foundation for International Community Assistance (FINCA), MUTAHID Development Finance Institution, and OXUS-Afghanistan.

Given the need to conduct an in-depth examination of the microfinance operations that operate in Afghanistan, it turned out that these MFIs were chosen on the basis of their relevance within the microfinance industry and their ability to offer valuable insights into the performance indicators that were opted for. The wide range of these organisations with respect to dimensions, distribution area, and previous performance makes it possible to conduct such an investigation. Table 1 presents a review of the four companies.

Table 1: Selected Institutions of Microfinance

No	Institutions	Sector	Year of Establishment	Active Clients (2022-23)	GLP – AFN (2022-23)
1	FMFB	Bank	2003	18,083	763,783,387
2	FINCA	MFI	2004	234,405	4,055,277,608
3	Oxus Afghanistan	MFI	2007	16,919	886,086,929
4	MUTAHID	MFI	2011	11,761	390,602,736

Source: (MISFA, 2021-2022)

First Microfinance Bank-Afghanistan: As a part of the Aga Khan Agency for Microfinance (AKAM), which encompasses financial institutions in over fifteen developing nations, the First Microfinance Bank-Afghanistan (FMFB-A) began operations in 2004. In terms of gross loan portfolio (GLP) size, FMFB-A is the market leader with around AFN 4 billion in loans outstanding as of December 2021. There are a total of 234,405 active clients at the bank, including borrowers and depositors (AMA, 2023).

Foundation for International Community Assistance (FINCA)—Afghanistan: FINCA started conducting operations in Afghanistan in 2003, with a focus on supporting women and resettling refugees. FINCA helps those who lack access to funding. FINCA-Afghanistan, followed by MISFA and ARIES, a project supported by USAID with the assistance of FINCA International (its US-based parent firm). A comprehensive range of credit products, including individual and solidarity group loans, is available from FINCA Afghanistan Microfinance Investment Support Facility for Afghanistan, n.d).

Oxus-Afghanistan: Through the assistance of MISFA funds, OXUS launched a microcredit program in Afghanistan in 2007. Currently holding the third-place spot in terms of microfinance portfolio, OXUS Afghanistan has 13 branches operating around the nation. In order to promote the growth of the portfolio, MISFA and OXUS-Afghanistan inked a financial agreement in 2017. This agreement guarantees significant funding for OXUS operations in Afghanistan, both current and future (Sultani & Chandrashekhar, 2023).

MUTAHID Development Finance Institution: The Ministry of Commerce has officially recognized MUTAHID DFI as an independent, completely independent institution

that is entitled to use interest income to pay for operating expenses. MUTAHID DFI was created by MISFA in April 2011 by merging six different MFIs, which included MOFAD, MADRAC, PARWAZ, ARIANA, CHF, and WWI.

2. LITERATURE REVIEW

2.1 Challenges Impacting Microfinance Institutions

Several challenges affect the way MFIs operate and their effectiveness. In Tanzania, some of the problems that hinder group lending models include a lack of trust, group dynamics, and operational complexities, leading to conflicts and imbalanced participation (Magambo, 2024). Likewise, governance challenges are also encountered in Bangladesh as it attempts to reconcile between reducing poverty and ensuring that microfinance institutions in the country are on a financially sustainable footing through strategic improvements that would increase MFI performance (Uddin et al., 2024). MFIs' sustainability in China is influenced by factors including operating technology, the external environment, and financial conditions that are critical for economic performance, but less so for operational sustainability (Li et al., 2023). Furthermore, macro- and micro-challenges, including legal barriers and high transaction costs, restrict access to microfinance for the rural population in India (Das, 2023). Sultani & Chandrashekhar (2023) mainly aimed to provide clarity regarding the difficulties faced by MFIs in Afghanistan. Although this issue set was described using a descriptive and principal component analysis approach, research on this topic yielded nine distinct components. Lots of problems plague microfinance organizations besides this difficulty with technology, inadequate government support, a lack of administrative and skilled staff, and the rise of harmful rivalry across various MFIs are the main challenges.

2.2 The Influence of Exterior Shocks on Microfinance Institutions

External variables, like as regulatory concerns, had a major impact on loan defaults inside MFIs, outweighing other factors such as financial infection and recessions, which were shown to be statistically minimal in a Cameroonian situation (Fotabong, 2016). MFIs in Uganda demonstrate resistance in the face of major shocks such as conflicts and natural catastrophes, suggesting their importance in economic wellness; however, their financial structure remains crucial for stability (Sekabira, 2013). Furthermore, in Pakistan, tactical failures by borrowers were worsened by insufficient enforcement measures, especially amid correlated shocks such as the 2005 earthquake, underscoring MFIs' sensitivity to outside influences (Kurosaki & Khan, 2012). In Bolivia, MFIs' capacity to handle liquidity risk under instability in politics was linked to institutional and subjective benefits, implying that outside factors do not affect all MFIs similarly (Gómez Soto & González-Vega, 2007). Assefa et al. (2013) sought to understand how market competition affects the efficiency of microfinance organisations' operations. This study tested the hypothesis that MFIs' outreach and loan

repayment rates were impacted by the amount of competition among them using a Lerner index. Using data from 362 MFIs in 73 nations, the study ran from 1995 to 2008. Microfinance competition has been on the rise for the past decade, says one report. Results from econometric analysis showed that competition among MFIs has a detrimental effect on outreach and repayment rates.

2.3 Performance indicators for Microfinance

Microfinance institutions' (MFIs) performance measures include both financial and social components, indicating their twin aims of revenue and social operation. Portfolio value, funding sources, operating expenditures, and institution size are important financial variables for analysing fiscal viability and outreach success (Green et al., 2023). The impact of microfinance on income and employment in Afghanistan's Bamyan province was studied (Sultani, 2021). FMFB-A is an institution that collaborates with the AMA and the MISFA. The study focuses on this particular set of 220 borrowers. Microfinance significantly contributes to income development and job creation, according to a study that meticulously analyses data obtained before and after FMFB-A loans were granted. Şahin & Humta (2023) looked into microfinance in the banking sector as part of their study, bringing attention to the importance of this form of financing in filling a big funding gap for businesses in developing nations. The International Finance Corporation (IFC) had previously brought this requirement to visibility. In their analysis of the current microfinance literature, Gupta (2018) claims that they shed light on certain important issues. They highlighted the methods employed by Indian banks and MFIs to deal with the scarcity of capital using mechanisms like joint liability groups (JLGs) and self-help groups. Among all microfinance programs, Gupta (2018) regarded SHG-BLP as the most crucial one globally and conducted an analysis examining the growth and effects of MFIs, with a special emphasis on lending portfolios and existing loans, by making extensive use of secondary data from academic journals, NABARD reports, and MFIN reports.

The main purpose of the research by Ashraf et al. (2014) was to identify the variables that caused MFIs across countries with diverse religious and cultural standards to have significantly varied performance metrics. The research included 754 MFIs from 83 different countries in its cross-sectional dataset. It dives into the performance of MFIs by looking at indicators including outreach, loan recovery, profitability, and cumulative financial success. Some of the factors that significantly affect MFI performance include the amount of a country's GDP and the proportion of borrowers who are female. The results demonstrate the progress the microfinance industry has made about religious inclination and offer important insights into loan provisions and default rates across cultural contexts. Research has shown that MFIs can be financially sustainable over the long run, casting doubt on their reputation as change agents (Chary et al., 2014). In terms of portfolio yields, their study found that SML, BSFL, CMC, GVMFL, and GFSPL were among the MFIs that fared better than average. This

shows that these institutions were successful financially and socially. Moreover, the effectiveness of microfinance in developing nations like Bangladesh to reduce poverty is becoming increasingly apparent. Ethiopia is one of the least developed countries in the world, and microfinance is a popular tool there to help connect banks with low-income neighbourhoods. The most disadvantaged communities cannot get loans from conventional banks due to their profit-driven policies and stringent lending rules. Poverty, hunger, illiteracy, and health issues can all be effectively addressed with microfinance (Manoharan et al., 2011). How microfinance is being utilised in India to assist the economically and socially marginalised people, as sought by Nasir (2013). Focusing on the Self-Help Groups (SHGs)-Banks Linkage Program, issues with loan distribution methods, insufficient product diversification, client overlap, and high interest rates were detected. These issues demonstrated the lack of cohesion in the microfinance industry. In a more pragmatic vein, the report concluded with recommendations for addressing these and other issues with microfinance in India.

To conclude, studies now being conducted in Afghanistan suggest that microfinance can empower individuals, improve society, and boost the economy. Sultani (2021) stated, microfinance has a positive impact on the empowerment and income of borrowers affiliated with FMFB-A in Bamyan province, and furthermore highlighted that microfinance has a localised effect. MFIs in Afghanistan faced difficulties due to a lack of experience, antiquated technology, insufficient support from the government, and intense competition (Sultani & Chandrashekhar, 2023). There is an opportunity for growth in the microfinance business in Afghanistan; nevertheless, to sustain its current level of success, the microfinance sector must solve structural issues. These contrasting perspectives bring to light the fact that microfinance in Afghanistan is not devoid of difficulties.

2.4 Research Gap

Despite a significant body of literature on microfinance institutions, there is an apparent gap in research on the adaptability of these institutions in conflict-affected and politically volatile places such as Afghanistan. The majority of previous studies have focused on MFIs functioning in more stable circumstances, creating a vacuum in our knowledge of how these institutions operate and keep up activity during crises. This investigation fills that gap by examining the performance of Afghan MFIs throughout one of the most difficult times in recent years, giving vital insights into the durability and adaptation of microfinance in unstable regions.

3. RESEARCH METHODOLOGY

3.1 Data

An approach to investigation that is quantitative and based on the analysis of secondary data is utilised in this study. Within the scope of this investigation, the pertinent data on the outreach of the microfinance institutions, which includes the number of branches, the clients serviced, and the loan amounts issued, were obtained. Furthermore, information on the financial performance of the MFIs, especially the gross loan portfolio, is acquired from the sources provided. Research papers, journals, annual reports of the selected institutions, and statistics from the AMA are some of the numerous sources that were utilised in the process of collecting secondary data. Through the application of descriptive statistics, the secondary data that was gathered is now being evaluated in order to meet the objectives of the study.

3.2 Variables

The study focuses on the following key indicators of MFI performance: Branch Expansion and Geographic Reach, Active Borrowers, Amount of Loans Disbursed, Gross Loan Portfolio, and Gross Loans Outstanding.

4. ANALYSIS AND FINDINGS

4.1 Branch Expansion and Geographic Reach

As shown in Figure 1, FMFB maintained a consistent presence across all 14 provinces from 2018 to 2022, showcasing a stable and widespread outreach strategy. FINCA, while initially present in 11 provinces in 2018, slightly reduced its coverage to 10 provinces by 2021 and continued with the same coverage in 2022. Moreover, the existence of MUTAHID-DFI persisted from 2018 to 2022 in six provinces. There was a consistent presence of OXUS in all ten provinces from 2018 to 2022. The total number of provinces in Afghanistan is 34, which warrants mention.

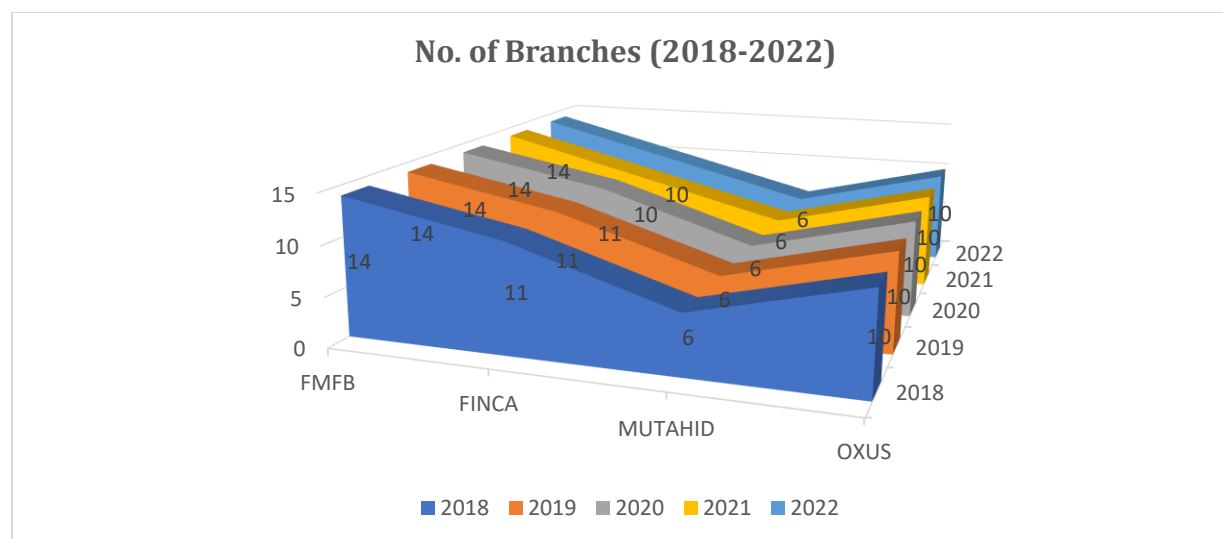


Figure 1: No of Branches

Sources: MISFA, Annual reports, 2022

4.2 Active Borrowers of Selected MFIs

There was extensive progress in customer outreach and borrower interaction by Afghan microfinance institutions in the five years between 2018 and 2022. A large portion of Afghanistan's provinces are served by the extensive financial services networks set up by FMFB, FINCA, MUTAHID, and OXUS-Afghanistan. People from all walks of life and all corners of the country's economic range were active borrowers at the targeted financial institutions. Microfinance banks have the potential to reach a large number of individuals and provide them with individualised support, allowing them to alleviate financial hardship and foster a sense of community among Afghans. To better comprehend each institution's role in Afghanistan's microfinance industry throughout the given period, we have presented a complete study of their activities in Table 2.

Table 2: Active Borrowers in Microfinance Institutions

Years	MFIs			
	FMFB	FINCA	MUTAHID	OXUS
2018-19	63,993	25,158	18,327	19,276
2019-20	63,619	27,815	21,067	24,356
2020-21	53,987	24,681	16,433	20,913
2021-22	51,393	21,202	16,655	23,445
2022-23	36,289	18,083	11,761	16,919
Total	269,281	116,939	84,243	104,909

Source: MISFA, Annual reports, 2022

Table 2 showing changes in the number of active borrowers from MFIs is critical for studying the microfinance sector's development during the selected study period. Figure 2 shows how the number of active borrowers for FINCA Microfinance, FMFB, MUTAHID Microfinance, and OXUS-Afghanistan Microfinance Institutions changes every year. Figure 2 inevitably reveals the ups and downs of active borrowers over this time frame.

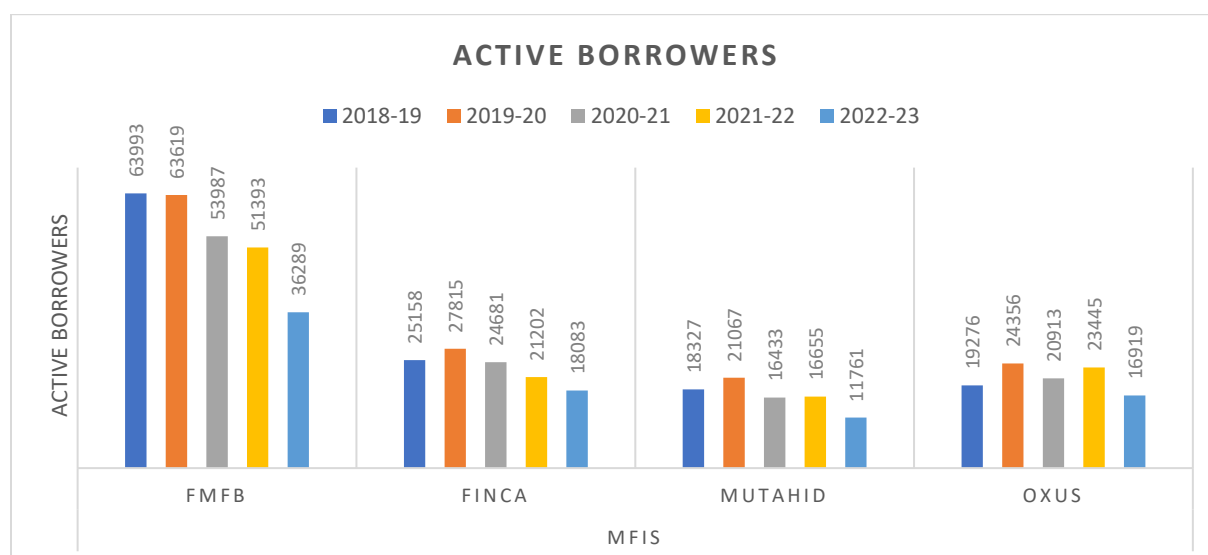


Figure 2: Active Borrowers of Selected Microfinance Institutions (2018-2022)

Source: MISFA, Annual reports, 2022

Figure 2 and Table 2 displayed that the First Microfinance Institutions assisted 269,281 borrowers during the last five years, with an average of 53,856 borrowers. The number of individuals actively seeking loans from FMFB dropped dramatically between 2018 and 2020. This trend continued into the following years, with a low of 36,289 in 2022, indicating that stabilising borrower levels was difficult at this time.

FINCA Microfinance Institution had 116,939 borrowers, or around 23,388 customers each year, over the same time. Over the course of the five-year period, the number of active borrowers declined from 25,158 in 2018 to 18,083 in 2022. The most striking change from 2018 to 2019 is the declining number of borrowers who are actively seeking loans. The difficulties FINCA has had in retaining its customer base are shown by this reduction, which might be attributed to changes in borrower habits or economic worries over this period.

Over the past five years, the number of active borrowers at MUTAHID Development Finance Institution has fluctuated. The following years saw more decline: 2019 (to 21,067) and 2022 (to 11,761). At its peak, MUTAHID-DFI helped 16,849 clients and 84,243 debtors every year. Economic instability or shifts in consumer demand could account for the declining borrower count, making it more difficult to identify active borrowers beyond 2019.

Borrowers from OXUS-Afghanistan Microfinance Company have been on the decline recently. Over its five years of operation, OXUS-Afghanistan supplied 104,909 active borrowers and serviced 20,982 customers each year, including 24,356 borrowers in 2018 and 16,919 in 2019. The next year, there was a significant decrease in the number of loans. Concerns over the COVID-19 pandemic and the subsequent collapse of the government have contributed to the uncertainty of lending markets, which microfinance organisations like

OXUS have had to contend with. The fact that active borrowers may exhibit a great deal of diversity is another illustration.

To conclude, from 2018 to 2022, the number of active borrowers at FINCA Microfinance, FMFB, MUTAHID Microfinance, and OXUS-Afghanistan Microfinance changed at various points. The fact that the population of FMFB dropped from 63,993 to 36,289 suggests that there were issues with data tracking. As a result of economic uncertainties, FINCA's clientele has decreased from 25,158 to 18,083 borrowers. The MUTAHID ranged from 21,067 to 11,761 from 2019 to 2022. The maximum quantity of OXUS recorded in 2019 was 24,356. Market uncertainty likely played a role in the decline to 16,919 in 2022.

4. 3 Loan Disbursement Statistics

The loan distribution data of four major microfinance institutions, FMFB, FINCA Microfinance, MUTAHID Microfinance, and OXUS Afghanistan Microfinance Institutions, are examined in a detailed and sufficient analysis that covers the years 2018-2022. Valuable perspectives on the loan distribution patterns of these banks could be acquired from the demanding collection and visual representation of the complicated financial data via elaborate Table 3 and Figure 3. This era of research takes on further importance in light of the COVID-19 epidemic and the political unrest caused by the fall of governments. During these difficult times, MUTAHID Microfinance, FMFB, FINCA Microfinance, and OXUS-Afghanistan Microfinance all used different financial strategies, which are summarised in Table 3 and Figure 3 that are provided here. Besides, Table 3 examines the total growth rate (TGR) of loan disbursement and the annual average growth rate (AAGR) as important metrics for gauging the cumulative growth percentage (CGR) over a certain time frame. to determine the AAGR and TGR, the following formulas have been utilised:

$$AAGR = \left(\frac{P_n}{P_0} \right)^{1/n} - 1 \quad (1)$$

$$TGR = \frac{P_n - P_0}{P_0} \times 100 \quad (2)$$

Where P_n denotes the amount of loans paid out at the end of the chosen time frame. P_0 denotes the initial quantity of loans distributed at the beginning of the term. n represents the length of the evaluated time frame.

Table 3: Loan Disbursement Statistics

Years	MFIs Disburse Loan Amounts in AFN.			
	FMFB	FINCA	MUTAHID	OXUS
2018-19	50,614,850,121	11,472,492,938	4,051,436,312	6,964,741,664
2019-20	56,047,457,269	13,873,829,709	5,489,111,346	8,786,189,827
2020-21	60,014,766,004	14,673,769,219	5,844,155,618	9,183,010,179

2021-22	63,791,586,309	15,797,394,263	6,454,781,435	9,727,811,154
2022-23	64,611,966,805	16,020,768,368	6,564,529,935	10,637,701,052
AAGR(%)	7.62	8.4	9.4	10.3
TGR(%)	28	40	62	53

Source: AMA, 2018-2022

Before we get into the data, Figure 3 provides an overview of the five-year trend in the payment of loan amounts.

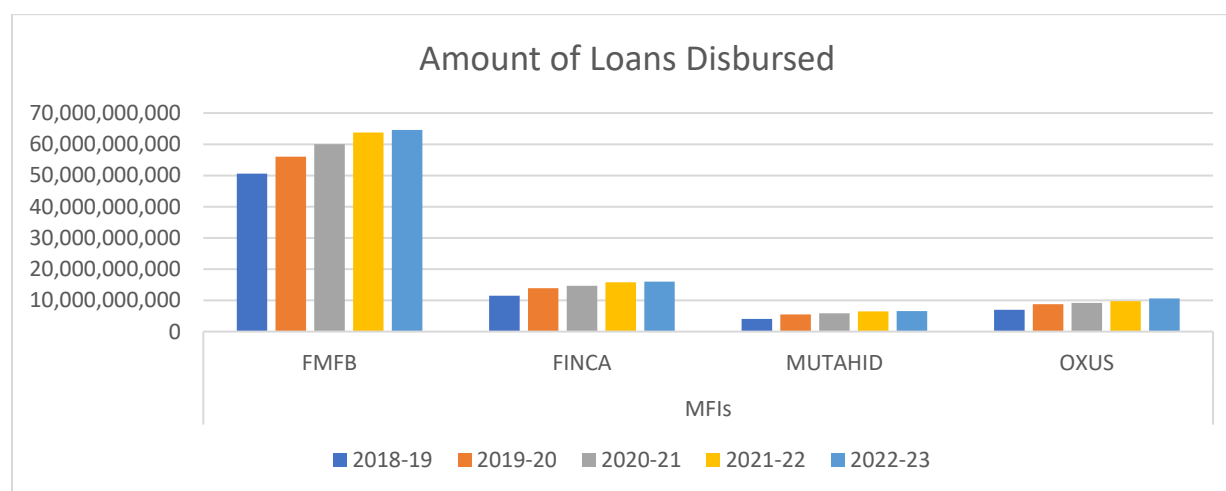


Figure 3: Loan Disbursement across the Selected MFIs

Source: AMA, 2018-2022

It became clear that financial challenges and market changes considerably affected the lending operations of important Afghanistan MFIs from 2018 to 2022, according to the thorough investigation of these institutions. Data from renowned MFIs, including FMFB, FINCA Microfinance, OXUS, and MUTAHID Microfinance, are shown in Table 3 and Figure 3, which support this statement.

Over the five years, FMFB's loan disbursements grew steadily. Loan amounts ranged from 50,614,850,121 AFN in 2018–19 to 64,611,966,805 AFN in 2022–23, with annual increases afterwards. This shows that FMFB's lending operations are always rising, indicating that they can react to market needs and keep their borrower base growing every year. Loans increased annually at FINCA Microfinance Institutions, following a similar trend of expansion. The total loan amount reached 16,020,768,368 AFN in 2022–23, up from 11,472,492,938 AFN in 2018–19. This steady expansion exemplifies FINCA's yearly efforts to broaden its lending operations and serve a more diverse clientele.

The loan payments made by MUTAHID Development Finance Institution throughout the five years demonstrated a variety of tendencies. The total amount of loans disbursed by MUTAHID MFI in 2018–19 was 4,051,436,312 AFN. A substantial jump occurred the following year, with loans reaching 5,489,111,346 AFN in 2019–20. But there was a little decrease to 5,844,155,618 AFN in 2020–21, and then a huge spike to 6,454,781,435 AFN in

2021–22. In 2022–23, loans fell to 6,564,529,935 AFN, reversing the trend from the previous year despite the rise. During the given time frame, OXUS Microfinance Institution's loan disbursements showed a steady increase. Beginning at 6,964,741,664 AFN in 2018–19, OXUS showed a rising trend, reaching 8,786,189,827 AFN in 2019–20 and going on to 9,183,010,179 AFN in 2020–21. The upward trend persisted, with loans reaching 10,637,701,052 AFN in 2022–23 and 9,727,811,154 AFN in 2021–22.

To summarise, FMFB and FINCA both had annual increases in loan disbursements; MUTAHID showed adaptive methods with variations, while OXUS expanded its lending operations steadily and proactively during the given time. The adaptability of microfinance operations to changing market conditions and borrower needs is shown by these patterns.

Additionally, from 2018 to 2022–23, Table 3, displaying loan disbursement statistics, reveals TGR and AAGR for four different MFIs. The AAGR shows the steady annual percentage increase in payouts during the whole timeframe. Among them, FMFB's AAGR was 7.62%, FINCA's was 8.4%, MUTAHID's was 9.4%, and OXUS's was 10.3%. TGR shows how much money has grown in distributions from the beginning to the end. Shockingly, MUTAHID had 62% TGR, followed by OXUS with 53%, FINCA with 40%, and FMFB with 28%. These numbers show the average yearly increase as well as the total growth over the five years, showing how the MFIs expanded at different rates and in total throughout that time.

4. 4 Analysing Loan Portfolio Dynamics

In order to evaluate the soundness of lending institutions' liquidity and managerial decisions, it is necessary to comprehend the microfinance sector's loan portfolio characteristics. Changes in the financial sector and volatility in the markets characterize the years 2018–2022, which are the subject of this investigation. We want to find trends and lessons by looking at the gross loan portfolio and gross loans outstanding of major banks. Not only does this kind of research shed light on the tactics and flexibility of lending institutions, but it also has important consequences for the economy as a whole. This investigation is critical for understanding the resiliency and strategic acumen of microfinance organisations as they oversaw their loan portfolios during a time of heavy economic hardship. All financial assistance, gross loan portfolio, and outstanding statistics shown in Table 4 and Figure 4 provide an in-depth overview of the lending environment during a period characterised by financial instability and changing market circumstances.

Table 4: Gross Loan Portfolio

Years	MFIs' Gross Loan Portfolio Amounts in AFN.			
	FMFB	FINCA	MUTAHID	OXUS
2018-19	5,876,550,205	1,211,970,681	636,318,945	959,506,200
2019-20	6,212,776,488	1,215,195,265	645,364,309	989,435,154
2020-21	4,584,886,936	1,274,111,114	604,553,531	706,602,342

2021-22	4,516,243,800	1,015,922,428	453,596,773	886,086,929
2022-23	2,757,811,343	1,763,783,387	390,602,736	617,696,485
Total	23,948,268,772	6,480,982,875	2,730,436,294	4,159,327,110

Source: AMA, Annual reports

Furthermore, Figure 4 provides a more precise explanation and analysis of the study's data on the changing structure of loan portfolios, which optimises the data's visual representation.

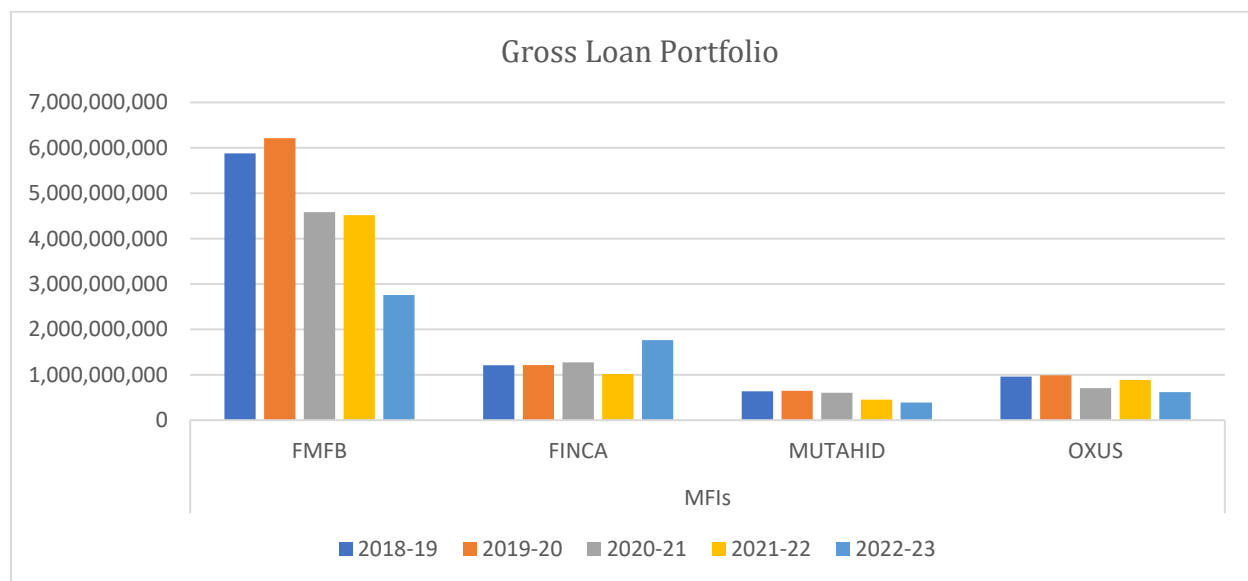


Figure 4: The Gross Loan Portfolio of Selected MFIs

Source: AMA, Annual reports

As shown in both Table 4 and Figure 4 above, **FMFB** experienced fluctuations in its gross loan portfolio over the years. From 5,876,550,205 AFN in 2018–19, it increased to 6,212,776,488 AFN in 2019–20, then notably dropped to 4,584,886,936 AFN in 2020–21 and 4,516,243,800 AFN in 2021–22. However, there was a significant decrease to 2,757,811,343 AFN in 2022–23, resulting in a total portfolio of 23,948,268,772 AFN over the specified period.

FINCA maintained a relatively stable gross loan portfolio, starting at 1,211,970,681 AFN in 2018–19 and hovering around 1.2–1.3 billion AFN until 2021–22. However, in 2022–23, there was a significant increase to 1,763,783,387 AFN, resulting in a total portfolio of 6,480,982,875 AFN over the mentioned years.

MUTAHID's gross loan portfolio fluctuated moderately between 453,596,773 AFN and 645,364,309 AFN until 2021–22. However, there was a substantial decrease to 390,602,736 AFN in 2022–23, totalling 2,730,436,294 AFN over the specified period.

OXUS witnessed fluctuations in its gross loan portfolio, ranging between 706,602,342 AFN and 989,435,154 AFN until 2021–22. The portfolio slightly decreased to 886,086,929 AFN in

2021–22 and notably dropped to 617,696,485 AFN in 2022–23, accumulating to a total of 4,159,327,110 AFN. These trends indicate varied trajectories in each MFI's gross loan portfolios, showcasing fluctuations and potential shifts in their lending strategies or responses to changing market conditions in Afghanistan.

Table 5: Gross Loan Outstanding

Years	MFIs Gross Loan Outstanding Amounts in AFN.			
	FMFB	FINCA	MUTAHID	OXUS
2018-19	4,749,766,709	1,054,900,179	582,983,599	721,662,672
2019-20	4,579,696,517	1,164,627,020	630,105,890	771,206,896
2020-21	3,797,687,059	991,710,003	604,553,531	777,416,424
2021-22	4,584,886,936	861,829,919	453,596,773	722,110,474
2022-23	4,055,277,608	601,376,505	390,602,736	477,172,693
Total	21,767,314,829	4,674,443,626	2,661,842,529	3,469,569,159

Source: MISFA, Annual reports

The visualisation shown in Figure 5 illustrates the total gross loan outstanding of selected MFIs from 2018 to 2022, aimed at enhancing the visualisation of the data.

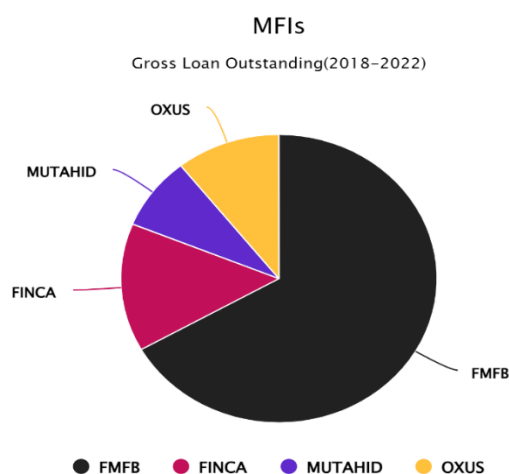


Figure 5: Gross Loan Outstanding

Source: MISFA, Annual reports

As evident from both the Table 5 data and the Figure 5 representation provided above, **FMFB's** gross loan outstanding ranged from 4,749,766,709 AFN to 4,055,277,608 AFN over the years. There were fluctuations, with a decrease in 2019–20, followed by a slight increase in 2020–21. Subsequently, the portfolio remained relatively stable until a decrease in 2022–23. Overall, FMFB's total gross loan outstanding summed up to 21,767,314,829 AFN.

For **FINCA**, the gross loan outstanding started at 1,054,900,179 AFN in 2018–19, increased in 2019–20, and then decreased slightly in 2020–21. There was a significant drop

in 2021–22 and another notable decrease in 2022–23. This led to a total gross loan outstanding of 4,674,443,626 AFN over the mentioned period.

MUTAHID's gross loan outstanding experienced fluctuations, beginning at 582,983,599 AFN and peaking in 2019–20 before maintaining a relatively consistent figure until 2021–22. However, there was a substantial decrease in 2022–23, resulting in a total gross loan outstanding of 2,661,842,529 AFN. The gross loan outstanding for **OXUS** ranged from 721,662,672 AFN in 2018–19 to 477,172,693 AFN in 2022–23. The total gross loan outstanding was 3,469,569,159 AFN after a few ups and downs throughout the years. These patterns show that each MFI's gross loan outstanding has changed over time, which might indicate changes in lending tactics, reactions to market forces, or adaptations to Afghanistan's financial condition.

5. DISCUSSION AND CONCLUSION

Microfinance in Afghanistan has endured through a challenging period that runs from 2018 to 2022. The microfinance sector in Afghanistan is controlled by significant organizations such as FMFB, FINCA Microfinance, MUTAHID Microfinance, and OXUS-Afghanistan. By analyzing regional coverage patterns, active borrowers, payment of loans, and loan portfolios, one may gain insight into intricate activities that happen. The effects of the COVID-19 outbreak and the collapse of the government are examples of external factors that contribute to the formation of these dynamics. Other factors include changes in the economy, uncertainty in the market, and foreign difficulties.

The microfinance business in Afghanistan was presented with a substantial number of challenges as a result of the breakout of COVID-19 in March 2020 and the political collapse that occurred in August 2021. MFIs were badly damaged by the economic turmoil, financial failures, and operational limitations that were brought about by these crises. The volatility of the political system caused the sector to experience pressure, which in turn exacerbated the risks to security, particularly in areas that were experiencing conflict. In addition to this, there were restrictions placed on the finances and a decrease in investor confidence. Furthermore, the FINCA microfinance institution ceased its operations during the second quarter of the year 2022, resulting in the institution's total cessation of operations.

As far as geographical areas are concerned, FMFB maintained a constant presence throughout all of the provinces that they targeted, placing a focus on an outreach strategy that was both consistent and wide. Furthermore, the data for FINCA derives from the first quarter of the year, since after that, the organization terminated its activities in Afghanistan. There was a little decline in the presence of FINCA in the provinces at the same time. Because both MUTAHID Development Finance Institution and OXUS-Afghanistan Microfinance Institutions exhibited fluctuations in coverage, these changes were probably with their adaptation methods to meet the ever-evolving requirements of the market.

A number of different patterns were seen in the selected MFIs, as was determined via the active borrower survey. FMFB and FINCA Microfinance are having trouble maintaining their borrower base, as shown by the fact that the number of active borrowers at both of these institutions has decreased. MUTAHID revealed changes, which were a reflection of the dynamics of the market, but OXUS demonstrated flexibility by altering borrower numbers based on demand fluctuations. It is clear from these statistics that external factors have a significant impact on the degree to which borrowers are engaged and retained within an MFI organization.

FMFB and FINCA Microfinance Institution have shown consistent growth throughout the course of the five years, as measured by the amount of money that has been paid out as loans. The fact that they need to meet the requirements of the market and expand their lending activities is shown by this. In contrast to OXUS, which displayed proactive growth in lending, indicating their dynamic responsiveness to the conditions of the market, MUTAHID demonstrated procedures that were adaptable in the face of oscillations on the market. The various courses of action that each MFI has pursued were brought into greater focus via the use of the research on gross loan portfolios and current loans. There were fluctuations in FMFB's lending portfolio, in contrast to FINCA, which was able to keep its loan portfolio largely steady. The loan portfolios of both MUTAHID and OXUS have undergone modification, which may be an indication of potential modifications to lending strategy or responses to evolving market conditions. OXUS exhibited changes, but MUTAHID had very slight fluctuations.

In a brief, the microfinance sector in Afghanistan has attained the ability to adapt in the face of financial uncertainty and hurdles. By effectively overseeing their portfolios, maintaining their planned presence, and resolving issues, institutions demonstrate their commitment to financial inclusion and stability, even in tough circumstances. In order to achieve financial empowerment and long-term growth in Afghanistan's complex and ever-changing environment, these institutions must be able to adapt and think creatively at all times. For these traits to advance in the future, it is crucial to keep using them. It will be crucial to guarantee the industry's future viability and development.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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Article

Drivers of Bancassurance Adoption: An Integrated Model of Trust, Perceived Value, and Customer Behaviour

S.S Weedige^{1*}

¹Department of Insurance and Valuation, Wayamba University of Sri Lanka

Abstract: Bancassurance, a strategic alliance between banks and insurance companies, is a crucial channel for financial inclusion in emerging markets. However, adoption rates in Sri Lanka are low compared to other similar economies. In this study, we integrate the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB), with a special emphasis on trust mechanisms and perceived value, to examine the complex dynamics of consumer adoption. Partial least squares structural equation modelling (PLS-SEM) was employed to analyse primary data collected from 345 Sri Lankan bank customers. The results indicate that perceived usefulness is the strongest predictor of attitudes towards Bancassurance, and trust in banks is also a significant predictor, whereas distrust in insurance companies is not. The model demonstrates good predictive power, accounting for 70% of the variance in purchase intention, with attitude serving as a key mediator. Results showed that subjective norms and perceived behavioural control were significant determinants of adoption intentions, indicating the large influence of social and contextual factors. Substantial Q^2 values validate the strong predictive relevance of the model with respect to attitudinal formation and behavioural intentions. This paper contributes to the theoretical understanding of financial service adoption in emerging markets by extending the findings to the adoption of Bancassurance, providing actionable insights for financial institutions and policymakers in designing trust-building initiatives and targeted marketing strategies to promote the adoption of Bancassurance.

Keywords: bancassurance adoption; trust in banks; technology acceptance model; theory of planned behaviour; emerging markets; financial inclusion; structural equation modelling, Sri Lanka

*Corresponding Author: sanjeewa@wyb.ac.lk



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1. INTRODUCTION

Technological advancements and innovative financial collaborations have redefined the scope of financial products and services globally. Bancassurance, which integrates banking and insurance, represents a compelling example of this evolution. By allowing banks to distribute insurance products through their channels, Bancassurance offers a convenient and efficient platform for customers to manage their financial and risk protection needs (Swiss-Re, 2023). Bancassurance contributes over 30% of life insurance premium revenues in developed markets. However, in Sri Lanka, the penetration of Bancassurance remains insufficient, accounting for less than 10% of the insurance market, compared to 50% in Malaysia (IRCSL, 2022).

There are several reasons for the underperformance in Bancassurance, including a lack of customer awareness, trust issues, and the perception that the products are too complex. Research indicates that consumer distrust in insurance companies exacerbates this situation; people often perceive insurance providers as less transparent than banks, which discourages them from using these services (Beckett, Hower, & Howcroft, 2000). At the same time, a limited understanding of bancassurance products makes them appear less valuable and more difficult to access, which further reduces demand (Lymperopoulos, Chaniotakis, & Soureli, 2013). These challenges underscore the need for a more in-depth examination of the factors driving bancassurance adoption.

This study builds on the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) to investigate how trust, perceived usefulness, ease of use, and behavioural norms influence the adoption of Bancassurance in Sri Lanka. While the TAM framework emphasises utility and user experience as determinants of acceptance, the TPB integrates attitudes, subjective norms, and perceived control to model behavioural intention (Ajzen, 1991; Davis, 1989). Despite extensive research on financial service adoption, few studies explicitly explore Bancassurance within emerging markets, such as Sri Lanka, where cultural and institutional factors uniquely shape consumer behaviour. This research fills that critical gap by offering empirical insights into adoption barriers and enablers.

Statistical data underscores the urgency of this inquiry. While Sri Lanka's labour force has approximately 35% life insurance coverage, the country lags behind regional peers in adopting comprehensive risk protection strategies, including Bancassurance (IRCSL, 2022). With over 60% of surveyed customers indicating limited awareness or trust in such offerings, addressing these issues holds significant transformative potential for the sector (Swiss-Re, 2023). By identifying these pain points and aligning solutions with consumer preferences, the study seeks to empower financial institutions to optimise their strategies for driving adoption.

The findings of this research will illuminate the synergies between banks and insurance providers, while offering practical recommendations for enhancing customer trust and product accessibility. The remainder of the paper is structured as follows: the next section reviews relevant literature and develops the conceptual framework, followed by a discussion of the research methodology, analysis, and findings. The paper concludes with theoretical and managerial implications, limitations, and suggestions for future research.

2. LITERATURE REVIEW

2.1 Theoretical Foundations

The intention to purchase bancassurance products serves as a critical predictor in understanding customer adoption behaviour. Purchase intention is defined as the likelihood that a customer will choose a specific product or service based on perceived utility, trust, and behavioural influences (Kotler, 2016). Extensive empirical studies have shown purchase intention as an antecedent of the actual purchase, proving it to be predictive in the consumer decision-making process (Ajzen, 1991).

In the context of Bancassurance, purchase intention summarises customers' attitudes toward integrating banking and insurance services, which are shaped by factors such as trust in financial institutions, product accessibility, and perceived value. According to Beckett et al. (2000) purchase intention in financial services is strongly correlated with trust, particularly when customers perceive alignment in the objectives of partnering institutions. Additionally, customers' subjective norms—such as peer recommendations or societal influences—are crucial in shaping their intention, as noted by Lymperopoulos et al. (2013).

Behavioural control, which includes customers' perceived ease of accessing and understanding bancassurance products, further strengthens the formation of intention (Venkatesh & Davis, 2000). Similarly, Beckett et al. (2000) argue that the all-in-one integration of service platforms can mitigate cognitive barriers, thereby fostering positive intentions. Hence, purchase intention emerges as an intersectional construct that integrates trust mechanisms, perceived ease, and societal influences.

Understanding the dynamics of purchase intention sets the stage for examining theoretical foundations, such as the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB), which further contextualise the adoption of financial service products. These frameworks illuminate the relationships between attitudes, subjective norms, behavioural control, and intention in the adoption decision-making process.

2.2 Empirical Studies

Recent empirical studies on financial service adoption offer valuable insights into the critical factors influencing bancassurance adoption. These studies demonstrate the multidimensional aspects of consumer behaviour, shaped by trust, perceived value, and technological ease.

A summary of recent studies is provided in Table 1 below, synthesising their primary objectives, variables, methodologies, and findings:

Table 1: Summary of the Recent Literature

Author and Year	Study Title	Main Variables Considered	Sample and Data	Main Conclusion
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			Analysis Method	
Sultana, Rahman, Zahidul Islam, and Ahmad (2023)	An Exploration of Bancassurance: Standpoints of Banks, Insurance Companies and Customers in Bangladesh	Cost effectiveness, Modified insurance solutions	structured survey, Sample size 150. Ordinal Regression Analysis	bank officials not aware of the naïve concept and Customers are yet to be convinced about the rising benefits of the concept
Alam and Akter (2019)	"Consumer Trust in Bancassurance Products"	Trust, Product Accessibility, Awareness	Survey of 250 bank customers; Structural Equation Modeling (SEM)	Trust is a significant predictor of purchase intention; accessibility is critical.
Lymperopoulos et al. (2013)	"Role of Perceived Fit in Digital Banking"	Perceived Fit, Behavioral Control	Mixed-methods study; Surveys and Focus Groups	Perceived fit enhances willingness to adopt digital financial products.
Beckett et al. (2000)	"Consumer Behaviour in Financial Services"	Trust, Decision-Making Processes	Case studies across three financial firms	Trust accelerates adoption, while distrust poses barriers in service perception.
Ajzen (1991)	"The Theory of Planned Behaviour and Service Adoption"	Attitudes, Subjective Norms, Behavioural Control	Meta-analysis of prior literature; Analytical framework	Behavioural intention mediates the relationship between attitudes and action.

Source: Author constructed based on the literature survey

From these empirical insights, it is evident that integrating trust mechanisms and addressing ease of access are central to understanding bancassurance adoption.

Based on this empirical foundation, the conceptual framework of the study integrates variables such as perceived usefulness (PU), perceived ease of use (PEU), trust in banks, distrust

in insurance companies, and behavioural influences, including subjective norms and perceived behavioural control. These constructs are interlinked through the lenses of TAM and TPB, ensuring theoretical rigour and empirical validation.

2.3 Hypotheses Development

Perceived usefulness and attitudes toward Bancassurance

Perceived usefulness (PU) is a core concept in the Technology Acceptance Model (TAM), indicating the extent to which a consumer believes using a specific product enhances their performance or fulfils their needs (Davis, 1989). The large number of studies in the existing body of literature suggests that PU strongly influences attitudes, mostly in contexts involving technology and integrated financial services. According to Venkatesh and Davis (2000), the utility derived from a product increases its perceived value, which in turn leads to positive consumer attitudes. In the context of Bancassurance, Perceived Usefulness typically relates to the customer's perception of how coupling banking and insurance services adds convenience and value to their financial planning.

According to the existing body of literature, theoretical and empirical studies support the central role of PU in shaping consumer attitudes during the decision-making process. Saeed et al. (2018) in their research proved that the perceived usefulness of the developed bancassurance products, such as efficiency in processes and the availability of suitable solutions, benefited from positive attitudes among customers. Additionally, Lymperopoulos et al. (2013) confirmed that the convenience and relevance of the integrated products obtained cause positive associations in the domain of digital banking, which can be compared to Bancassurance.

From the theoretical perspective, the TAM highlights that PU directly influences attitudes toward adopting technology or service products. This association is well understood in the financial services literature, where PU has been found to be the key determinant of consumer attitudes in real-world empirical environments (Beckett et al., 2000). Based on these arguments and justifications, the researcher developed the following hypotheses:

H1: Perceived usefulness significantly and positively influences attitudes toward bancassurance purchasing intention.

Perceived ease of use and attitudes toward Bancassurance

The Perceived Ease of Use (PEU) is a fundamental component of the Technology Acceptance Model (TAM), which measures the level of perceived effort required to use a particular system or service (Davis, 1989). According to TAM, the PEU has developed as a key determinant that influences attitudes by reducing the cognitive effort required to engage

with new technologies or services. When it comes to bank assurance products, PEU enables users to access and manage services with minimal complexity by integrating banking and insurance services.

Empirical studies consistently strengthen the link between PEU and consumer attitudes. Venkatesh and Davis (2000) revealed that perceived ease of use directly influences attitudes by building trust in tech usability somehow. Lymperopoulos et al. (2013) recently explored somewhat analogous research 2013. highlighted that user-friendly financial services platforms improve consumer perceptions, thereby enhancing their willingness to adopt integrated products like Bancassurance.

Besides empirical evidence, the theoretical foundation has also backed the importance of PEU. According to Davis (1989), people tend to gravitate toward services they find intuitive, as ease of use reduces the learning curve and potential frustration. In particular, customers may first perceive complexity in a bancassurance context where banking and insurance domains intersect. This theoretical argument was supported by Beckett et al. (2000), who found that simplifying customers' interactions with financial services leads to more positive attitudes toward adopting financial services. Based on the above theoretical insights and empirical support, the researcher developed the following hypothesis:

H2: Perceived ease of use significantly and positively influences attitudes toward bancassurance purchase intention.

Trust in banks and attitudes toward Bancassurance

Bancassurance relies on trust in banks to gain the confidence of customers in financial services. Trust is the belief that an institution is reliable and competent (Beckett et al., 2000). The essence of trust is that it reduces the perceived risks, increases comfort, and leads to a positive evaluation of products and services.

According to existing empirical literature, there have been established relationships between trust and attitudes toward Bancassurance. For instance, Saeed et al. (2018) found that trust in banks substantially enhances the customers' willingness to accept a bank's product that integrates various services such as Bancassurance. Similarly, Beckett et al. (2000) documented that trust in financial institutions tends to have a positive effect on attitudes, as it promotes concerns about service quality and reliability. In emerging markets where financial literacy is still developing, trust becomes a stabilising force (Lymperopoulos et al., 2013).

From a theoretical point of view, trust is aligned with the Theory of Planned Behaviour (Ajzen, 1991), which suggests that trust contributes to attitude by reinforcing subjective norms and perceived behavioural control. Trust in the banking partner not only strengthens service credibility but also neutralises doubt about insurance companies, creating more

positive opinions. Based on the above theoretical justifications and empirical support, the researcher developed the following hypothesis:

H3: Trust in banks significantly and positively influences attitudes toward bancassurance purchase intention.

Distrust in insurance companies and attitudes toward Bancassurance

The adoption of Bancassurance is vulnerable to distrust in insurance companies. Negative perceptions regarding whether an organisation is transparent and trustworthy create distrust, leading to a decline in consumer confidence in products or services associated with such organisations. For Bancassurance, such distrust can erode many of the beneficial aspects of the alliance between banks and insurance firms (Beckett et al., 2000).

According to the Theory of Planned Behaviour (Ajzen, 1991), a negative attitude resulting from distrust leads to a reduction in the intention to engage with the service, as perceived problems outweigh perceived benefits (perceived risks outweigh actual benefits). Moreover, Beckett et al. (2000) point out that institutional distrust not only hinders the adoption of direct services but also has adverse effects on auxiliary products, such as Bancassurance, where several products are embedded in a multi-service framework.

This theoretical observation is consistent with empirical studies on consumer distrust. According to Saeed et al. (2018), the uncertainty in insurance companies' practices, such as complex policy terms and claim processes, supports resistance toward integrated financial solutions. Similarly, Lymperopoulos, Chaniotakis, and Soureli (2012) and Weedige, Ouyang, Gao, and Liu (2019) conclude that the trust of associated banks in bancassurance products is eroded when consumers are not confident about the efficiency or unethical behaviour of the insurance institution. Based on both theoretical and empirical justifications for distrust of insurance companies, the researcher developed the following hypothesis:

H4: Distrust in insurance companies significantly and negatively influences attitudes toward bancassurance purchasing intention.

Attitudes toward bancassurance and purchase intentions

In the context of financial services, a positive or negative attitude towards performing a specific behaviour is a critical predictor of purchasing intentions (Ajzen, 1991). When it comes to bankassurance, attitudes refer to customers' perceptions of banking and insurance services coming together, and the combination aims to deliver enhanced convenience and a value differential.

The existing body of empirical literature consistently demonstrates that a positive attitude has a significant and positive influence on purchase intention. Accordingly, Davis (1989) finds that customers' propensity to access integrated service models, such as digital

financial products, depends on their positive attitudes towards these models. Saeed et al. (2018) noted that attitudes mediate the relationship between perceived value and purchase decision, as they play a significant role in consumer behaviour, similar to attitudes. Similarly, Beckett et al. (2000) also noted that the more favourable the attitude, the more likely it is to convert interest into purchasing decisions when trust mechanisms and perceived utility are present.

From a theoretical point of view, the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) provide a relationship and explanation between attitudes and intentions. According to the TAM, attitudes are formed through perceptions of the usefulness and ease of use of a product or service, influencing purchase intentions (Venkatesh & Davis, 2000). In contrast, TPB emphasises the role of attitudes as a primary antecedent of intention, particularly under conditions where the product of subjective norms and perceived behavioural control is mixed (Ajzen, 1991). Based on these theoretical and empirical insights, in this study, the researcher proposed the following hypothesis:

H5: Attitudes toward Bancassurance significantly and positively influence the purchase intentions of Bancassurance.

Subjective norms and purchase intentions

Subjective norms refer to the perceived social pressure to engage in (or refrain from) a specific behaviour (Ajzen, 1991). The norms of an individual are determined by their environment, which includes peers, family, and influential groups, and these are also very essential in influencing behavioural intentions. Subjective norms highlight the effect of society's expectations and endorsements on a customer's likelihood of purchasing bancassurance products.

Empirical research highlights the significance of subjective norms in shaping purchase intentions. Lymperopoulos et al. (2012) proved that social influences, such as recommendations from trusted advisors or peer groups, have a significant impact on customers' readiness to adopt financial innovations. Also, studies in broader financial contexts have shown that normative pressures increase the likelihood of customers aligning their intentions with perceived societal expectations.

The theoretical support of subjective norms comes from the TPB, which argues that social pressure acts together with attitudes and perceived behavioural control to predict behavioural intentions as presented by Ajzen (1991). More specifically, TPB has identified that the stronger the perceived approval or disapproval from significant referents, the greater influence it has on forming the intention. On these theoretical and empirical justifications, in this study, the researcher proposed the following hypothesis:

H6: Subjective norms significantly and positively influence the purchase intentions of Bancassurance.

Perceived behavioural control and purchase intentions

According to Ajzen (1991), PBC, the leading construct in TPB, refers to an individual's perception of their capability to perform a given behaviour. PBC combines both external factors, such as access to relevant resources, and internal factors, for example, self-efficacy, for the purpose of predicting the extent to which one feels capable of making effective decisions. More specifically, in the context of Bancassurance, customers express confidence in accessing, comprehending, and managing various types of financial products provided by either banks or insurance organisations.

Empirical studies have highlighted the importance of PBC in influencing purchase intentions. According to Venkatesh and Davis (2000), consumers are more willing to adopt new products if they perceive themselves as having control over financial services. Similarly, Beckett et al. (2000) noted that PBC acts as a moderator, where increased levels of perceived control are associated with stronger intentions to use financial services. Additionally, Saeed et al. (2018) have established proof that PBC accessibility and teaching customers enhance PBC to lead to positive purchase intention in integrated offerings, such as Bancassurance.

From a theoretical perspective, TPB posits that PBC operates in conjunction with attitude and subjective norms to influence behavioural intention. When customers feel capable of making informed decisions about bancassurance products, their intention to buy increases, as perceived barriers are minimised (Ajzen, 1991). Based on this theoretical and empirical background, in this study, the researcher proposed the following hypothesis

H7: Perceived behavioural control significantly and positively influences the purchase intentions of Bancassurance.

Conceptual Framework

Based on the above theoretical and conceptual justifications, the researcher constructed the conceptual framework of the study as given below (Figure 1).

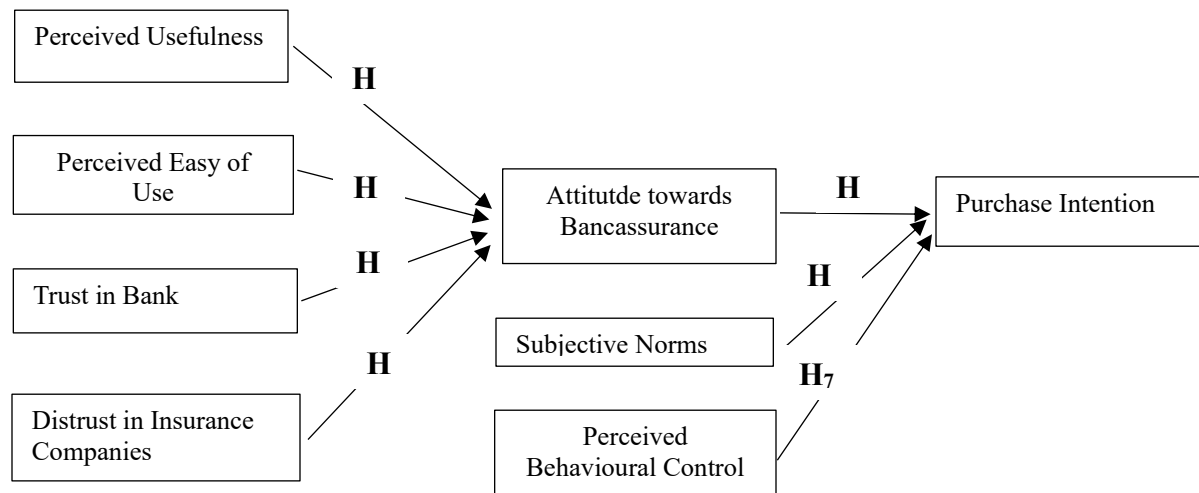


Figure 1: Conceptual Framework

Source: Author constructed based on the literature survey

2.4. Profile of Sri Lanka Economy, Society, and Finance and Insurance Industry

Sri Lanka, with a population of 23.2 million as of January 2025, is an emerging market recovering from the 2022-2023 economic crisis while maintaining its position as a lower-middle-income country. The demographic landscape features a 19.5% urban population, a median age of 33.3 years, and an overall life expectancy of 72.2 years, creating evolving financial service demands (Countrymeters, 2025; Lanka, 2024a, 2024b).

The banking sector dominates Sri Lanka's financial system, comprising Licensed Commercial Banks and Licensed Specialised banks that account for the highest share of total assets (Lanka, 2025). The sector has demonstrated resilience following the economic crisis and is projected to grow by 5.75% from 2024 to 2028, reaching US\$7.93 billion by 2028 (Statista, 2025a).

Insurance penetration remains low but shows significant growth potential, with the market expected to achieve a compound annual growth rate (CAGR) of over 8% from 2024 to 2028 (GlobalData, 2024). The insurance market is projected to reach US\$1.90 billion by 2029 (Statista, 2025b), presenting substantial expansion opportunities compared to regional peers.

Recent regulatory reforms by the Central Bank focus on financial sector stability, enhanced supervision frameworks, and risk management guidelines aligned with IMF-supported economic adjustment programmes. These developments, combined with demographic shifts and increasing digital adoption, create favourable conditions for bancassurance growth. The bancassurance channel represents significant untapped potential given Sri Lanka's established banking infrastructure and growing consumer sophistication. As economic stability returns and consumer confidence recovers, the

integration of banking and insurance services is positioned to play an increasingly important role in meeting the comprehensive financial needs of Sri Lankan consumers.

3. RESEARCH METHODS

3.1 Measurement of the Variables

To conceptualise the constructs in this study, measurement scales validated in prior research were adapted with minor modifications to fit within the bancassurance context. Perceived usefulness was measured using a three-item scale adopted from Davis (1989), which reflects the extent to which customers perceive Bancassurance as enabling/enhancing their financial management. The operationalisation of perceived ease of use consisted of a three-item scale, also developed from the original framework by Davis (1989), that focused on user-friendliness.

Trust in banks was assessed using a three-item scale developed by Beckett et al. (2000), while distrust in insurance was measured with a three-item scale from the same source. These scales capture the customers' trust/scepticism towards institutional reliability and service quality.

The Attitude toward Bancassurance was measured using a three-item scale adapted from Venkatesh and Davis (2000), reflecting evaluative reactions toward the combined service model. Subjective norms, or perceived social influence, were measured with a three-item scale adapted from Ajzen (1991). Perceived behavioural control was operationalised using a three-item scale adapted from Ajzen (1991), reflecting customers' confidence in adopting the bancassurance product. Purchase intention was measured using a self-constructed five-item scale based on Ajzen's criteria contextualised for bancassurance adoption.

All constructs used a five-point Likert scale, ranging from "strongly disagree" to "strongly agree." This consistent approach enables comparability and provides a solid foundation for analysis.

3.2 Sampling and Data Collection

Data for this study were gathered through a questionnaire survey. Since the target population consists of retail bank customers in Sri Lanka, a stratified random sampling technique was adopted as far as possible to achieve a good spread of respondents across different demographics and banking institutions. This then allowed the sampling of customers who had been exposed to bancassurance products or had been exposed to promotional efforts selling such services.

However, consistent with recommendations by Hair (J. F. J. Hair, Hult, G. T. M., Ringle, C. M., Sarstedt, M., 2014), a sample size of 200 respondents has been considered adequate

in ensuring sufficient statistical power in PLS-SEM analysis. Questionnaires were distributed to retail bank customers across five leading Sri Lankan commercial banks, with due consideration for geographical and occupational diversity, resulting in a total sample size of 400. Out of the questionnaires distributed, 368 were returned, and 345 valid responses were usable for analysis after screening for completeness and reliability.

The minimum age requirement was set at 18 years, with exposure to bancassurance services, to ensure that the respondents were capable of providing valid responses. Before conducting the actual survey, a pilot test was conducted to refine the questionnaire in terms of clarity, reliability, and content validity. The final instrument for data collection used a combination of printed and online formats to ensure easy access and increase the response rate. Analysis of the data was conducted using SmartPLS 3, a software widely recognised for its robustness in structural equation modelling.

3.3 Common Method Bias

Common method bias is a concern in quantitative research, particularly in self-report surveys, as it may arise when data are collected from a single source (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To minimise this bias, this study implemented both procedural and statistical remedies.

In the design of the questionnaires, common method bias was mitigated by ensuring item clarity and guaranteeing respondents' anonymity to minimise response bias due to social desirability. Further, items were randomised to eliminate the respondent's tendencies toward pattern recognition that would serve as a guide in their answering. Statistical controls were applied after the data collection. Harman's single-factor test was performed using exploratory factor analysis, in which all items were loaded onto a single factor. No single factor explained the majority of variance; hence, the effect of common method bias is not serious.

Moreover, in the context of PLS-SEM, a full collinearity test was performed as an added diagnostic tool proposed by Kock (2015). The test checked for both vertical and lateral collinearity; the VIF values were below the critical threshold of 3.3. The results thus confirmed that the dataset did not contain significant common method bias and, therefore, robust and unbiased model estimation was possible. It utilised a measurement and structural model in analysing the data. Measurement invariance was ensured through Cronbach's Alpha and Composite Reliability, while convergent validity was checked with the Average Variance Extracted.

4. ANALYSIS AND FINDINGS

4.1 Profile of the Respondents

Table 1 describes the demographic profile of respondents selected for this study. Out of the 345 valid responses analysed, the majority had a male representation of 57%, while females constituted 43%. The distribution of respondents across different age groups was as follows: 26% fell within the 18-29 years age bracket, 43% between 30 and 39 years of age, and 25% between 40 and 49 years. From an educational qualification perspective, it emerged that 60% were graduates, 05% were postgraduates, and 25% were other professional or diploma qualifications.

The individual family monthly income levels fell between Rs. 50,000 and Rs. 100,000 for 40% of the respondents, while 51% of the sample respondents had a family income of more than Rs. 100,000. The sectors of employment were also quite diversified, comprising private sector employees at 34%, government employees at 51%, and entrepreneurs/self-employed individuals at 15%. Bancassurance awareness levels indicated that 60% were aware of such products, but only 26% had actually purchased a bancassurance product. This profile presents the socio-economic and professional background of the target population, thereby providing a contextual basis for subsequent analyses.

Table 2: Demographic Information of the Sample Respondents

Demographics		Number of Respondents (N = 345)	Percentage (%)
Gender	Male	197	57
	Female	148	43
Age	18-29 years	90	26
	30-39 years	148	43
	40-49 years	86	25
	50-59 years	21	6
Ethnicity	Sinhala	276	80
	Tamil	48	14
	Muslim	21	6
Civil status	Single	72	21
	Married	262	76
	Divorced	10	3
Educational background	Secondary school certificate	35	10
	Diploma/technical school certificate	86	25
	Bachelor degree or equivalent	207	60
	Master's degree	17	5
Income	Below Rs. 30,000	7	2

	Rs. 31,000–Rs. 50,000	24	7
	Rs. 51,000–Rs. 74,000	41	12
	Rs. 75,000–Rs. 100,000	97	28
	Rs. 81,000–Rs. 99,000	52	15
	Rs. 100,000–Rs. 150,000	66	19
	Above Rs. 151,000	58	17
Occupation status			
	Government	176	51
	Private	117	34
	Self-employee	52	15
Living places			
	Urban	121	35
	Semi-urban	190	55
	Rural	34	10
Bancassurance awareness			
	Aware	207	60
	not aware	138	40
Purchased any Bancassurance			
	yes	104	30
	no	241	70

Source: Author constructed based on Survey Data

4.2 Measurement Model Assessment

Based on the analysis results, the researcher established the validity and robustness of the measurement model through three key performance indices. All factor loadings were above 0.7, which provided the initial criterion for setting the threshold, and both composite reliability and Cronbach's Alpha were above 0.7 for all constructs in the model. Also, the standardised factor loadings were acceptable and the average variance extracted (AVE) values were greater than 0.5. These results are presented in Table 2 and correspond to the established criteria of convergent validity, indicating the reliability of the measurement model. These results are in line with the methodological recommendations provided by J. F. J. Hair, Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2014).

Table 3: Construct Reliability and Validity

Construct	Item	Weights / Loadings	Cronbach's Alpha	Composite Reliability (CR) ^b	Average Variance Extracted (AVE) ^a	VIF ^c
Perceived Usefulness (PU)	PU1	0.754	0.938	0.960	0.889	1.304
	PU2	0.844				1.519
	PU3	0.739				1.285

Perceived Ease of Use (PEU)	PEU1	0.879	0.864	0.908	0.713	1.469
	PEU2	0.890				1.469
Trust in Banks (TB)	TB1	0.718	0.850	0.894	0.688	1.256
	TB2	0.705				1.291
	TB3	0.785				1.122
Distrust in Insurance (DIC)	DIC1	0.879	0.888	0.923	0.750	1.801
	DIC2	0.864				1.830
	DIC3	0.669				1.227
Attitudes Toward Bancassurance (ATB)	ATB1	0.704	0.850	0.894	0.688	1.134
	ATB2	0.805				1.357
	ATB3	0.738				1.282
Purchase Intention (PI)	PI1	0.674	0.750	0.837	0.565	1.172
	PI2	0.823				1.366
	PI3	0.770				1.271
Subjective Norms	SN1	0.786	0.618	0.794	0.564	1.250
	SN2	0.791				1.352
	SN3	0.771				1.167
Perceived Behavioural Control	PBC2	0.838	0.696	0.832	0.712	1.220
	PBC3	0.850				1.220

Notes: ^a Average variance extracted (AVE) = (summation of the square of the factor loadings)/[(summation of the square of the factor loadings) + (summation of the error Variances)]; ^b Composite reliability (CR) = (square of the summation of the factor loadings)/[(square of the summation of the factor loadings) + (square of the summation of the error variances)]; ^c VIF— variance inflation factor

Source: Author-constructed based on survey data

The researcher evaluated the model's discriminant validity using two complementary methods. First, applying the Fornell-Larcker test, which checks whether each construct is truly distinct from the others. This test was successful, as the square root of each construct's AVE was larger than its correlations with other variables. Second, checked the cross-loadings to verify that the indicators were measuring what they were supposed to measure. This analysis showed that each indicator had a stronger relationship with its intended construct than with any other construct in the model. Tables 3 and 4 present these results in detail, demonstrating that our model meets both criteria for discriminant validity.

Table 4. Discriminant validity: Fornell–Larcker criterion.

Construct	ATB	DIC	PBC	PEU	PU	PI	SN	TB
Attitude towards Bancassurance (ATB)	0.750							
Distrust in Insurance Companies (DIC)	0.228	0.810						
Perceived Behavioural Control (PBC)	0.215	0.105	0.844					
Perceived Ease of Use (PEU)	0.382	0.424	0.153	0.885				

Perceived Usefulness (PU)	0.675	0.267	0.140	0.273	0.780			
Purchase Intention (PI)	0.788	0.110	0.348	0.322	0.536	0.758		
Subjective Norms (SN)	0.301	0.352	0.217	0.363	0.221	0.480	0.751	
Trust in Banks (TB)	0.548	0.285	0.116	0.274	0.344	0.446	0.366	0.737

Notes: Values in the diagonal bolded are the square root of AVE, while the off-diagonals are correlations.

Source: Author-constructed based on survey data

Table 5. Discriminant validity–loading and cross-loading criterion.

Latent Construct	Item	ATB	DIC	PBC	PEU	PU	PI	SN	TB
Attitude towards Bancassurance (ATB)	ATB1	0.704	0.060	0.185	0.275	0.555	0.573	0.125	0.393
	ATB2	0.805	0.243	0.108	0.322	0.489	0.647	0.338	0.421
	ATB3	0.738	0.212	0.195	0.260	0.473	0.548	0.211	0.419
Distrust in Insurance Companies (DIC)	DIC1	0.215	0.879	0.094	0.347	0.252	0.116	0.314	0.158
	DIC2	0.188	0.864	0.143	0.314	0.201	0.111	0.259	0.215
	DIC3	0.141	0.669	-0.004	0.393	0.193	0.023	0.288	0.374
Perceived Behavioural Control (PBC)	PBC2	0.154	0.119	0.838	0.128	0.139	0.288	0.208	0.058
	PBC3	0.208	0.058	0.850	0.130	0.097	0.298	0.158	0.138
Perceived Ease of Use (PEU)	PEU1	0.331	0.378	0.047	0.879	0.237	0.285	0.359	0.270
	PEU2	0.345	0.373	0.220	0.890	0.245	0.285	0.286	0.216
Purchase Intention (PI)	PI1	0.544	-0.031	0.235	0.167	0.411	0.674	0.219	0.340
	PI2	0.652	0.127	0.205	0.265	0.391	0.823	0.453	0.345
	PI3	0.593	0.134	0.353	0.290	0.423	0.770	0.394	0.335
Perceived Usefulness (PU)	PU1	0.515	0.135	0.145	0.211	0.754	0.428	0.125	0.320
	PU2	0.565	0.265	0.032	0.255	0.844	0.442	0.202	0.249
	PU3	0.498	0.222	0.160	0.167	0.739	0.382	0.188	0.240
Subjective Norms (SN)	SN1	0.152	0.185	0.089	0.314	0.127	0.291	0.786	0.340
	SN2	0.207	0.205	0.167	0.244	0.132	0.356	0.791	0.242
	SN3	0.297	0.373	0.212	0.272	0.224	0.417	0.771	0.260
Trust in Banks (TB)	TB1	0.367	0.028	0.140	0.210	0.247	0.350	0.217	0.718
	TB2	0.306	0.061	-0.001	0.089	0.097	0.293	0.288	0.705
	TB3	0.500	0.439	0.100	0.270	0.360	0.341	0.303	0.785

Note: Bolded values show that an indicator's loading with its own construct are in all cases higher than all of its cross-loading with other constructs' loadings.

Source: Author-constructed based on survey data

4.3 Structural Model Results

After the measurement model was validated, the researcher checked the structural model by strictly following the well-established stepwise analysis procedures for the PLS-

SEM model assessment (J. F. J. Hair, Hult, G. T. M., Ringle, C. M., Sarstedt, M., 2014), by checking the coefficient of determination (R^2) of the endogenous constructs; path coefficients; statistical significance; and predictive relevance by using Q^2 . At the outset, it is essential to note that all VIF values were below the critical threshold of 5 for each construct, indicating no collinearity issues (see Table 2).

Path Coefficient Analysis

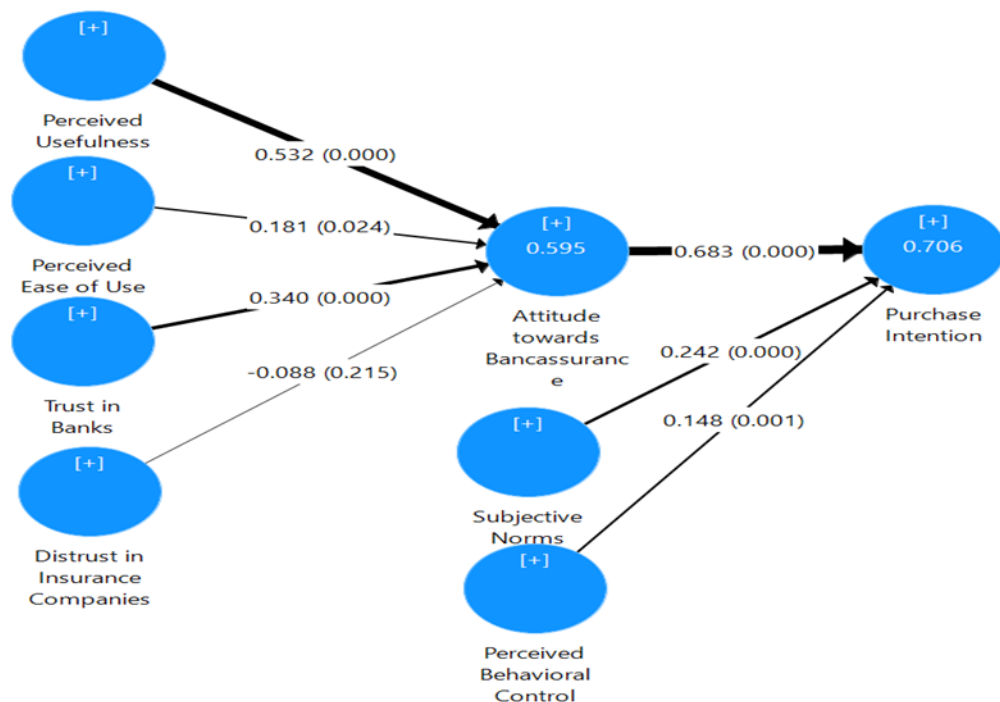


Figure 2. The structural model with path coefficients and p-values (highlighted relative values of the paths).

The PLS-SEM algorithm was performed to estimate path coefficients, followed by bootstrapping with 5000 resamples to assess statistical significance. The results revealed several significant relationships. Figure 2 illustrates the relative value of the highlighted path coefficients and p-values for the structural model.

Table 5 shows the estimates for the path coefficients obtained by performing the PLS-SEM algorithm to assess the hypothesised relationships between constructs. The significance of the path coefficient was examined by performing bootstrapping with 5,000 resamples and the no sign change option.

Table 06: Results of hypothesis testing

Hypo	Relationship	Std. Beta	Std. Error	t- value	P Values	95% Bias- Corrected CI		Decision
						Lower	Upper	
H1	Usefulness → Attitude	0.531	0.085	6.239	0.000*	0.368	0.703	Supported
H2	Ease of Use → Attitude	0.176	0.080	2.264	0.024*	0.015	0.334	Supported
H3	Trust → Attitude	0.342	0.074	4.615	0.000*	0.196	0.486	Supported
H4	Distrust → Attitude	-0.077	0.071	1.240	0.215	-0.222	0.058	Rejected
H5	Attitude → Intention	0.682	0.068	10.030	0.000*	0.544	0.812	Supported
H6	Subjective Norms → Intention	0.244	0.062	3.871	0.000*	0.127	0.370	Supported
H7	Behavioural Control → Intention	0.150	0.044	3.406	0.001*	0.069	0.238	Supported
H5a	Usefulness → Attitude → Intention	0.362	0.070	5.229	0.000*	0.238	0.511	Supported
H5b	Ease of Use → Attitude → Intention	0.119	0.054	2.287	0.022*	0.011	0.226	Supported
H5c	Trust → Attitude → Intention	0.233	0.057	4.118	0.000*	0.130	0.348	Supported
H5d	Distrust → Attitude → Intention	-0.052	0.049	1.228	0.220	-0.152	0.041	Rejected

* $P < 0.05$. Note: where, attitude = Attitude towards Bancassurance, Purchase Intention = intention to purchase Bancassurance, Distrust = Distrust for Insurance Companies, Behavioural Control = Perceived Behavioural Control, Ease of Use = Perceived Ease of Use, trust = Trust in Banks, Usefulness = Perceived Usefulness, Bias Corrected CI = Bias-corrected confidence interval, Hypo = Hypothesis

Source: Author constructed based on survey data

As shown in Table 5, the analysis results revealed several significant relationships in the bancassurance adoption model. When assessing the direct effects, Perceived Usefulness emerged as the strongest predictor of Attitude toward Bancassurance ($\beta = 0.531$, $p < 0.01$), followed by Trust in Banks ($\beta = 0.342$, $p < 0.01$) and Perceived Ease of Use ($\beta = 0.176$, $p < 0.05$). However, distrust of insurance companies showed no significant relationship with attitude ($\beta = -0.077$, $p > 0.05$), and the impact is also negative.

Regarding purchase intention determinants, Attitude toward Bancassurance demonstrated the strongest direct effect ($\beta = 0.682$, $p < 0.01$). Additionally, significant predictors included Subjective Norms ($\beta = 0.244$, $p < 0.01$) and Perceived Behavioural Control ($\beta = 0.150$, $p < 0.01$), both of which showed positive relationships with purchase intention.

The analysis also revealed significant mediating effects through Attitude towards Bancassurance. The indirect impact of Perceived Usefulness on Purchase Intention through Attitude was substantial ($\beta = 0.362$, $p < 0.01$, $BC_{0.95} CI: 0.238, 0.511$). Similarly, both Trust in

Banks ($\beta = 0.233$, $p < 0.01$, $BC_{0.95}$ CI: 0.130, 0.348) and Perceived Ease of Use ($\beta = 0.119$, $p < 0.05$, $BC_{0.95}$ CI: 0.011, 0.226) demonstrated significant indirect effects on Purchase Intention through Attitude. However, the mediating impact of attitude on the relationship between Distrust and Purchase Intention failed to reach statistical significance ($\beta = -0.052$, $p > 0.05$, $BC_{0.95}$ CI: -0.152, 0.041), and the impact is also negative.

Based on these findings, hypotheses H1, H2, H3, H5, H6, H7, H5a, H5b, and H5c were supported, while H4 and H5d were rejected. The significance of the mediating effects was confirmed through bias-corrected confidence intervals, which did not include zero for all significant pathways, providing robust support for the mediating role of attitude in the model, except for the Distrust pathway.

To assess the in-sample model fit, the researcher evaluated the R^2 values of the endogenous latent variables in the path model. As shown in Table 6, the model demonstrated substantial explanatory power for Purchase Intention, with an adjusted R^2 value of 0.700, indicating that the predictors collectively explained 70% of the variance in consumers' intention to purchase bancassurance products. Also, for Attitude towards Bancassurance, the adjusted R^2 value of 0.584 suggests that the model's predictors accounted for 58.4% of the variance in consumers' attitudes, representing a moderate level of explanatory power according to the benchmarks established by J. F. J. Hair, Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2014).

Table 7: Results of R^2 and Q^2 .

Endogenous Latent Construct	Adjusted R^2	Q^2
Attitude towards Bancassurance	0.584	0.312
Purchase Intention	0.700	0.396

Note: Decision criteria in assessing predictive relevance (Q^2); value effect size 0.02 = small, 0.15 = medium, 0.35 = large. Similarly, R^2 values of 0.75, 0.50, and 0.25 are considered substantial, moderate, and weak, respectively.

Source: Author constructed based on survey data

In addition to R^2 values as a criterion of predictive accuracy, the researcher assessed the predictive power of the model using the predictive relevance, as measured by Stone-Geisser's Q^2 value, and out-of-sample predictive power, as measured with PLSpredict. The blindfolding procedure, as proposed by J. F. J. Hair, Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2014) and Morard and Simonin (2016), should only be applied to endogenous constructs that have a reflective measurement (multiple items or single items). As shown in Table 06, the Q^2 value for Purchase Intention (0.396) exceeded the threshold for a large effect size (0.35), demonstrating strong predictive relevance. Similarly, the attitude towards Bancassurance showed medium to large predictive relevance, with a Q^2 value of 0.312. These Q^2 values, being substantially above zero, confirm the model's capability to accurately predict both attitudinal formation and behavioural intentions in the bancassurance context (J. F. Hair, Risher, Sarstedt, & Ringle, 2019).

The strength of these predictive metrics (both R^2 and Q^2) aligns with or exceeds those reported in comparable technology adoption and financial services studies (Mpaata, Mindra, & Oula, 2020), suggesting that the model effectively captures the key determinants of bancassurance adoption. The substantial R^2 values, particularly for Purchase Intention, indicate that the selected constructs comprehensively represent the significant factors influencing consumers' decisions to adopt bancassurance.

After assessing the predictive power of the mode, the researcher analysed the total impact of the construct, which is the sum of directly and indirectly measured effects, utilising the importance-performance map analysis (IPMA). As noted by Rigdon (2016), IPMA fixes the total effects of the structural model on a selected construct by averaging the latent variable scores of the construct's antecedent. The result of IPMA concerning the purchase intention done in this study is illustrated in Figure 3 below; accordingly, Attitude toward Bancassurance contributes to the total effect with the highest rating of average importance on purchase intention (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014).

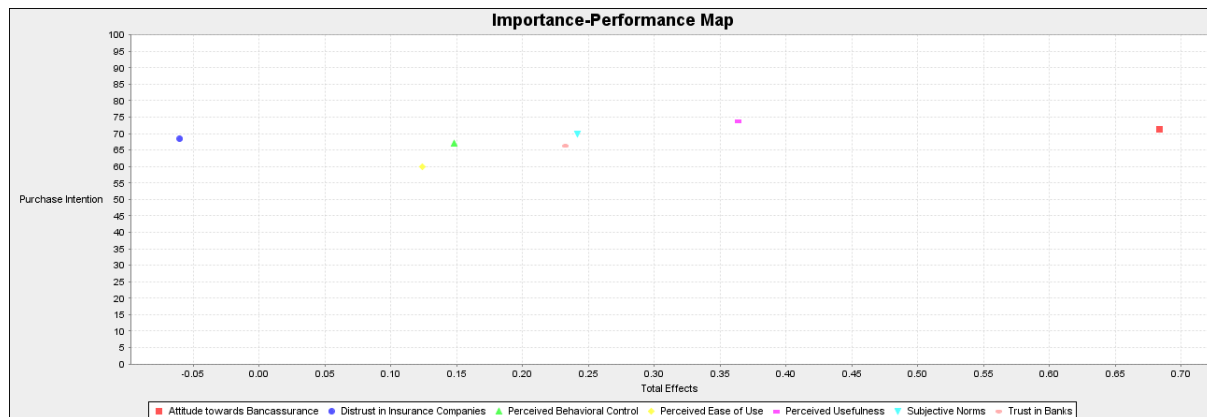


Figure 3. Importance- performance map analysis (IPMA) (standardised effects).

4.4. Discussion

The findings of this study demonstrate how well-established theoretical frameworks, such as the Technology Acceptance Model and the Theory of Planned Behaviour, translate to the unique context of Sri Lankan bancassurance services. Further, these results reveal a clear story about what drives consumers to grip bancassurance products in emerging markets. Particularly interesting is how perceived usefulness and ease of use shape consumer attitudes; when people see bancassurance products as both useful and straightforward to understand, they're significantly more likely to view them favourably. These findings align with McKechnie, Doherty, Winklhofer, and Ennew (2006) observations about the crucial role of perceived convenience in financial service adoption.

Trust emerged as a particularly fascinating aspect of our findings. The strong relationship between trust in banks and positive attitudes towards bancassurance products

reinforces what Beckett et al. (2000) discovered: that trust is the cornerstone of financial relationships. This makes intuitive sense as noted by Lympieropoulos et al. (2013), who conclude that financial services involve significant long-term commitments and personal risk, making trust paramount in consumers' decision-making processes. This conclusion further supports with Harrison (2003) suggestion that trust becomes even more critical in emerging markets where financial literacy and institutional safeguards may still be developing.

The importance of perceived usefulness in this study's findings aligns with the findings of Roy, Balaji, Kesharwani, and Sekhon (2016) in their research on digital banking adoption. According to their suggestions, consumers are primarily motivated by practical benefits and improved accessibility to services. This suggests that bancassurance providers in Sri Lanka might benefit from emphasising the concrete advantages and convenience their products offer, rather than just focusing on traditional sales approaches.

Contrary to the initial hypothesis, the empirical analysis revealed a negative, even though non-significant, relationship between distrust in insurance companies and attitudes toward Bancassurance. This finding suggests that consumer disbelief toward traditional insurance providers might extend to all insurance-related services, regardless of the distribution channel. The result could also indicate that the relationship is more complex than initially theorised, potentially involving unmeasured mediating variables such as overall financial service trust or consumer awareness of bancassurance products. Future research may benefit from examining these potential mediating factors and considering a larger sample size to gain a deeper understanding of this relationship within Sri Lanka's socio-cultural context.

The substantial explanatory power of the model tested in this study suggests that robust empirical evidence was provided to support the underlying theoretical model and its applicability in explaining bancassurance adoption behaviour. The tested research model explains up to 70% of the variance in consumers' purchase intentions, thus encompassing and comprehensively including all the relatively significant factors influencing Bancassurance adoption decisions. With such high explanatory power combined with positive indicators of the predictive relevance ($Q^2 > 0.31$), it may be justified to state that the model identifies the key drivers affecting consumer bancassurance adoption decisions. In light of J. F. Hair et al. (2019), it can be mentioned that such high criteria for prediction can be adequately described as meaningful rather than merely significant. Consequently, it surpasses most of the proximate similar studies on the uptake of financial services, as identified by Mpaata et al. (2020), and strengthens the domains of validity and reliability in capturing consumer behaviours within the bancassurance segment. These findings provide stakeholders with a reliable framework for understanding and influencing consumer adoption of bancassurance products, offering theoretical contributions and practical insights for the industry.

5. THEORETICAL AND PRACTICAL CONTRIBUTION

This study makes significant theoretical contributions by validating and extending the integrated application of TAM and TPB frameworks in the bancassurance context. The findings reveal the robust explanatory power of our model, accounting for 70% of the variance in purchase intentions and 58.4% in attitudes, exceeding typical thresholds in behavioural research. Particularly noteworthy is how our results align with and extend Ajzen (1991) theoretical foundations by demonstrating the crucial mediating role of attitudes in bancassurance adoption. The significant influence of perceived usefulness and perceived ease of use supports Davis's technology acceptance principles. At the same time, the substantial impact of trust in banks reinforces Beckett et al. (2000) emphasis on institutional credibility in financial services adoption. Interestingly, our finding that distrust in insurance companies has minimal impact contrasts with previous research by Jiang (2018) and Benamati and Serva (2010), suggesting that bank credibility may serve as a trust bridge in emerging markets, thereby extending existing theoretical frameworks with this nuanced understanding of institutional trust dynamics.

The findings of this study suggest significant actionable practices for bancassurance stakeholders. The model's strong predictive power, particularly in terms of attitude formation and purchase intention, provides a clear strategic direction for industry practitioners. In line with Lymeropoulos et al. (2013), banks should focus more on communication processes related to trust-building activities and the use of their credibility as a primary advantage to promote bancassurance adoption. The significant role of perceived usefulness and ease of use suggests that providers should focus on streamlining product processes and communicating tangible benefits. Further, the prominent effect of subjective norms suggests that community-based marketing strategies and peer endorsements can promote adoption in emerging market settings where social determinants are important in financial decision-making.

6. CONCLUSIONS

Financial inclusion and risk management remain critical challenges in developing economies, particularly in markets like Sri Lanka. The integration of banking and insurance services through Bancassurance presents a promising pathway to enhance financial service accessibility and adoption (Adkisson, 2019; O.Gonulal, Goulder, & Lester, 2012; Śliwiński, Dropia, & Duczowski, 2021). However, consumer decision-making in financial services is complex, influenced by various psychological, social, and institutional factors that often deviate from rational economic models (Adkisson, 2019; Kahneman & Tversky, 1979). This study reveals that trust in banks, perceived usefulness, and ease of use significantly influence consumers' attitudes and purchase intentions toward bancassurance products, with the model explaining 70% of the variance in adoption intentions.

Understanding these adoption dynamics is vital from both theoretical and practical implementation perspectives. This study's findings reveal that, although consumers conventionally view insurance products with scepticism, the bancassurance model manages to break through those barriers by drawing on pre-existing confidence in banking institutions. The strong influence of subjective norms and perceived behavioural control further underscores how social and institutional contexts shape financial decision-making. Further, the findings of this study suggest that mass education programs and trust-building programs, especially if provided through the trusted banking channels, will effectively promote bancassurance adoption.

For practitioners and policymakers, this study highlights the need to develop integrated approaches that incorporate trust-building, educational initiatives, and user-friendly product designs. Financial institutions should focus on building value propositions while leveraging their existing credibility to instill confidence among consumers. Similarly, regulatory frameworks should facilitate open collaboration between banks and insurers to create an environment that enables growth in the bancassurance market.

Although this study offers an insightful understanding of the dynamics of bancassurance adoption, potential limitations should be acknowledged. This cross-sectional, single-market study could be complemented by future longitudinal studies on changes in attitudes and adoption patterns over time. Finally, comparative studies across different emerging markets may also shed light on how cultural and institutional factors differently influence the adoption of Bancassurance. Despite these limitations, the findings of this study provide a significant basis for understanding and improving bancassurance uptake in emerging markets, which in turn informs broader objectives of financial inclusion and the dynamics of developing markets.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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