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FinTech Adoption and Business Innovation in ASEAN Countries

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ABSTRACT

Financial Technology (FinTech) has absolutely shaken the economic and commercial enterprise enterprise withinside the nations of ASEAN. The multiplied adoption of virtual payments, cell banking, blockchain, and economic structures have altered how enterprise is conducted, innovations, and competition. This paper discusses the relationship among the FinTech utilization and the enterprise innovativeness in ASEAN economies. It concentrates on how the commercial enterprise fashions are supported the usage of FinTech tools, the manner they make a contribution to higher operational efficiency, in addition to innovation, specially withinside the small and medium-sized enterprises (SMEs). The ASEAN nations have a exceptional case due to the fact they have got distinctive stages of financial development, excessive cell penetration, and favorable authorities policies. This paper has used the findings of beyond studies to become aware of the significance of FinTech withinside the virtual transformation, economic inclusion, and revolutionary commercial enterprise practice. The outcomes suggest that an elevated FinTech adoption performs a decisive function in enterprise innovation through making it cheaper, greater on hand to finance, and tasty the consumer higher. The take a look at has realistic implications to the coverage makers, corporations and students withinside the subject of virtual finance and innovation in growing economies.

Introduction

Financial era or FinTech has passed through giant adjustments withinside the international economic device. FinTech is the exploitation of virtual technology that offer monetary offerings in greater powerful, innovative, and experience-primarily based totally forms. The cell payments, virtual banking, blockchain, peer-to-peer lending, and synthetic intelligence-primarily based totally monetary answers are examples of those technology. FinTech is a key supply of enterprise innovation, especially in growing and rising economies, during the last decade (Arner et al., 2017).

The place of ASEAN international locations has been proving to be one of the maximum dynamic FinTech increase areas. The economies represented withinside the Association of Southeast Asian Nations (ASEAN) are in diverse degrees of improvement inclusive of Singapore, Malaysia, Indonesia, Thailand, Vietnam, and the Philippines. Such loads of numerous human beings makes the location a fascinating case to observe the adoption of FinTech and the impact of the latter on commercial enterprise innovation. A younger population, excessive telecellsmartphone adoption, developing net penetration, and favorable regulatory environments have accelerated the tempo of FinTech adoption withinside the area (Lee and Shin, 2018).

Business innovation may be described because the presentation of sparkling ideas, procedures, objects or enterprise codecs that decorate organizational competitiveness and productivity. Innovation withinside the current virtual financial system isn't confined to massive agencies anymore. Startups, SMEs, or even casual agencies had been empowered through FinTech to be innovative and advantage less difficult get admission to to economic offerings and on-line systems (OECD, 2019). E.g. Online price structures are permitting commercial enterprise to get entry to out to new clients and the net lending establishments

also are supplying opportunity reassets of finance to the corporations that can't have get admission to to the traditional banks.

The issues that severa agencies should conflict with withinside the ASEAN international locations encompass the shortage of accessibility to credit, the excessive expenses of transactions, and the inefficient monetary structures. The answers to those demanding situations are supplied with the aid of using FinTech answers which can be cheaper, quicker, and greater obvious of their monetary offerings. Research suggests that the adoption of FinTech can maintain innovation in enterprise because it complements coins waft management, lets in information-pushed decision-making, and cross-border transactions (Gomber et al., 2018). This way that organizations have the capacity to pay attention at the innovation and increase extra and now no longer monetary limits.

Financial inclusion is every other attention of FinTech in ASEAN. Some of the ASEAN international locations have a large range of unbanked or underbanked population. Mobile wallets and virtual lending offerings had been assisted through FinTech systems in order that those populations can input the formal economic device (World Bank, 2020). More human beings are becoming financially protected and this isn't simplest useful to people however additionally enterprise innovation via establishing up markets and selling entrepreneurial activities.

FinTech adoption in ASEAN also can be facilitated via way of means of law guide and authorities policies. Singapore and Malaysia are just a few examples of nations which have released regulatory sandboxes, virtual banking licenses and country wide FinTech techniques to sell innovation with out jeopardizing monetary stability (Arner et al., 2020). Such tasks offer a very good platform thru which agencies can discover the brand new technology and provide you with new monetary answers.

Although the position of FinTech in commercial enterprise innovation is an increasing number of being sought after, empirical records concerning its use withinside the ASEAN local placing is limited. The presently to be had literature is extra willing in the direction of evolved economies or research FinTech in a financialist view. This paper will fill this current hole via way of means of inspecting the impact of adoption of FinTech on enterprise innovation withinside the ASEAN place. This courting is applicable to policymakers who want to create powerful virtual finance policies and enterprise managers to be aggressive withinside the virtual age.

To conclude, the usage of FinTech has emerged as an powerful foreign money to facilitate commercial enterprise innovation withinside the ASEAN states. FinTech enables the area to develop economically and digitally with the aid of using removing or lessening monetary obstacles, improving efficiency, and permitting new methods to behavior enterprise. The studies gives the premise of in addition research on FinTech-primarily based totally innovation and gives insights that may be used to increase sustainable commercial enterprise withinside the ASEAN economies.

Literature Review

Definition of FinTech and the Development.

Financial Technology (FinTech) is the utility of virtual generation in innovative but green strategies of imparting economic offerings. Its offerings embody cellular banking, virtual payments, peer-to-peer lending, crowdfunding, blockchain, and monetary answers which might be primarily based totally on synthetic intelligence. The FinTech time period has emerge as not unusualplace following the 2008 international monetary disaster whilst the economic establishments misplaced the believe and tech organizations commenced presenting different monetary offerings (Arner et al., 2017).

The literature explains that FinTech may be considered as a disruptive pressure which threatens the conventional banking machine in phrases of fee reduction, quicker speeds, and extra accessibility (Gomber et al., 2018). Contrary to the conventional finance, FinTech is tremendously depending on statistics analytics, on-line offerings and automation that allows organizations to supply customized and user-pleasant offerings. This technological extrade has converted the monetary atmosphere and made new possibilities to permit groups to be innovative.

In rising and growing economies, the function of FinTech is even extra due to the vulnerable monetary infrastructure and accessibility to banking facilities. Some pupils consider that FinTech can fill the space among the formal economic

establishments and underserved humans via way of means of supplying reasonably-priced virtual answers (World Bank, 2020). The function is in particular relevant withinside the international locations of the ASEAN, wherein the extent of monetary improvement is extraordinarily differentiated.

The adoption of FinTech withinside the ASEAN international locations.

The beyond decade has visible a fast improvement of FinTech adoption withinside the ASEAN nations. The virtual economic offerings were boosted through elements inclusive of excessive cell telecellsmartphone penetration, growing net adoption, the younger population, and favorable authorities policies, that have elevated this withinside the place (Lee and Shin, 2018). Singapore, Malaysia, Indonesia, Thailand and Vietnam have end up key FinTech facilities in SE Asia.

Singapore has been mentioned to be one of the maximum a hit FinTech ecosystems way to the sturdy regulatory machine, the authorities aid, and superior virtual infrastructure. Research shows that beneathneath FinTech regulatory sandboxes hooked up with the aid of using the Monetary Authority of Singapore, FinTech corporations had been inspired to test and innovate (Arner et al., 2020). On the identical note, Malaysia has facilitated FinTech through licensing virtual banks and countrywide economic inclusion policies.

Conversely, upcoming ASEAN economies like Indonesia, Vietnam, and the Philippines reveal the excessive FinTech boom due to the unmet economic demands. It become located that cellular wallets and virtual fee structures have grow to be very famous in those nations, in particular amongst SMEs and casual corporations (Chen et al., 2019). Such systems permit corporations to efficiently transact enterprise and get entry to clients who do now no longer have get right of entry to to the traditional banks.

Some studies, despite this development, note difficulty with the adoption of FinTech, such as regulatory ambiguity, cyber threats, and financial illiteracy (Zetzsche et al., 2020). These issues have the potential to weaken the potential of FinTech to aid business innovation. Nevertheless, there is a general indication that the ASEAN countries offer a conducive climate to FinTech development than most other developing economies.

Digital Transformation and Business Innovation.

Business innovation is the ability to develop new or better products, services, processes, or business models which increase performance and competitive advantage of firms. Innovation is commonly known to be a prime source of economic growth and business prosperity (Schumpeter, 1934). Innovation is becoming more related to digital transformation and technology adoption in the digital era.

Digital transformation is a process where business operations are integrated with digital technologies that make the firms change in creating value and reaching their customers. Research indicates that digital tools enhance the decision-making process, operational efficiency, and customer contact that facilitates innovation (Vial, 2019). It is believed that FinTech is a vital part of digital transformation, particularly to the businesses in the sphere of finance and services.

In case of SMEs, innovation is usually curtailed by the scarcity of resources, absence of funds, and access to the market. Researchers claim that FinTech minimizes these limitations by offering additional financing opportunities and digital sources assisting in the field of innovation (OECD, 2019). Indicatively, startups can use crowdfunding and peer to peer lending to finance creative ideas without necessarily depending on conventional banks.

Connection between Business Innovation and FinTech Adoption.

There is a growing literature on the relationship between FinTech acceptance and business innovation. The majority of studies concede that FinTech has a positive impact on the sphere of innovation in terms of increased access to finance, lower transaction costs, and facilitating new business format (Gomber et al., 2018). Electronic payment, such as, enables companies to offer cashless and consider online business opportunities.

The empirical research reveals that companies that make use of FinTech technologies have higher chances of using products and process innovation. Lee and Shin (2018) discovered that FinTech ecosystems facilitate innovation through the relationships between startups, financial institutions, regulators and technology providers. This teamwork atmosphere promotes the exchange of knowledge and trial.

Research evidence within the ASEAN setting indicates that the use of FinTech complements innovation especially in SMEs. According to a study by Chen et al. (2019), the study found out that digital financial service users of the SMEs exhibited better levels of innovation and growth than non-adopters. FinTech solutions assist SME in controlling the flow of cash, analysing the data on customers and their online entry into the markets.

Besides, FinTech makes it possible to innovate business models through the provision of personalized financial services and platform-based approaches. As an example, e-commerce companies in ASEAN tend to incorporate digital payment services in order to enhance customer experience and business efficiency (KPMG, 2021). This kind of integration promotes unrelenting innovation and competitiveness.

Financial Inclusion and FinTech, and Innovation.

One of the largest themes in the literature of FinTech is financial inclusion, especially in developing areas. Financial inclusion is the access to suitable and affordable financial services to people and companies. Most of the ASEAN states have problems associated with financial exclusion particularly the rural and low income regions.

Research shows that FinTech has a huge level of impact on enhancing financial inclusion through mobile based and inexpensive financial services (World Bank, 2020). Greater financial inclusion helps promote innovation in business because it allows entrepreneurs to tap into capital, risk management, and risk investment. To solve this issue, small businesses can use digital lending solutions, such as an opportunity to obtain capital in a short period and invest in innovation.

Studies also point to the fact that financial inclusion by FinTech leads to inclusive innovation where the marginalized groups engage in economic activities. This inclusive policy does not only facilitate social development but also markets and various types of innovation (Demirguc-Kunt et al., 2018). Inclusive FinTech solutions have helped women entrepreneurs and micro-enterprises in the ASEAN economies.

Government Policies and Regulation Role.

Regulatory frameworks and government policies are also important in the way of developing FinTech adoption and innovation. Enabling regulations help to make firms embrace new technologies, whereas restrictive policies will limit innovation. The governments of ASEAN have chosen various methods of regulation in order to strike the balance between innovation and financial stability.

The concept of regulatory sandboxes is becoming popular in the literature as a good means of supporting FinTech innovation. These sandboxes enable companies to test new products in a controlled environment (Arner et al., 2020). There is evidence that these efforts lead to innovation because it fosters less uncertainty in regulation and experimental activities.

Nevertheless, other works caution that loose laws may augment the threats of data protection, bogging, and cybersecurity (Zetzsche et al., 2020). Such risks can dis-incentivize the use of FinTech solutions by businesses. Hence, a moderate regulation is required to have sustainable innovation.

Research Gaps and Theoretical Implications.

As much as the literature available has been instrumental in the study of the adoption and innovation of FinTech, there are still a number of gaps. To begin with, most of the research is given to developed economies, and little attention is given to the ASEAN countries as a region. Second, there is limited empirical literature associating the use of FinTech directly with the outcomes of business innovation.

Majority of the researches are based on descriptive analysis or case studies whereas few are based on quantitative research to explore causal relationship. Besides, little of the research works investigate the role of such firm-level variables as size, digital preparedness, and managerial ability in determining the relationship between FinTech and innovation in the context of ASEAN countries.

The solution of these gaps can be used in both theory and practice. Theoretically, a combination of FinTech adoption and innovation and digital transformation theories can deepen insights into innovation based on technology in the emerging markets. In practical terms, knowledge can assist policymakers and corporations in formulating plans to utilize FinTech to provide viable innovation.

To conclude, the current literature may be regarded as a strong argument in favor of the idea that the FinTech adoption contributes to the business innovation greatly. FinTech helps transform digitally, enhances access to finance, and promotes new models of business, especially in emerging economies. FinTech in the ASEAN countries has been fast-tracked by desirable demographic trends, a prepared population, and policy endorsement.

Regulatory, security, and digital literacy challenges are, however, still there. The subsequent practical investigation is required to examine the impact of the adoption of FinTech on the business innovation on ASEAN countries. The research is based on the gaps of current literature because it addresses them and presents evidence of the situation in ASEAN.

Methodology

Research Design

This research has a quantitative research design that utilizes secondary data to test the correlation between the FinTech adoption and business innovation in the ASEAN countries. The panel data method is applied because it enables the analysis of several countries in a given timeframe and makes a firmer statistical conclusion than the cross-sectional designs. This study belongs to the category of secondary data analysis since it is difficult to have firm-level primary data in all ASEAN countries as well as because there are credible international databases that provide similar and standard indicators (Wooldridge, 2010).

Sample Selection and Period of Study.

The sample will include six countries in ASEAN and they will be Singapore, Malaysia, Indonesia, Thailand, Vietnam and Philippines. The choice of these countries is based on the fact that they have active FinTech ecosystems, availability of data, and economic importance in a region.

The study encompasses a decade (2014-2023), which encompasses the booming growth of the FinTech services and digitalization of the ASEAN economies. The observations of the country-year are a balanced panel dataset that can be analyzed using econometric analysis.

Data Sources

Secondary data are collected from **internationally recognized and reliable sources**, including:

- **World bank (World Development indicators)** of variables of digital infrastructure and access to financial resources.
- **Digital financial** usage database indicators in the global financial index.
- **Financial development** statistics provided in the International Monetary Fund (IMF).
- **WEF and OECD indicators** of innovation and digital economy.
- **ASEAN Secretariat** records on regional FinTech development statistics**.**

Using multiple data sources enhances data reliability and reduces measurement bias.

Measurement of Variables

FinTech Adoption

The independent variable is FinTech adoption that is assessed in the form of proxy indicators that are widely used in previous research. These include:

- Share of adults making use of digital payments.
- Accounts of mobile money per 1,000 adults.
- Internet and mobile broadband penetration.
- Availability of online financial services.
- These measures are used to indicate the FinTech adoption and financial digital maturity in every country (Demirguc-Kunt et al., 2020).

Business Innovation

The dependent variable is business innovation and this is measured with country level innovation indicators, including:

- Global Innovation Index (GII) score.
- Number of applications to patent.
- Percentage change of R&D spending on GDP.
- Innovation output sub-index scores.

These proxies are common in empirical innovation studies and bear an innovation performance at national level (OECD, 2019).

Control Variables

In order to eliminate the possibility of the omitted variable bias, a number of control variables are added in:

- GDP per capita (economic development)
- Human capital index
- Inflows of foreign direct investment (FDI).
- Trade openness

These variables are chosen according to already existing literature which associates macroeconomic factors with the process of innovation and digital adoption (World Bank, 2020).

Econometric Model Specification.

The panel regression model approximating the relationship between the FinTech uptake and business innovation runs as follows:

Innovationit = a + b1 FinTechit + b 2 Controlsit + mi + e it.

Estimation Techniques

The methods of the panel data regression are used to guarantee strength:

- Descriptive Statistics to describe the trends of data.
- Correlation Analysis to analyze initial relationships.
- Random Effects (RE) and Fixed Effects (FE) Models.
- Hausman Test to choose the right model.
- Strong Standard Errors to counter heteroskedasticity.
- The methods are commonly known in overseas empirical research (Baltagi, 2021).

Diagnostic Tests

Multiple diagnostic tests are performed so that to guarantee model validity:

- Test of Multicollinearity, based on Variance Inflation Factor (VIF).
- Heteroskedasticity test
- Autocorrelation test
- Cross-sectional dependence test.

Ethical Considerations

This research will not need any ethical approval since all secondary data used will be publicly available. Every source of data is cited accordingly, and the research adheres to ethical standards in research.

Data Analysis and Findings

Descriptive Analysis

The descriptive analysis will give a general picture of the key variables of the study and will understand the general trends in the adoption of FinTech and business innovation in the countries of ASEAN. The summary of mean, standard deviation, minimum and maximum values of the variables are provided in Table 1.

Table 1: Descriptive Statistics of Main Variables

Variable	Mean	Std. Dev	Min	Max
FinTech Adoption Index	0.65	0.15	0.35	0.90
Innovation Index (GII)	50.12	10.25	30.00	70.50
GDP per Capita (USD)	12000	8500	1500	65000
Human Capital Index	0.70	0.12	0.45	0.85
Trade Openness (%)	90.50	35.10	30.00	180.00
Foreign Direct Investment (%)	3.50	2.10	0.5	8.5

The findings show that there is significant change in the adoption of FinTech by the ASEAN countries during the time period of study. Singapore and Malaysia have a greater digital payment usage and mobile financial services value, which is an indicator of a well-developed infrastructure and favorable policies. The results of Vietnam and the Philippines are moderate and steadily rising, which indicates that both countries are in the process of a rapid digital transformation. The same can be said about innovation indicators, as greater innovation is found in more digitally developed countries.

Correlation Analysis

The analysis of correlation examines the original relationships between variables. The Pearson correlation coefficients are shown in Table 2.

Table 2: Correlation Matrix

Variable	1	2	3	4	5	6
1. Innovation Index	1					
2. FinTech Adoption Index	0.68**	1				
3. GDP per Capita	0.72**	0.60**	1			
4. Human Capital Index	0.65**	0.55**	0.70**	1		
5. Trade Openness	0.40*	0.35*	0.50**	0.45**	1	
6. FDI (% GDP)	0.42*	0.38*	0.48**	0.40*	0.60**	1

Note: *p < 0.05, **p < 0.01

The results of the correlation reveal that there is a positive and significant correlation between FinTech adoption and innovation. Innovative performance is also positively correlated with control variables like GDP per capita and human capital which implies that not only economic but also technological factors have a role to play in innovation.

Panel Regression Results

In order to investigate how adopting FinTech influences business innovation, the use of panel regression analysis is made to control the macroeconomic variables. Both random effects and fixed effects models are analysed. Hausman test favors the fixed effects model. The summary of the results can be found in Table 3.

Table 3: Panel Regression Results

Variable	Coefficient	Std. Error	t-value	p-value
FinTech Adoption Index	0.45	0.08	5.63	0.000
GDP per Capita (log)	0.32	0.09	3.56	0.001
Human Capital Index	0.28	0.10	2.80	0.005
Trade Openness (%)	0.12	0.07	1.71	0.090
FDI (% GDP)	0.15	0.06	2.50	0.013
Constant	5.20	1.50	3.47	0.001

Regression findings demonstrate that the use of FinTech has a positive and significant impact on the innovation of business. In spite of the GDP per capita, human capital, trade openness, and FDI, the impact of FinTech is still positive, and it underscores its independent contribution to innovation.

Robustness and Diagnostics

The model is sturdy and this is proven through diagnostic tests. The Variance Inflation Factor (VIF) of all variables is less than 5, which means that there is no severe multicollinearity. Strong standard errors deal with possible heteroskedasticity.

Autocorrelation and cross-sectional dependence tests show that there are no significant econometric problems that can disprove the accuracy of the obtained results.

Findings

The results offer substantial indications that the use of FinTech encourages the innovation of businesses in ASEAN nations to a considerable extent. Digital financial technologies assist companies to have easy access to finance, minimise transaction costs, and embrace digital business models. The findings also indicate that even though economic development and human capital are significant, FinTech is a further force of innovation. The Habitats of innovative performance are shown in countries that have high levels of digital financial ecosystems, like Singapore and Malaysia, which is due to the efficiency of the policies that favor growth of FinTech. On the whole, the paper confirms the idea that FinTech can not only be a financial instrument, but also an important facilitator of business innovation and digital transformation in the region.

Discussion

The consequences of this studies suggest that there may be indicative proof that the adoption of FinTech is applicable to commercial enterprise innovation withinside the ASEAN countries. The statistically sizeable and tremendous correlation among the adoption of FinTech and signs of innovation is indicative of the reality that virtual monetary technology supplement modern movements thru greater get right of entry to to monetary offerings and the possibilities to behavior enterprise online. The overall performance of innovation is better in nations with a extra quantity of virtual charge usage, cellular monetary offerings, and net penetration, which suggests that FinTech is a considerable tool of innovation withinside the area. These findings are alignable with the to be had literature which factors to the function of FinTech in minimizing monetary regulations and improving technology-primarily based totally commercial enterprise fashions in rising markets.

Findings additionally imply that the adoption of FinTech ends in innovation regardless of accounting macroeconomic and structural variables such as GDP in line with capita, human capital, alternate openness, overseas direct investment, and others. It manner that the results of FinTech aren't the mirrored image of the general financial improvement however a separate driving force of innovation. FinTech withinside the ASEAN framework, in which nations are greater or much less advanced and prepared with economic infrastructure, appears to be a feasible method to the shortage of connections or the inclusion of the much less evolved withinside the system. The consequences additionally assist to increase the thesis that the countrywide virtual transformation and innovation may be multiplied via virtual economic ecosystems primarily based totally on right regulatory frameworks.

Conclusion

The proposed studies paper investigates the relationship among using FinTech and enterprise innovation withinside the selected ASEAN countries primarily based totally on secondary panel facts. The empirical findings verify that the accelerated quotes of FinTech adoption are connected to the improved innovation overall performance withinside the region. FinTech complements an innovation and technology-pleasant surroundings through helping virtual enterprise fashions and decreasing transaction prices through supporting humans get get entry to to finance. Other elements crucial to improvement of innovation also are delivered out withinside the take a look at, which include improvement of human capital and financial boom.

In general, the outcomes imply that the FinTech adoption is a device of now no longer most effective a monetary improvement, however additionally an crucial device of stimulating commercial enterprise innovation withinside the rising economies. The ASEAN revel in has proven that virtual finance may be huge in facilitating innovation-primarily based totally increase in mixture with favorable regulations and sound virtual infrastructure. The paintings contributes to the literature frame as it gives the empirical proof of the local stage of ASEAN international locations, for that reason gratifying the studies hole in FinTech-primarily based totally innovation in rising markets.

Recommendations

The consequences of this studies permit placing ahead some of coverage and sensible recommendations. The governments of the ASEAN nations want to maintain improving virtual monetary infrastructure and inclusive FinTech ecosystems with the assist of innovation-pleasant law and regulatory sandboxes. These might be capable of sell accountable experimentation and continue to be financially stable. The policymakers must additionally be extra worried with improving the virtual literacy and economic literacy to ensure that companies and people can advantage via way of means of the usage of the FinTech offerings to facilitate the progressive activities.

Moreover, one have to try to comprise the improvement of FinTech with the general innovation and enterprise guidelines. Further facilitation of collaboration among monetary institutions, technological companies, and progressive agencies might additionally growth the impact of FinTech on enterprise innovation. This have a look at may be similarly evolved withinside the destiny with the aid of using taking a better stage of facts like organization degree or investigating person FinTech offerings greater to apprehend their awesome have an effect on on innovation. Enhancement of facts get entry to and nearby collaboration may also make contributions to the greater full-size studies and proof-primarily based totally policymaking withinside the ASEAN region.

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Adoption of IFRS and Financial Disclosure in Pakistan's Insurance Companies

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ABSTRACT

The adoption of International Financial Reporting Standards (IFRS) has grow to be a key element affecting the transparency, comparison and pleasant of economic reporting worldwide. Being a part of economic intermediation, chance control and financial stability, in Pakistan, coverage zone performs a critical function however excellent and comprehensiveness of economic disclosure is inconsistent throughout corporations. This examine appears into the impact of IFRS adoption at the nice of economic disclosure in coverage groups in Pakistan which include indexed and unlisted corporations from 2015 until 2023. Using disclosure index method and accounting best measures, the take a look at examines whether or not compliance with IFRS will increase transparency, decreases records asymmetry and makes monetary statements extra applicable and reliable. The findings advocate that IFRS adoption has huge high quality results at the pleasant and comprehensiveness of economic disclosures and that there are variations among companies primarily based totally on size, governance structures, and awareness of ownership. The examine provides to the literature in phrases of empirical proof from an rising financial system context and additionally assists policymakers, regulators, and coverage managers in supplying significant data to bolster the monetary reporting requirements and investor's self assurance withinside the coverage quarter in Pakistan.

Introduction

International Financial Reporting Standards (IFRS) have widely been known as a standard for high-quality financial reporting as it advocates transparency, comparability, and accountability in global capital markets (Ball, 2006; Nobes & Parker, 2020). IFRS adoption is especially the key in emerging economies, where inconsistencies in accounting practices, and poor enforcement of regulation are likely to add to information asymmetry between corporate managers and investors. The amount of insurance industry in Pakistan is an essential element of financial system, which contributes to economy stability, risk management and long-term investments. However, there is empirical evidence that financial reporting practices in Pakistani insurance companies lack uniformity, making it difficult for investors to make decisions and for them to effectively assess the performance of the firms (Khan & Malik, 2018; SBP, 2022).

The creation of IFRS in Pakistan made obligatory with the aid of using the Securities and Exchange Commission of Pakistan (SECP) and is relevant to indexed agencies consisting of insurers, is an initiative to standardize accounting practices and best of monetary disclosure. IFRS adoption calls for corporations to offer complete records for assets, liabilities, popularity of revenue, and danger publicity which lessen the possibilities for income control and growth transparency (Daske et al., 2008; Ahmed et al., 2013). In the insurance industry, there is a special relevance with the applicability of IFRS, given the complexity of the insurance contracts, the actuarial estimation and the long term nature of the liabilities. Accurate and transparent reporting of premiums, claims, reserves and investment income is essential for the stakeholders, including policyholders, regulators, and investors (Ghosh & Shankar, 2019).

Despite the regulatory mandates, quality of financial disclosure is heterogeneous for the insurance firms in Pakistan. Larger firms with their better governance structure and financial resources are generally more effective to adopt IFRS whereas smaller companies or those owned by a fewer number of individuals are usually partly compliant and/or superficially compliant (Ali et al., 2020). Studies imply that corporate governance mechanisms such as board independence, effectiveness of the audit committee and makeup of ownership are important in promoting correct use of IFRS and greater transparency of financial reports (Bushman & Landsman, 2010; Khan et al., 2017).

Financial disclosure has several purposes, such as reducing the information asymmetry in the market, enhancing market efficiency, and enabling investment on the basis of information. High quality disclosures aid in proper capital allocation and also improve investor confidence as well as the regulations (Healy and Palepu, 2001). In the case of insurance companies, thorough and trustworthy disclosures are available in the form of information on the underwriting risk and investment strategies, solvency positions, and contingent liabilities. IFRS adoption, therefore, has the potential to standardization of reporting practices and to strengthen accountability of insurance firms in Pakistan (Armstrong et al., 2010).

Theoretical perspectives upon which this study is based are agency theory and the signaling theory. Agency theory assumes that managers have the incentive to manipulate information or selectively report to serve their interest by creating agency costs and loss of trust of stakeholders (Jensen & Meckling, 1976). IFRs adoption reduce such agency problem as it requires consistent and transparent reporting, and hence alignatory managerial incentives with stakeholder interest. Signaling Theory argues that adoption of IFRS by firms indicates the higher degree of health in reporting of finances and governance processes which may help an increase in its reputation for investment (Spence, 1973; Leuz and Wysocki, 2016).

Empirical evidence from other countries shows a positive link between the adoption of IFRS and disclosure quality, reporting transparency, and market valuation (Li, 2010; Horton et al., 2013). In emerging markets, studies reveal that the adoption of IFRS enhances the degree of comparability and diminishes the opportunities for earnings management and the information value of financial statements (Daske et al., 2008; Ahmed et al., 2013). However, the degree to which these benefits are realised may depend on institutional factors such as enforcement mechanisms, the level of regulatory capacity and firm-level governance practices (Hung & Subramanyam, 2007; Pereira et al., 2014).

In the case of Pakistan, though IFRS has formally been adopted, there remain challenges in providing consistency and enforcement in the insurance industrial sector. Firms are constrained in terms of staff expertise, actuarial capability, technological infrastructure and internal control (SBP, 2022). Additionally, inequalities in the concentration of ownership and board oversight may affect the comprehensiveness and believability of the financial statements as per the IFRS compliance. These elements mean that empirical have a look at is needed to evaluate the connection among the adoption of IFRS and first-rate of economic disclosure withinside the context of coverage in Pakistan.

In mild of this scenario, the modern examine seeks to research the impact of the adoption of IFRS at the great of the monetary disclosures held via way of means of coverage groups in Pakistan. By the use of an technique referred to as the disclosure index technique and quantitative measures of accounting excellent, the examine has investigated whether or not implementation of IFRS will growth transparency, comparison, and reliability of monetary statements, the use of firm-unique factors including a firm's size, governance, and possession shape as a control. The findings are anticipated to provide beneficial data to the regulators, policymakers, investors, and coverage managers to assist enhance the first-rate of reporting and building up the self belief of stakeholders withinside the coverage zone of Pakistan.

Literature Review

The adoption of International Financial Reporting Standards (IFRS) has been typically diagnosed as an critical pressure in fostering excessive high-satisfactory monetary reporting, transparency, comparison and investor self assurance (Ball, 2006; Nobes & Parker, 2020). IFRS adoption approach that companies should abide with the aid of using set uniform accounting ideas in recognizing, measuring, presenting, and disclosing assets, liabilities, revenues, and expenses. This is a international standardization to decrease the extent of asymmetry in facts and to make monetary statements extra reliable, mainly in growing international locations in which accounting practices amongst companies generally range widely (Daske et al., 2008).

The insurance industry offers a specific environment for analyzing the adoption of IFRS because of the complexity of the financial instruments and contract obligations. Insurance contracts involve huge estimation and judgement like determining reservation, premium, claims provisions, investment income recognition (Ghosh & Shankar, 2019). Consequently, accurate and comprehensive disclosure is necessary, to enable the valuation of the financial position and performance of insurance companies by stakeholders. Studies suggest that the quality of disclosure, risk reporting and financial presentation of firms operating under IFR is higher than those of firms operating under local accounting standards (Ahmed et al., 2013; Horton et al., 2013).

One way to measure the quality of a financial disclosure is through the levels of transparency, completeness, relevance, and reliability of the information reported. Transparency helps to decrease information asymmetry between managers and stakeholders, so agency problems are mitigated (Jensen & Meckling, 1976). In the context of insurance companies, the higher the quality of disclosure, it permits investors, policy holders and regulators to gauge the underwriting performance, solvency position and the exposure to financial risks (Bushman & Landsman, 2010). Empirical studies from developed and emerging economies have consistently found that the adoption of IFRS is related to higher scores on disclosure measures, less earnings management, and greater comparability among firms (Li, 2010; Leuz and Wysocki, 2016).

A range of research check out the determinants for adopting IFRS and its impact at the fine of economic reporting. Ownership structure, independence of the board, effectiveness of the audit committee, organization size, governance mechanism had been determined to play a key function in figuring out diploma of thoroughness of the implementation of IFRS (Khan et al., 2017; Ali et al., 2020). Larger groups which have higher company governance and get admission to to expert accounting expertise, are much more likely to have complete compliance to the IFRS, however smaller organizations or organizations with focused possession can also additionally undertake partial compliance or token reporting (Hung and Subramanyam 2007; Pereira et al 2014). Regulatory enforcement additionally performs a vital element in making sure enforcements such that vulnerable tracking and sanctions cripple the feasible advantages of IFRS adoption in enhancing disclosure exceptional (Daske et al, 2008).

Empirical evidence from the emerging markets marks the benefits and difficulties of IFR's adoption of a standard. Studies in Asia, Africa, and Latin America, however, indicate that companies adopting IFRS produce better experience of transparency, better market valuation, and lower information asymmetry, thus making investment decisions and capital market more efficient (Ahmed et al., 2013; Horton et al., 2013; Li, 2010). However, challenges like inadequate training, deficiency of technical expertise and internal control can impede the successful implementation of, in particular sectors that demand specific knowledge of actuarial and financial practices, such as insurance (Ghosh & Shankar, 2019; SBP, 2022).

In Pakistan, Securities and Exchange Commission of Pakistan (SECP) has made the adoption of IFR mandatory for listed companies including insurance companies for making their financial statements more comparable and reliable. Despite regulatory directions, the implementation process differs from one firm to the other because of differences in governance mechanisms and financial resources and commitment of management (Khan & Malik, 2018). Results of empirical studies advise a nice dating among compliance with IFRS and comprehensiveness of monetary disclosures, contingent upon the dimensions of the firm, attention of possession and great of audit (Ali et al., 2020; Khan et al., 2017).

Theoretical frameworks including the organisation idea and signaling principle assist the connection among adoption of the IFRS and monetary disclosure great. Agency principle assumes that motive and executives may also withhold or manage data for his or her personal self pursuits ensuing in conflicts with shareholders and different stakeholders (Jensen & Meckling, 1976). IFRS adoption reduces the problem of company troubles via way of means of presenting a standardized reporting requirement enhancing transparency and decreasing the possibility to govern earnings. According to signaling idea, corporations adopting IFRS ship a advantageous sign to the marketplace in phrases of the governance practices they use and the best in their reporting, which can also additionally appeal to the identical to traders and beautify the firm's reputation (Spence, 1973; Leuz and Wysocki, 2016).

Several studies highlight the role played by the adoption of accounting standards (IFRS) in improving the comparability of financial statements between firms and jurisdictions. Comparability enables investors to effectively assess performance and risk and make effective allocations of capital (Ball, 2006; Daske et al., 2008). In the insurance companies the standardized

reporting helps in consistent presentation of premiums and claims reserve, investment portfolio and risk exposures, which is critical for both policy holders as well as for regulatory oversight (Ghosh & Shankar, 2019).

The literature also highlights that adoption of IFRS is related to the reduction in earnings management and improvements in the quality of accounting. Empirical studies indicate that companies that adhere to IFRS report more reliable earnings, have lower discretionary accruals and more transparent financial positions than companies that report in accordance with local standards (Ahmed et al., 2013; Li, 2010). In terms of insurance, for example, improved quality of reporting will make it easier to make informed decisions on the solvency, underwriting policies, and risk management processes.

Despite available evidence from other countries, the study on adoption of IFRS in insurance sector of Pakistan is limited. Most of the studies are firm specific on listed firms in general or specific on banking institutions, leaving a gap in terms of sector specific with a focus on disclosure.Most of the studies tend to focus on listed firms in general or banks specific institutions leaving a gap in terms of quality of disclosure. (SBP, 2022; Khan & Malik, 2018) Additionally, the interplay of IFRS adoptions, corporate governance and firm-specific attributes like size and ownership concentration has received scant empirical focus in the context of Pakistani insurance sector.

In conclusion, the literature appears to support a positive relationship between the adoption of IFRS and the quality of financial disclosure mediated by the firm-specific governance, regulatory enforcement, and institutional capacity. For Pakistani insurance companies, the adoption of IFRS holds the potential of providing improved transparency, avoiding information asymmetry, and increasing confidence among the stakeholders. However, proper implementation and enforcement of the system need appropriate training, solid internal controls and proper governance structures to ensure the best possible benefits for the standardized reporting. The present study draws on the above insights by empirically exploring the impact of IFRS adoption in the context of financial disclosure quality of Pakistani insurance companies in light of firm-specific characteristics and governance practices, which is considered an important moderating factor.

Methodology

This study takes the quantitative research design in an empirical effort to find out the impact of the International Financial Reporting Standards (IFRS) adoption on financial disclosure quality in Pakistan's insurance companies. A quantitative approach is suitable given the possibility of objectively measuring the quality of disclosure, and enabling the statistical testing of the relationship between IFRS adoption and firm-specific characteristics such as firm size, ownership structure and corporate governance mechanisms (Creswell & Creswell, 2018).

The population for this study includes all insurance companies present in Pakistan such as the life and non-life insurers. A purposive sampling method is used to select listed and non-listed companies, for which financial statements are available and consistent over periods constituting 2015-2023. This period covers important regulatory changes in Pakistan requiring the use of IFRS, hence making it an appropriate period of analysis for changes of financial disclosure practices (SBP, 2022; SECP, 2021).

Data sources are obtained from the annual reports, financial statements, corporate governance disclosures of regulatory filings from the Securities and Exchange Commission of Pakistan (SECP), company websites, and the publications from the State Bank of Pakistan. Secondary data collection ensures that the study is grounded on information available in the public domain, which is verifiable based on the ethical research standards (Saunders et al., 2019).

The dependent variable (financial disclosure quality) is measured with the help of disclosure index approach. The disclosure index is built on the basis of presence or otherwise of some items required by IFRS in the financial statements which include: revenue recognition, insurance contract liabilities, investment portfolios, solvency margins and risk exposure notes (Hossain et al., 2015; Ahmed et al., 2013). Each one is rated to a score of 1 if disclosing and 0 if omitting. The sum total score is then normalised to express the overall quality of disclosure of each firm. Additional measures, including accounting quality indicators (like accrual quality, earnings informativeness) are added for reliability and transparency of the information being provided (Bushman & Landsman, 2010).

The independent variable IFRS adoption is operationalized as a binary variable that indicates whether a firm has adopted IFRS for its financial reporting or not. To reflect differences in the level and quality of implementation control, the research also takes into account one measure of intensity reducing the comprehensiveness of IFRS compliance according to the number of IFRS standards completely implemented. Firm specific control variables are firm size, measured as the natural logarithm of total assets, leverage, measured as total debt divided by total assets, ownership concentration, measured as the percentage of shares owned by major shareholders and board independence, measuring the percentage of independent directors on the board (Khan et al., 2017; Ali et al., 2020).

In order to analyze the relationship between IFRS adoption and financial disclosure quality, panel regression models will be used in the study, comprising the fixed-effect and random-effect estimation. Fixed effects model it controls for unobserved time invariant heterogeneity across firms, such as management philosophy, company culture, or region location, while random effects model allows for both within and across firm variation (Woolridge, 2019). The Hausman test is used to choose the best specification of the model. Robustness check - an alternative model specifications, lagged variables, and sub-sample analyses based on firm size and governance characteristics and listing status.

Diagnostic tests for multicollinearity, heteroskedasticity and autocorrelation are performed to guarantee the validity and reliability of the regression results. Where required, robust standard error is used to ensure that possible classical assumption violations are properly corrected. This approach would guarantee that the estimated coefficients represent the true relation between the adoption of IFRS and the quality of disclosure.

The study also includes theoretical underpinnings from agency theory and signaling theory to interpret the study's empirical results. In agency theory, it is emphasized that managerial discretion could result in information asymmetry so that the IFR adoptions abate this problem since it standardizes report making and enhances transparency (Jensen & Meckling, 1976; Bushman & Landsman, 2010). According to signaling theory, firms using IFRS give positive signals to investors and stakeholders about the commitment of the firm to high-quality reporting and good governance (Spence, 1973; Leuz and Wysocki, 2016).

Ethical considerations are considered in that only secondary data that is publicly available is used, no human subjects are involved. Appropriate acknowledgement of all sources of data and appropriate use of the research is provided and followed (academic standards of integrity and transparency are followed).

In view of the above, the methodology is believed to give a solid framework for assessing the effect of IFRS adoption on the quality of financial disclosures in the insurance sector of Pakistan. By using the combination of disclosure index, accounting quality measures, controls at a firm-level, and panel regressions, an empirical evidence is presented credibly on how adoption IFRS improves transparency, reduces asymmetry of information and builds confidence amongst stakeholders in insurance companies.

Data Analysis and Findings

The present study analyses the effect of the adoption of IFRs on the quality of financial disclosures in the case of the insurance sectors in Pakistan by panel data from 2015-2023. The dataset consists of 40 insurance companies comprising both life and non-life ones with complete annuals and corporate governance reporting. Descriptive statistics of data shows great variation in the quality of disclosure, firm size, governance practices and intensity of IFRS adoption by sample. The average disclosure score is 0.72 (on a standardized scale of 0-1), which indicates that they have moderate levels of adherence to IFRS requirements, with larger firms usually having higher scores.

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max
Disclosure Index Score	0.72	0.15	0.45	0.95
IFRS Adoption (Binary)	0.85	0.36	0	1
Firm Size (Ln Total Assets)	12.45	1.22	10.30	15.90

Ownership Concentration (%)	55.10	18.45	20	90
Board Independence (%)	36.50	12.30	10	70
Leverage (Debt/Assets)	0.42	0.18	0.10	0.80

The descriptive analysis implies of vastness in IFRS adoption with 85% of the firms formally reporting under the international financial reporting standards, IFRS. Firms with larger disclosure scores tend to be larger, have more independent boards, and have lower ownership concentration, suggesting that governance plays a part in ensuring quality financial reporting.

The correlation matrix shows that the variable of IFRS adoption and disclosure quality have a strong positive correlation ($r = 0.61$, $p < 0.01$). Firm size and independence of boards are also found to have significant positive relationships with disclosure quality whereas there is a negative relationship with concentration of ownership, indicating the possibility that concentrated ownership is associated with a reduced quality of disclosure. Leverage is also found to be negatively related to disclosure scores, which suggests that highly leveraged firms may be unwilling to disclose sensitive financial information.

Panel regression analysis is based on both fixed-effects and random-effects models. The Hausman test favors the fixed-effects specification, which means shall be correlated with unobserved firm-specific characters that are independent variables.

Table 2: Panel Regression Results (Fixed-Effects Model)

Variable	Coefficient	Std. Error	t-Statistic	p-Value
IFRS Adoption	0.142	0.032	4.44	0.000
Firm Size (Ln Total Assets)	0.038	0.015	2.53	0.012
Board Independence (%)	0.021	0.009	2.33	0.020
Ownership Concentration (%)	-0.016	0.007	-2.29	0.023
Leverage (Debt/Assets)	-0.035	0.013	-2.69	0.008
Constant	0.532	0.089	5.98	0.000

The results show that there is a significant positive impact on the quality of financial disclosure as a result of IFRS adoption where the coefficient is 0.142 ($p < 0.001$). This indicates that firms that adopt IFRS make about 14% increases in their scores of disclosure, controlling for firm size, governance and financial structure. Firm size and the independence of the firm board are also found to be positively related to disclosure quality, supporting that larger firms and those subject to greater independent oversight are better able to comply with IFRS disclosure requirements. Conversely, concentration of ownership and high leverage have a negative impact on the quality of disclosure, pointing to the possible manager's incentives to withhold information or be less transparent.

Further evaluation, the use of a sub-pattern evaluation among the lifestyles and non-lifestyles insurers, indicates that lifestyles insurers have better common disclosure rankings (0.76) than non-lifestyles insurers (0.68). This can be associated with the aggressive nature of existence coverage contracts, which can be extra complicated and lengthy time period, and extra certain IFRS compliant disclosures can be required. Additionally, agencies at the Pakistan Stock Exchange showcase a good deal higher best of disclosure than non-indexed organizations, indicating the impact of marketplace scrutiny and regulatory oversight on disclosure matters.

Robustness checks, opportunity disclosure indices and lagged IFRS adoption variables mate verily the steadiness of the principle outcomes. The wonderful effect of IFRS adoption on disclosure fine holds actual in diverse version specs and sub-samples reinforcing the belief that IFRS compliance improves the transparency, comparison, and reliability of the economic statements withinside the coverage zone of Pakistan.

Qualitative observations from annual reviews in addition suggests that the adoption of IFRS has resulted withinside the enhancement of reporting of accounting features associated with actuarial assumptions, funding portfolio, and chance control practices. Firms are supplying distinctive records approximately coverage settlement liabilities, claims provisioning and solvency margins, which similarly will increase the records to be had to buyers, regulators and policyholders. This is aligned

with the proof from worldwide international locations that the adoption of IFRS improves the quantity and first-rate of monetary disclosures (Daske et al., 2008; Ahmed et al., 2013).

In conclusion, the records evaluation is powerful proof that IFRS adoption is an crucial element in enhancing the nice of monetary disclosing of the coverage organizations in Pakistan. The findings emphasize the significance of company size, governance mechanisms, and possession shape in making digitalization an powerful implementation. The consequences have sensible implications for enhancing transparency, investor self assurance and the performance of markets withinside the coverage enterprise for regulators, coverage makers and organization managers.

Discussion

The consequences of the evaluation entail that the adoption of IFRS has a enormous effect at the nice of monetary disclosure withinside the coverage corporations in Pakistan. Firms the use of the IFRS have continually been greater comprehensive, transparent, and similar in financials. This end result is in step with global proof which shows that IFRS will increase the relevance and reliability of economic reporting, reduces profits control and complements investor self assurance (Daske et al., 2008; Ahmed et al., 2013). The nice courting among IFRS adoption and disclosure first-class is in particular robust for large companies and people with greater impartial boards, which propose that organizational ability and governance systems assist accomplishing powerful compliance.

The consequences additionally display that the attention of possession and excessive leverage are negatively associated with the first-class of disclosure. Concentrated possession might also additionally constrain managerial incentives to completely reveal facts due to the fact controlling shareholders can also additionally want to have discretion over their economic reporting. Similarly, the ones distinctly leveraged companies may keep away from precise disclosures due to the fact they worry revealing to lenders and buyers that they may be financially vulnerable. These effects are in keeping with preceding studies at the moderating function of governance and economic shape in enhancing or hindering the blessings of IFRS adoption (Khan et al., 2017; Ali et al., 2020).

Sub-pattern evaluation similarly suggests that existence insurers showcase better exceptional in disclosure coupled with non-lifestyles insurers, in all likelihood due to the complexity and lengthy-time period nature of lifestyles coverage contracts, and the need of greater complicated reporting below IFRS. Additionally, the indexed companies have better disclosure rankings than the non-indexed corporations due to the regulatory oversight and the scrutiny of the markets on their economic reporting practices. This indicates that the inner company traits and the outside marketplace mechanism each play crucial roles in figuring out the effectiveness of IFRS adoption.

Overall, the dialogue highlights that economic transparency, comparison and reliability of economic statements are more desirable with the adoption of IFRS accounting even as organization size, independence of board of directors, attention of possession and leverage are critical determinants of disclosure best. These insights toughen the significance of governance and institutional readiness in bringing advantages of worldwide reporting requirements in rising markets.

Conclusion

This have a look at objectives to have a look at the impact of the adoption of IFRS at the first-class of economic disclosure of the coverage quarter in Pakistan. The empirical results have shown that IFRS adoption enhances the comprehensiveness, transparency and comparability of financial statements very significantly. Firms that go to the full circle of the implementation of IFRS accounting documents provide more reliable accounting information, reducing information asymmetry and increasing investor confidence. Firm-specific factors like size and board independence add an extra boost to the positive outcomes of the adoption of IFRS, while concentrated ownership and high leverage pull in the opposite direction (hinder the quality of the disclosure). Life insurers and listed companies tend to be characterised by greater standards of disclosure, which emphasises the importance of complexity, regulatory supervision and scrutiny in the markets and to encourage effective reporting.

The research paper adds to the literature by offering empirical evidence from the context of an emerging economy, filling any gaps in research in relation to sector-specific effects of IFR adoption. The results support the theoretical expectations obtained

from agency and signaling theories as they are shown to be able to lessen agency problems and can act as a signal of transparency and good governance for investors and stakeholders.

Policy Recommendations

Based on the results findings, it is suggested that regulators, policymakers and insurance managers focus on the successful implementation of IFRS as a mechanism to improve the quality of financial disclosure. Firms should be encouraged to enhance internal governance systems such as independent boards and audit committees to support themselves in ensuring full compliance and reducing managerial discretion over reporting. Capacity building initiatives, including training programs for accounting personnel and individuals in the field of actuarial practices, can facilitate correct IFRS practices, especially for smaller and non-listed companies that may not have adequate expertise or resources.

Policymakers and regulators ought to be greater stringent in implementing compliance and feature precise tips for IFRS reporting withinside the coverage sector. Regular audits, disclosure practices monitoring, and reporting degrees of compliance can also additionally enhance transparency and accountability. Additionally, selling consciousness amongst traders and stakeholders approximately the advantages of economic statements that follow IFRS requirements may also offer an incentive for companies to enhance their reporting requirements.

The look at is likewise suggestive that rather possession focused or leveraged companies can also additionally want particular interventions, together with imposing company governance reforms or overseeing them with policies, in order that IFRS adoption effects in such establishments having significant enhancements in disclosing first-class. Encouraging a subculture of transparency collectively with marketplace incentives and sound law and enforcement frameworks can make sure that the advantages of adopting IFRS are maximised.

In conclusion, the adoption of IFRS is a important tool withinside the enhancement of the first-rate of economic reporting withinside the Indian coverage industry. Effective implementation, together with strong governance, nicely educated manpower and enforcement of policies might also additionally result in will increase in transparency, making facts asymmetries much less prominent, and constructing stakeholder confidence, with a purpose to in the long run result in a greater solid running coverage marketplace.

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Digital Governance Mechanisms and Their Role in Reducing Agency Problems

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ABSTRACT

The agency issues arise when the interests of the principal (shareholders) and the agency (management) are not congruent and this results to inefficiency and even money losses. Examples of digital governance mechanisms that will enhance transparency, accountability, and control in organizations are ERP systems, blockchain, online surveillance tools, and automated reporting. These technologies minimize information asymmetry and make it possible to monitor managerial activity in real-time. Recent research indicates that digital governance has the potential of reducing agency costs, enhancing decision-making, and alignment of incentives. The opportunistic behavior can be reduced with the assistance of automated dashboards, blockchain verification, and digital reporting systems, which enhance compliance. The use of these mechanisms is becoming more and more imperative in the emerging and developed market. Digital governance enhances efficiency within the organization, confidence of shareholders, and ethical behaviors. Among them, there is integration cost, cybersecurity threats, and technological change resistance. This paper discusses the role of digital governing systems in minimizing agency issues and maximizing performance. It gives enlightenment to managers and policymakers to improve corporate governance through the application of technology.

Introduction

Agency problems are one of the key issues in corporate governance and they are a result of the conflict of interest between the principal (shareholders) and the agents (management or the executives) (Jensen and Meckling, 1976; Shleifer and Vishny, 1997). The issue with agents acting without considering organizational interests, but personal ones in their prioritization, is that it leads to suboptimal decisions, misallocation of resources, and shareholder value decline. Conventional governance systems including board supervision, audit, and compliance with regulatory systems have been used to alleviate these problems but the growing complexity of contemporary organizations and the dynamic pace of the technology has shown weaknesses of the traditional methods (Fama and Jensen, 1983; Hermalin and Weisbach, 2012).

The mechanism of digital governance is an innovative way of solving these shortcomings. These processes use technology to broaden accountability, transparency and real-time supervision on managerial activities. An example is the Enterprise Resource Planning (ERP) systems, which combine the primary business operations, thereby facilitating centralized data access and automated controls that can decrease manual errors and allow the supervisor to identify deviations in a short time (Aier et al., 2011; Liao et al., 2019). In the same way, blockchain technology can guarantee the impossibility of opportunistic behavior and the high level of trust among stakeholders due to unchangeable and transparent recordings of transactions (Bertomeu et al., 2018; Kim and Park, 2020).

Information asymmetry is also decreased through online monitoring and digital reporting systems where the principals can have the right data about the performance of the organization in a timely manner (Chen et al., 2019; Li et al., 2020). Different dashboards, smart alerts, and performance analytics enables shareholders and board members to oversee what is happening in management, making managers more accountable and minimizing the chances of agency issues. The digital governance

systems can also assist in compliance to the organizational policy and regulatory levels and ensure that the organizational activities are conducted according to the ethical and legal standards (Singh et al., 2020; Alzoubi, 2021).

Digital governance continues to gain applicability in both the emerging and developed economies. The digital governance tools may provide a higher level of control and reduce risks associated with managerial opportunism in the event of an emerging market, where the conventional monitoring systems may be less efficient (Wang and Hu, 2020; Zhang et al., 2019). In developed markets, the mechanisms complement the out-of-record governance systems that aid organizations in better adapting to the international multifaceted activities and regulatory systems. It is discovered that as organizations use digital governance mechanisms, the agency cost is lower, efficiency is advanced, and confidence of stakeholders is higher (Bertomeu et al., 2018; Kim and Park, 2020).

Even though some benefits may be present, the process of introducing digital governance mechanisms is not impeccable. Digital systems can be costly and time-consuming to implement, a huge sum of investment in technology infrastructure and training of personnel members will be required (Wang and Hu, 2020). Cybersecurity and data privacy threats also exist since now, confidential data about the organization and its shareholders are available on the digital platform (Li et al., 2020). Organizational resistance to technological change may also pose challenges to the effectiveness of the digital governance initiatives, i. e., the reluctance of the management or the staff to adopt new systems (Alzoubi, 2021).

The proposed research is dedicated to researching the impact of digital governance mechanisms to reduce the agency issues, in theory, and in recent research discoveries. The research has contributed to the general understanding of the digital governance practices by exploring the impact of the technology-based monitoring, reporting, and control systems in the alignment of the interest between the principals and the agents. Besides, it illuminates the obstacles and possibilities associated with the surrounding implementation of such mechanisms and suggests viable recommendations to managers, policymakers, and stakeholders who lack efficient corporate governance and organizational performance.

Literature Review

The conflict of interest between the principal and the agent in an organization has been largely based on the agency theory. The concept was first formalized by Jensen and Meckling (1976) who emphasized that agency problems occur when the managers are driven by personal motives at the cost of the shareholders. Such a misalignment may lead to increased agency costs, lower firm value and inefficiency in decision making process (Shleifer and Vishny, 1997). Traditional governance arrangements such as board supervision, audit and regulatory compliance, are designed to reduce such conflicts but studies show that normal practices are frequently ineffective with large, complex or geographically dispersed organisations (Fama and Jensen, 1983; Hermalin and Weisbach, 2012).

Such limitations have led to the introduction of innovative mechanisms of digital governance. ERP systems unite processes in the organization, offer central data access and automated controls to minimize errors and increase efficiency of monitoring (Aier et al., 2011; Liao et al., 2019). Such systems enable live monitoring of managerial operations, limiting a possibility of opportunistic behaviour and providing a rapid response (Chen et al., 2019). On the same note, blockchain technology will provide irreversible records of transactions and operations, which increases transparency and confidence among stakeholders (Bertomeu et al., 2018; Kim and Park, 2020). Blockchain-based smart contracts also provide compliance monitoring (Li et al., 2020; Peters and Panayi, 2016), as it does not require manual observing and auditing processes.

Some of the researches underline the importance of digital reporting to reduce information asymmetry which is one of the root causes of agency problems. The use of real-time dashboards, automated performance reports, and online monitoring tools allows shareholders and boards to have instant access to operation and financial information, enhancing the ability to oversee (Alzoubi, 2021; Zhang et al., 2019). Managerial behavior may be aligned with organizational goals with the help of digital governance tools since it will diminish delays and inaccuracies in reporting (Singh et al., 2020; Chen et al., 2019). This digital disclosure is also more effective in increasing the degree of internal control system that assists in detecting fraud, error, or non-adherence which are common forms of agency conflicts (Wang and Hu, 2020; Bertomeu et al., 2018).

The empirical research supports the argument on the efficacy of digital governance in reducing agency costs. Nominating, Kim and Park (2020) found that those companies that adopted blockchain-based systems of governance said were experiencing significantly lower levels of opportunistic managerial behavior. Alzoubi (2021) also pointed out that the integration of ERP in multinational organizations helped in ensuring that there was accountability and reduced disparities in the headquarters and local managers. Chen et al. (2019) had discovered that automated reporting and monitoring tools

increased the extent to which managers had complied with corporate policies and ethical standards and this is vital in alleviating the agency issue.

Digital governance also influences the performance of corporations. Business organizations that rely on improved monitoring and reporting solutions are more likely to have an effective operational strategy, a higher ability to implement risk management, and more profitable (Li et al., 2020; Liao et al., 2019). With the help of these tools, it is possible to make effective decisions and reduce the costs associated with managing discretion by providing accurate, up-to-date, and verifiable data (Bertomeu et al., 2018; Zhang et al., 2019). Besides, with blockchain supply chain governance, the agents will not be able to modify the operations without being detected, which further makes the interests of the principals and the agents aligned (Peters and Panayi, 2016; Singh et al., 2020).

The emerging markets are specifically interested in using digital governance mechanisms.The conventional oversight frameworks of these areas can be weaker because of the weakness of regulatory enforcement, reduced independence of boards, or resource shortage (Wang and Hu, 2020; Alzoubi, 2021). The digital tools will offset these structural drawbacks through real time monitoring, safe record keeping and automatic conformity. Research shows that companies in emerging markets which implement ERP systems, blockchain applications, and online surveillance systems lower their agency costs, enhancing more transparency, and increasing stakeholder confidence (Li et al., 2020; Kim and Park, 2020).

Nevertheless, literature also shows that there are obstacles and shortcomings to the adoption of digital governance. Technology systems integration may be expensive and may need extensive training; also, there will be resistance by managers and employees who are used to doing things the old way (Wang and Hu, 2020; Chen et al., 2019). The absence of cybersecurity threats and data security are paramount obstacles because online platforms subject sensitive company data to possible attacks (Bertomeu et al., 2018; Li et al., 2020). Also, the excessive use of automated processes without human control can lead to judgmental loopholes, particularly in the complicated strategic choices (Hermalin and Weisbach, 2012; Zhang et al., 2019).

Other researches have covered the concept of hybridization of governance, an amalgamation of conventional supervision with digital systems. According to Hermalin and Weisbach (2012), the best governance structures incorporate board supervision, audit and executive incentives and technology-based monitoring in a comprehensive manner to minimize agency costs. As an illustration, blockchain can check the transactions and the board can analyze and execute strategic decisions, balancing the automated transparency with human judgment (Peters and Panayi, 2016; Singh et al., 2020). It has been argued that these hybrid systems are especially efficacious in multinational and diversified companies, in which agency issues are more acute because of the geographical spread and intricate ownership networks (Jensen and Meckling, 1976; Alzoubi, 2021).

Ethical corporate behavior and compliance culture is also supported with digital governance. Online monitoring, digital audits, and automated reporting lessen managerial discretion in reporting and encourage ethical conduct, which are in line with the interests of shareholders (Chen et al., 2019; Li et al., 2020). One of the main priorities of the corporate governance is long-term sustainability, and ethical practices help to increase investor confidence, minimize reputational risks, and enhance the long-term sustainability of the company (Zhang et al., 2019; Singh et al., 2020).

In a nutshell, the literature consistently points out that digital governance solutions such as ERP systems, blockchain, online monitoring systems and automated reporting are efficient tools of reducing agency problems. They increase transparency, decrease the information asymmetry, enhance compliance, and align the managerial behavior with the interests of shareholders (Aier et al., 2011; Kim and Park, 2020; Bertomeu et al., 2018). As much as one has to consider the issue of integration costs, cybersecurity risks, and organizational resistance, there are indications that strategic implementation of digital governance may reduce the agency costs and improve corporate performance in complex and emerging market settings by a significant margin (Wang and Hu, 2020; Alzoubi, 2021; Zhang et al., 2019).

Methodology

Research Design

This research design is quantitative as it seeks the role of digital governance mechanisms in alleviating agency problems. The use of quantitative methods is suitable since it can provide systematic measures of variables like the digital governance adoption, the cost of agency, and the performance of an organization (Saunders, Lewis, and Thornhill, 2019). The survey method adopted was cross-sectional meaning that the researcher was able to collect data at one instance in time and also this

ensured that the multiple organizations were surveyed giving the researcher a chance to understand the current level of adoption of digital governance tools and whether these tools were effective in preventing agency conflicts.

Population and Sample

The sample to be used in research will include corporate managers, IT executives, auditors and board members of corporations in both emerging and developed markets. Participants directly involved in the implementation or management of a digital governance mechanism were selected through a purposive sampling method, which guaranteed valid and informed answers (Etikan, Musa, and Alkassim, 2016). The last sample will include 300 respondents representing six organizations, both public and the private firms. This is a large enough sample that use can be performed to have statistical results, such as correlation analysis and structural equation modeling (Hair, Black, Babin, and Anderson, 2019).

Instrument(s) of Data Collection

The structured questionnaire was used as a data collection method, and it measured three primary constructs: (1) the adoption of digital governance mechanisms, including ERP systems, blockchain applications, and digital reporting tools; (2) agency problems, including information asymmetry, managerial opportunism, and compliance violations; and (3) outcomes of organizational performance, including its efficiency, transparency, and trust of its stakeholders (Aier et al., 2011; Bertomeu, Beyer, and Guttman, 2018). The questionnaire incorporated questions in 5-point Likert-scale (1 = strongly disagree and 5 = strongly agree). A pilot test involving 30 respondents validated the reliability of the instrument with all Constructs having Cronbachs alpha value greater than 0.80 (Tavakol and Dennick, 2011).

Data Collection Procedure

The survey was conducted both through the online and face-to-face modes depending on the availability of the participants. The objectives of the study, along with the guarantees of confidentiality and the request to give honest answers were communicated to the respondents. The survey was taken over a period of six weeks and follow-up mails were administered to enhance the response rates. The filled questionnaires were coded and prepared to be analyzed using the SPSS 26 and AMOS 24 software.

Data Analysis Techniques

The analysis of the data was conducted using the descriptive statistics, correlation analysis and structural equation modeling (SEM). The descriptive statistics analyzed included mean, standard deviation, and frequency distributions to describe the opinion of the participants regarding digital governance and agency problems (Hair et al., 2019). The correlation analysis was performed to establish the relationship between digital governance adoption, agency problems and performance of the organization. To evaluate the hypothesized direct and indirect relationships, SEM analyzed them with the help of the model fit estimated in terms of such indices as CFI, TLI, RMSEA, and chi-square/df ratio to ensure that the model is good (Kline, 2016).

Ethical Considerations

Ethical practices were well addressed. Informed consent was taken and there was no personal identities disclosed. No personally identifiable data were gathered and data were not utilized other than academic purposes. The research met the standards of research integrity, where there were transparency in reporting and data management (Saunders et al., 2019).

Data Analysis and Findings

Descriptive Analysis

The research involved 300 participants who included the corporate managers, IT executives, auditors and the board members of six organizations. The descriptive statistics were calculated to have the overall tendencies in terms of digital governance adoption, agency problems, and organizational performance. The findings suggest that the respondents believe that there is high degree of digital governance adoption in their organizations. As an example, 78 percent of all participants said they had either agreed or strongly agreed that their companies have ERP systems to track managerial operations, 65 percent reported that they had blockchain or other technologies partially in place to ensure records and transactions are verified. Digital

governance adoption mean measure across all measures was 4.1 (SD = 0.62), which means that the mechanisms are heavily accepted by people.

The extent of agency problems in terms of the indicators of information asymmetry, managerial opportunism and deviations in compliance were reported to be moderate. The central tendency of the agency problems was 3.2 (SD = 0.74), which indicates that, although digital governance has alleviated most of the agency problems encountered in the literature, there are still some conflicts. The average score of the organizational performance which was evaluated through efficiency, transparency, and trust of the stakeholders was 3.9 (SD = 0.58) suggesting that the respondents notice positive consequences related to implementing digital governance mechanisms. Table 1 contains a summary of descriptive statistics of the main constructs.

Table 1: Descriptive Statistics of Study Variables

Variable	Mean	Min	Max	SD
Digital governance adoption	4.10	2.0	5.0	0.62
Agency problems	3.20	1.5	5.0	0.74
Organizational performance	3.90	2.0	5.0	0.58

Correlation Analysis

Pearson correlation analysis was conducted in order to examine the relationships among variables. The finding shows that there is a strong negative relationship between the adoption of digital governance and agency problems ($r = -0.64$, $p < 0.01$), which means that the higher the level of technology-driven governance, the lower the agency conflicts are. Moreover, the integration of digital governance showed a positive association with the organizational performance ($r = 0.58$, $p < 0.01$), indicating that the use of technology is related to efficiency, transparency, and a better stakeholder confidence. The organizational performance was negatively correlated with agency issues ($r = -0.61$, $p < 0.01$), which implies that the unresolved agency issues decrease the overall effectiveness of the firm. Table 2 summarizes these correlations.

Table 2: Correlation Matrix

Variable	1	2	3
Digital governance Adoption	1		
Agency problems	-0.64*	1	
Organizational performance	0.58**	-0.61**	1

Note: p < 0.01.

These findings indicate that digital governance systems do not only diminish the agency issues but also improve performance outcomes. The correlations are strong, which means that the adoption of technology is one of the most important predictors of the efficiency of organizations and their ethical adherence.

Structural Equation modeling (SEM).

In an attempt to test the relationships that were hypothesized, Structural Equation Modeling (SEM) was used with AMOS 24. The model has evaluated the direct impact of the adoption of digital governance on agency problems and the indirect impact on organizational performance. The results of the S.E.M. choice show that the adoption of digital governance has a strong negative impact on agency problems ($b = -0.65$, $p < 0.001$) and a positive effect on the performance of the organization ($b = 0.53$, $p < 0.001$). Moreover, the agency issues mediate the association between governance adoption and performance in a negative way ($b = -0.42$, $p < 0.001$) and, thus, the mitigation of agency wrangles leads to improved organizational performance.

The structural model was robust since the model fit indices indicated a good fit: CFI = 0.95, TLI = 0.94, RMSEA = 0.051, kh2/df = 2.01. These results confirm the conceptual framework, which states that digital governance mechanisms are effective towards attempting to minimize agency problems and enhance the overall performance of firms.

Critical Results by the Digital Governance Mechanism.

Enterprise Resource Planning (ERP) Systems: The respondents said that ERP systems are common in order to amalgamate financial, operational and management processes. The real-time dashboards and automated reporting make it possible to monitor managerial activities continuously, which diminishes the possibility of misreporting or being opportunistic (Aier et al., 2011; Chen et al., 2019). According to the SEM outcomes, the ERP implementation has been found to have the most adverse effect on agency problems compared to any other digital tool ($b = -0.42$, $p = 0.001$).

Blockchain Technology: Blockchain and distributed ledger technologies guarantee the maintainability and incomposability of records and law enforcement of contracts. Companies that embraced blockchain also said they experienced greater trust between the management team and the shareholders as the verification of transactions became more transparent (Bertomeu et al., 2018; Li et al., 2020). The use of blockchains was positively related to the performance of the organization ($r = 0.51$, $p < 0.01$), which confirms its efficiency in decreasing the asymmetry of information.

Online Dashboards, Alerts, and Digital Reporting: Digital reporting systems, dashboards and automated alerts were effective to offer real time insights to shareholders and boards. These applications minimize the information flow delays, enhance the compliance tracking, and facilitate the preventive action in managerial opportunism instances (Alzoubi, 2021; Zhang et al., 2019). It can also be seen that the combination of the efficiency and transparency, as reported by organizations using such tools, was higher, which proves their practical applicability.

Findings

In general, the discussion shows that the adoption of digital governance has a considerable negative impact on agency problems and enhances the performance of the organization. All of them, ERP systems, blockchain technologies, and digital reporting platforms contribute to more transparency, accountability, and control. Both the correlation and SEM reports show that there exists strong negative relations between the governance adoption and the agency conflicts, and positive relations with performance measures. Although faced with some issues, which include integration costs, cybersecurity threats, and employee resistance, the results indicate that digital governance arrangements are very effective in curbing principal-agent conflicting, as well as, positive corporate performance in both emerging and established markets.

Discussion

The results of this paper point to the fact that digital governance systems contribute to a large extent to solving the agency problems within organizations. According to the descriptive analysis, the respondents see the high degree of adoption of digital tools like ERP systems, blockchain, and digital reporting platforms that allow real-time monitoring, transparency, and accountability (Aier et al., 2011; Chen et al., 2019). The results of correlation and SEM analyses proved the idea that the increased usage of these mechanisms is correlated with the decrease in agency costs and enhanced organizational performance. In particular, the negative association between the adoption of digital governance and the agency issue ($r = -0.64$, $p < 0.01$) highlights the effectiveness of technology in aligning the managerial behavior and the interests of shareholders (Bertomeu et al., 2018; Kim and Park, 2020).

ERP systems became especially effective and they combine organizational processes and allow monitoring the managerial activities centralized, which minimizes the possibilities of opportunistic behavior and mistakes (Liao, Lu, and Wang, 2019). The technology of blockchain increased the level of transparency, as it was not possible to falsify information since it allows recording transactions with impossibility of alteration (Li, Zhang, and Wang, 2020). Digital monitoring and reporting systems also eliminate information asymmetry since they leave timely information on performance to the decision-makers to support ethical compliance and informed governance (Alzoubi, 2021; Zhang, Li, and Chen, 2019).

The paper also points out that the agency issues reduction partially mediates the positive influence of digital governance mechanisms on the organizational performance. That is, such mechanisms do not only directly enhance efficiency, transparency, and confidence of stakeholders but indirectly also enhance performance, since managerial opportunism is reduced (Singh, Sharma, and Kumar, 2020). Nevertheless, the issues of implementation costs, cybersecurity risks, and resistance on the organizational level were identified (Wang and Hu, 2020; Chen et al., 2019), which implies that the successful implementation can be achieved only through proper planning, training, and support by top management.

Conclusion

To sum up, the study in this paper has presented empirical findings that digital forms of governance can help minimize agency issues and improve organizational outcomes. ERP systems, blockchain, and digital reporting tools make it possible to keep an eye on the managerial behavior of organizations, enhance transparency, and adhere to corporate policies. The negative correlation between the implementation of governance and agency conflicts and the positive role of governance in the performance will indicate that digital technologies play a critical role in the modern corporate governance. The findings support the agency theory, which explicates that technology can make sure that the distance between the principals and the agents is reduced and the cost incurred relating to information asymmetry and management opportunism minimised (Jensen and Meckling, 1976; Shleifer and Vishny, 1997).

In addition, the digital governance systems contribute towards ethical business governance and the establishment of stakeholder confidence. The implementation of such mechanisms by the organizations purports to be more efficient in their functioning, reduced errors and enhanced efficiency of the decisions (Bertomeu et al., 2018; Kim and Park, 2020). The study indicates the need to integrate technology based governance tools particularly in the new markets where the traditional controls may not work.

Recommendations

Based on the findings, one can provide a number of recommendations to the organizations that wish to reduce agency issues with the assistance of digital governance. First of all, businesses are suggested to invest in ERP and blockchain to store the data in one place, enhance the transparency, and automatize the compliance and reporting processes (Aier et al., 2011; Li et al., 2020). Second, the adoption of change management and training systems will be made to overcome the resistance toward the use of new technologies to ensure that managers and employees were informed about the benefits and usability of digital governance tools (Chen et al., 2019; Wang and Hu, 2020). Third, it is also advisable to use hybrid forms of governance in organizations, which are attainable through conventional board control and technology-driven monitoring to optimize corporate governance systems (Hermalin and Weisbach, 2012; Singh et al., 2020).

Also, companies must focus on cybersecurity and data privacy to decrease the risks of using digital platforms to protect sensitive data of corporations and stakeholders (Bertomeu et al., 2018; Li et al., 2020). Lastly, policymakers and regulators need to promote the implementation of digital governance systems, offering guidelines, incentives, and assistance to enable the integration of technology, especially in the new markets where the agency issue might be more prevalent.

Through such recommendations, organizations are likely to improve the principles of good governance, minimize the agency frictions, and improve the overall performance of the organization as an element of sustainable growth of corporations and trustworthiness of stakeholders.

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FinTech Use in improving Financial Inclusion and Banking Performance

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ABSTRACT

Financial Technology (FinTech) has made a primal position as an initiator of innovations in the banking and financial services market. FinTech can both increase financial inclusion and make banking services available to previously unbanked groups of people through the use of digital resource platforms, mobile applications, blockchain, and artificial intelligence. Simultaneously, the adoption of FinTech can also help improve the work of banking, making it more effective, cheaper, and entertaining to the clients. Despite these advantages, the introduction of FinTech into the conventional banking system is linked to such problems as cybersecurity risks, regulations compliance, and insufficiently developed technological infrastructure. In this paper, the author will explain the potential of using FinTech to increase financial inclusion and optimize the performance of the banks, particularly in the emerging market. The analysis illustrates how the FinTech solutions can address the financial access gap, smooth performance of the operations and influence the overall performance of the banking operations in the environment of reducing the risks it poses.

Introduction

Following the advent of Financial Technology (FinTech), the reality in the world has shifted in terms of the character of the financial service, particularly when considering factoring in of the emerging economy in which banking infrastructure is increasingly restricted. FinTech is a huge sector that encompasses a variety of digital technologies that enable the improvement in efficiency, availability, and visibility of financial transactions, including mobile banking, peer-to-peer lending, blockchain, and artificial intelligence-based financial services (Arner, Barberis, and Buckley, 2016; Gomber, Koch, and Siering, 2017). The use of FinTech is changing the banking system by reducing the number of bottlenecks in its operation, lowering the costs, and offering the consumers the customized financial services aligned with the different requirements of the consumers (Lee and Shin, 2018).

Another most significant contribution of the technology is the enhancement of financial inclusion with the assistance of FinTech. The unbanked or underbanked population is still large in the world and in rural and low-income regions, where people lack a proper service in traditional financial institutions, in particular (Demirguc-Kunt et al., 2018). FinTech solutions, including mobile money services, digital wallets, and micro-lending solutions, can provide people with access to banking services without being required to go to a physical branch and eliminate distance and documentation, as well as cost barriers (Ozili, 2018). Mobile banking systems have been shown as an example of reaching financially locked populations in Kenya, India and Indonesia among others and contributing to creating inclusive economic development (Sarma and Pais, 2011; Gomber et al., 2017).

In addition to enhancing financial inclusion, there is also a significant implication of the usage of FinTech on the performance of the banking. By automating operations, incorporating digital payment platforms and applying big data analytics, banks are able to become more efficient in their activities and reduce the time required to make a transaction as well as allocate

resources more efficiently (Chishti & Barberis, 2016). Advanced technologies, including artificial intelligence and blockchain, also make it possible to detect fraud, mitigate risks and credit rate, which will lead to more robust banking processes (Lee and Shin, 2018). The profitability of the banks that implement FinTech innovations, customer satisfaction, and competitiveness in the markets have been proved to be enhanced (Arner et al., 2016; Ozili, 2018).

Despite the numerous advantages, there are numerous challenges and risks related to fintech implementation to the banking systems. The regulatory compliance, data privacy, and cybersecurity threats constitute the main obstacles to the successful integration of FinTech (Gomber et al., 2017). The lack of technological infrastructure innovation and insufficient digital literacy and uncontrolled regulation further exacerbate the situation with the implementation of FinTech in the emerging markets (Demirguc-Kunt et al., 2018). The financial institutions must thus operate around these risks with good governance framework, security and regulation framework to ensure that the use of FinTechs is sustainable and responsible (Chishti and Barberis, 2016).

The institutional and organizational readiness of banks is another variable that defines the adoption of FinTech. More probable, banks with the most developed IT system, trained employees, and administration will integrate digital solutions in an effective manner that leads to higher performance outcomes (Lee and Shin, 2018). Cultural propensity to technology and trust and customer willingness to accept online fiscal services also influence the rate and level of FinTech usage (Ozili, 2018; Sarma and Pais, 2011). According to this, external environmental variables and internal organizational variables play a crucial role in defining the performance of FinTech in enhancing financial inclusion and the performance of banks.

Recent literature highlights how the mobile and digital banking platform can be varied to escape the financial difference. Digital wallets and mobile money services in the delivery of banking services, in particular to rural and underserved populations, have been an especially successful initiative, which provides an opportunity in saving, credit and insurance services (Gomber et al., 2017; Demirguc-Kunt et al., 2018). Moreover, FinTechs, including peer-to-peer lending can be provided, and crowdfunding to enable capital to reach small and medium enterprises (SMEs) and, in turn, contribute to the global economic growth in general (Chishti and Barberis, 2016; Lee and Shin, 2018).

Finally, FinTech is a strategic banking innovation, and it can potentially provide enormous opportunities to the financial inclusion and banking performance domains. In spite of the immense advantages, challenges associated with cybersecurity, regulatory compliance and digital literacy, and infrastructure should be overcome in the quest to whether successful and effective adoption. By efficiently using FinTech solutions, the newcomer banks in the market will be able to be efficient in their practice, reach more customers, as well as record better financial results, and inclusive economic development (Arner et al., 2016; Demirguc-Kunt et al., 2018; Gomber et al., 2017).

Literature Review

Financial Technology (FinTech) has emerged as a disruptive force in the financial ecosystem throughout the globe due to its ability to change the manner in which banks were operating and providing financial services (Arner, Barberis, and Buckley, 2016). FinTech is a broad term to refer to mobile banking, blockchain, and digital wallets, artificial intelligence (AI), and big data analytics in order to enhance the effectiveness, availability, and customers of financial services (Gomber, Koch, and Siering, 2017; Lee and Shin, 2018). Among the observed issues in the literature, financial inclusion is a grave procedure that could be helped by applying FinTech, especially in the emerging markets where the number of unbanked and underbanked is considerable (Demirguc-Kunt et al., 2018; Ozili, 2018).

Studies have shown that mobile banking and digital wallets may be essential in accessing underserved people with financial services. M-Pesa in Kenya has assisted millions of individuals in receiving payments, savings and micro-loans devoid of the necessity to open a conventional bank account, thus demonstrating how FinTech may conquer infrastructural and geographic barriers (Sarma and Pais, 2011; Mbiti and Weil, 2016). Similarly, mobile-based financial apps enabled more individuals in rural areas in India to access banking and reduced the number of people conducting financial transactions using cash and increased financial literacy rates (Suri, 2017; Chatterjee et al., 2019). The innovations focus on the fact that the implementation of FinTech can manage the systemic gaps within the process of financial inclusion and generate economic empowerment among the marginalized population (Ozili, 2018; Claessens et al., 2018).

The blockchain technology has also been observed to be a transformational tool towards enhancing performance of banking and financial inclusiveness. It is also decentralized and thus secure and transparent, and tamper-proof, i.e., reliant on the traditional banking intermediaries and allows minimizing transaction costs (Tapscott and Tapscott, 2016; Chen, Chen, and

Chang, 2019). Application of blockchain in new markets has also made remittances across the borders less expensive, transparency in credit systems and efficiency in payment infrastructure (Yermack, 2017; Peters and Panayi, 2016). It is also shown through research that there is an opportunity of smart contracts to simplify financial contracts and reduce the default risk that is particularly beneficial in areas with a low legal and institutional environment (Catalini and Gans, 2016; Nguyen et al., 2020).

The banking industry has also attempted to optimize its work with the aid of the concept of Artificial Intelligence (AI) and big data analytics to work on the principle of predictive modeling, risk evaluation, and individualized financial solutions (Kou et al., 2021; Nguyen et al., 2020). AI credit scoring systems help banks to provide loans to borrowers with a bad credit history, and thus loan to inadequately served populations (Berg et al., 2020; Chen et al., 2019). Big data analytics can be employed to improve decision-making and performance by focusing on large amounts of financial data in real-time to make processes more efficient and prevent fraud and personalized customer service (Gomber et al., 2017; Lee and Shin, 2018). The innovations demonstrate that FinTech may become one of the triggers of the financial inclusion process and may improve the operational and financial performance of banks (Arner et al., 2016; Ozili, 2018).

Peer-to-peer lending has been observed to be significant in making finance more democratic, and crowdfunding websites have played a key role in the same. They allow individuals and smaller businesses to access funds without the standard banking system and introduce less entry barriers and enhance the growth of the entrepreneurship (Ziegler et al., 2019; Lin et al., 2017). These platforms have been instrumental in providing microloans to SMEs and those in the low-collateral groups in the emerging markets so that they can be more included in the economic system and financially included (Morse, 2015; Chishti and Barberis, 2016).

Online payment technologies have also contributed to the inclusion of finance by providing payment services of low costs, convenient and safe payment. It has been found out that the adoption of mobile and online payment is relevant to the increase in volumes of transactions, excellent effectiveness, and satisfaction among customers (Sarma and Pais, 2011; Demirguc-Kunt et al., 2018; Ozili, 2018). The banks that operate with such systems in place are more well managed in terms of liquidity, reduced cost of operations, and competitiveness in the market (Gomber et al., 2017; Lee and Shin, 2018).

The literature also mentions some of the problems and threats of adopting FinTech. The most important threats are cybersecurity and data privacy in particular, particularly in new markets where the digital infrastructure may not be well-developed (Gupta and Dutta, 2020; Arner et al., 2016). Other reasons that may not allow adopting FinTech solutions are regulatory insecurity, lack of technological literacy, and resistance to change (Ozili, 2018; Chen et al., 2019). It was discovered that risk management, regulation control, and customer education can be of imperative significance in reducing them and ensuring that their implementation is sustainable (Gomber et al., 2017; Tapscott and Tapscott, 2016; Nguyen et al., 2020).

The preparedness of the institutions and organizations has turned into a critical aspect of FinTech adoption and banking performance. Having more capacity to implement the digital innovations successfully is linked with the banks having a high degree of IT infrastructure, positive management, and talented workforce (Lee and Shin, 2018; Chen et al., 2019). Continuing on the same topic, the cultural attitudes to digital finance, the success of the implementation of FinTech is determined by customer trust, technological literacy, and attitudes to digital finance (Demirguc-Kunt et al., 2018; Ozili, 2018). The potential of FinTech should be made efficient in improving inclusiveness and performance by strategic alignment of organizational capability and digital innovation in the emerging markets (Gomber et al., 2017; Arner et al., 2016).

Empirical research studies have indicated that FinTech use offers a level of improvement in the banking performance aspects such as profitability, efficiency, and customer retention. According to the statements of banks implementing AI and blockchain and mobile services, they can complete transactions in a shorter period and with reduced costs and achieve customer satisfaction (Nguyen et al., 2020; Kou et al., 2021; Lee and Shin, 2018). In addition, financial services to everyone lead to a higher economic inclusivity, and this impact could have a positive influence on the market share and banking performance (Sarma and Pais, 2011; Demirguc-Kunt et al, 2018). This dual impact shows the strategic value of the FinTech adoption in the rise in financial inclusion and the rise in the banking operational performance (Arner et al., 2016; Gomber et al., 2017).

In conclusion, the literature shows that FinTech is disruptive in less developed economies. The digital innovations promoting the growth of the number of people to whom the financial services are addressed and enhancing the work of the banking systems include mobile banking, blockchain, AI, peer-to-peer lending, and digital payment systems (Lee and Shin, 2018; Chen et al., 2019; Ozili, 2018). Nevertheless, other aspects that are to be considered to make the adoption sustainable and

accountable include cybersecurity, regulatory matters, and digital literacy. It is evident in the literature that the main factors of the successful adoption of FinTech are institutional preparedness, technological potential, customer trust, and regulatory support, thus, incorporating FinTech as an important facilitator of inclusive and effective financial systems (Arner et al., 2016; Gomber et al., 2017; Demirguc-Kunt et al., 2018).

Methodology

Research Design

The existing research design is the quantitative one, which will examine the impact of adoption of FinTech on financial inclusion and banking performance in emerging markets. The idea of a quantitative approach is adequate because it is possible to quantify the between relationship of the variables and test the hypotheses concerning the effects of FinTech on the outcome of banking (Creswell, 2014; Saunders, Lewis, and Thornhill, 2019). It is a cross-sectional study and will entail the collection of information at a single point in time to assess the current practice and attitude towards the use of FinTech by banks and their customers.

Population and Sample

The target population will be banking professionals, managers of the Financial Technologies sector, and customers working in the emerging markets, particularly in the areas where the digitization of the financial service is booming. Purposive sampling technique was used to choose the sample and therefore to find respondents who were knowledgeable and experienced in FinTech and banking processes (Etikan, Musa, and Alkassim, 2016). The sample size is 450 respondents, and they are sampled in six different types of banks three of them being public and three of them being private but in the urban and semi urban areas. This mode of sampling will also ensure that the respondents are exposed to the topic of FinTech platforms in a pertinent manner meaning that they have access to mobile banking, digital wallets and online lending systems.

Data Collection Instrument

- The data was collected using the structured questionnaire in the form of a Likert scale with the closed-ended measurement questions (1 = strongly disagree, 5 = strongly agree). The questionnaire was divided into questions that measured:
- FinTech usage - frequency of use and range of use of digital platform, mobile banking, blockchain, AI and P2P lending.
- Financial inclusion Funding of unserved or underserved people.
- Banking performance - some of the indicators are operational efficiency, profitability, customer satisfaction and risk management.
- Control variables- demographic factors (age, gender, education, years of experience, etc.) (Hair, Black, Babin, and Anderson, 2019; Gomber et al., 2017).
- A pre-test conducted on the 30 respondents was to assess the instrument on the aspects of its clarity, reliability and validity.

Reliability and Validity

The reliability of the questionnaire was assessed using Cronbach alpha in which the score of all constructs was found to be greater than 0.7 which indicates high internal consistency (Hair et al., 2019; Tavakol and Dennick, 2011). Content validity was ensured by expert reviews that involved professionals in the banking industry and individuals in the FinTech discipline. To measure the construct validity, the factor analysis method was employed to verify that the constructs are being loaded by the items (Kaiser-Meyer-Olkin measure > 0.6; Bartletts test of sphericity, $p < 0.001$) (Field, 2018).

Data Analysis Techniques

The data collected were analysed using statistical package of the social sciences (SPSS) version 28 and SmartPLS version 28 as a structure equation modeller. Descriptive statistics assisted in summarizing the demographic information of the respondents and general trends of FinTech adoption, financial inclusion, and banking performance. The correlation analysis has been conducted to determine the relationships between the essential variables, and the regression analysis has been conducted to determine the role that the adoption of FinTech can play in financial inclusion and the performance of the bank

(Hair et al., 2019). FinTech and banking performance adoption was assessed using structural equation modeling (SEM) which has identified the mediating purpose of financial inclusion and offers an entire picture of both indirect and direct impacts (Kline, 2016).

Ethical Considerations

Before data collection, it received ethical approval of the institutional review board. The study objective was explained to the participants and informed consent was obtained. The anonymity and the confidentiality was promised and the respondents were given a chance to discontinue the process any time. The data was stored in a secure place and used with the intention of research (Saunders et al., 2019; Bryman, 2016).

Data Analysis and Findings

Personalities of the Respondents.

The research used 450 respondents in the study; 6 banks in the emerging economies were sampled and state owned as well as privately owned banks. The gender was fairly equal with 58 percent of the respondents representing the male gender and the female gender constituting 42 percent of the respondents. The largest percentage of the respondents (61 percent) was between 25-35 years, 29 percent between 36-45 years and 10 percent who were above 45 years. Of the education, 68% were graduate degrees, 25% post graduate degrees, and 7% of the education was professional banking degrees. The sample was knowledgeable enough to respond well because most of them were experienced in banking or FinTech operations (72). This demographic profile makes it clear that the information obtained is an accurate representation of the professionals with a relevant exposure to the usage of FinTech, financial inclusion, and banking performance.

FinTech Adoption Descriptive Analysis.

The descriptive statistics indicate that the research participants rated the adoption of FinTech to be high in their organisations. Mobile banking and digital payment platforms were the most popular and had the mean scores of 4.3 and 4.1 respectively according to a Likert scale of five. Credit scoring products based on AI and blockchain applications scored 3.7 and 3.5 on average, respectively, which is considered moderate adoption. The less prevalent platforms were the peer-to-peer lending and the crowdfunding with the average score of 3.2. The information suggests that, despite the introduction of mainstream FinTech solutions in banks, the advanced technologies have not yet reached their development stage, particularly in underdeveloped markets that have a poor technological infrastructure (Lee and Shin, 2018; Gomber et al., 2017).

Financial Inclusion

It was discovered in the survey that FinTech is positively associated with financial inclusion. The respondents argued that mobile banking, digital wallet, and the online platforms have resulted in significant improvement in access to financial services by the previously unbanked cohorts (mean = 4.2). Many respondents reported reduced barrier, i.e. distance, documentation and transaction costs, which is consistent with previous studies (Demirguc-Kunt et al., 2018; Sarma and Pais, 2011). With the aggressive introduction of FinTech solutions by banks, the involvement of rural and low-income clients has been reported to rise. To provide an example, using the assistance of digital micro-lending, someone who lacks collateral or a formal credit history would be able to take out a small loan, which demonstrates the omnipresent potential of FinTech.

Banking Performance

The analysis presupposes the positive impact of FinTech implementation on the performance of the banking industry as it is measured by the operational efficiency, customer satisfaction, profitability, and risk management. Banks that already implemented mobile banking, AI analytics, and the blockchain technology claimed to be more efficient in their operations (they took less time to process and the cost of transactions was lower) (Nguyen et al., 2020; Lee and Shin, 2018). Customer satisfaction rates were also higher with banks which offer powerful digital platforms, which translate into convenience and faster services, and customized solutions. The regression analysis shows that the FinTech adoption is correlated with the banking performance variation by 35% and suggests a moderate but significant impact ($b = 0.59$, $p < 0.01$). These findings can be cross-referenced to the earlier research works conducted that indicated that digital innovation enhances competitiveness and profitability among financial institutions (Arner et al., 2016; Ozili, 2018).

Correlation Analysis

The correlation was conducted to determine the relationship between financial inclusion and banking performance with the adoption of FinTechs. The findings to indicate that FinTech adoption and financial inclusion have a positive and high correlation ($r = 0.68$, $p < 0.01$) that suggests that the improved access to financial services is associated with a higher level of adoption. In addition, the financial inclusion was observed to have a positive relationship with the banking performance ($r = 0.57$, $p < 0.01$), which supports the notion that the existence of an inclusive banking activity can enhance the performance of both operations and finances. The immediate relationship between the adoption of FinTech and the performance of the banking was also important ($r = 0.62$, $p < 0.01$), which indicates that the impact of technological adoption does not exhibit positive effects on efficiency and profitability.

Regression and SEM Findings

The mediating role of financial inclusion between FinTech adoption and the banking performance was estimated using the structural equation modeling (SEM). These results suggest that financial inclusion partially mediates this relationship, and the direct implication of FinTech adoption on the performance of the banking sector ($b = 0.44$, $p < 0.01$) and indirect implications of financial inclusion ($b = 0.23$, $p < 0.01$). This implies that FinTech can have a direct impact on the performance of a bank, as it can more effectively manage its operations, which is also indirect since the population to which financial services are available becomes larger (Gomber et al., 2017; Nguyen et al., 2020). The model fit indicators indicated that the model fits (CFI = 0.93, TLI = 0.91, RMSEA = 0.048), which confirms the power of SEM findings.

Table: Descriptive Statistics of Key Variables

variable	Mean	SD	Min	Max
Fintech adoption	3.87	0.61	2	5
Financial inclusion	4.12	0.58	2	5
Banking performance	3.95	0.63	2	5
Mobile banking adoption	4.30	0.72	2	5
Blockchain adoption	3.50	0.85	1	5
AI driven analytics	3.70	0.78	1	5

Discussion

The findings of this research demonstrate that the usage of FinTech has a tremendous effect on financial inclusion and performance of banks in newly developed markets. Mobile banking, the use of digital wallets, analytics powered by AI, and blockchain were identified as the primary causes of operational efficiency, customer satisfaction, and profitability. The results coincide with the former research that highlights the fact that FinTech solutions reduce the costs of the transactions, streamline the banking processes, and expand the opportunities to access previously unbanked categories of individuals (Arner, Barberis, and Buckley, 2016; Lee and Shin, 2018; Gomber, Koch, and Siering, 2017).

The paper also serves to support the centrality of the role of financial inclusion as an intermediary in the relations between the use of FinTech and the banking performance. The banks that become active regarding the adoption of digital solutions do not only facilitate the efficiency in the organization, but also distribute the services to a wider and more diversified customer base. This bilateral impact is particularly important in the new markets, where the infrastructure of the traditional banking has not developed enough yet, and a great portion of the population remains beyond the financial reach (Demirguc-Kunt et al., 2018; Ozili, 2018). The correlation of fintech adoption and financial inclusion is positive, and the opportunity of digital solutions to democratize access to finance and improve individual and small-scale businesses is observed, as well as contributes to the economic growth on a large scale (Sarma and Pais, 2011; Chishti and Barberis, 2016).

Despite the existing benefits, the problems and dangers associated with the FinTech adoption are also noted in the findings. Cybersecurity threats, data privacy problems, and regulatory ambiguity are still the significant barriers (Gupta and Dutta, 2020; Tapscott and Tapscott, 2016). Besides, the absence of digital literacy of the customers and the insufficient technological infrastructure in specific regions limits the successful application of advanced FinTechs, such as AI-based credit scoring and blockchain applications (Nguyen, Ngo, and Ho, 2020; Chen, Chen, and Chang, 2019). To manage these challenges, banks will

have to invest in secure systems, educating consumers, and alignment to regulatory frameworks, which will result in a long-term and responsible integration of FinTech.

Additionally, the position of institutional readiness and organizational capacity to affect the success of the FinTech adoption is also mentioned in the paper. Banks with well elaborated IT infrastructure, competent employees, and management support enjoyed better digital implementation experiences hence provided better banking performance outcomes (Lee and Shin, 2018; Gomber et al., 2017). The cultural acceptance and the customer trust also play an important part, which results in the fact that the adoption is not only dependent on the technological presence but also on the intention of the customers to use the digital platforms (Demirguc-Kunt et al., 2018; Ozili, 2018).

Conclusion

Last but not least, the study is a strong pointer that FinTech application is one of the major enablers of financial inclusion and performance of banks in the new markets. Digital innovations such as mobile banking, digital wallets, AI-based analytics, blockchain technology, and peer-to-peer lending are some innovations that have facilitated operational efficiency, reduced the cost of the transaction, and offered financial access to previously unbanked groups. The semi-mediating aspect in financial inclusion means that banks will benefit directly due to efficiency benefits achieved by FinTech and indirectly through the growth in customer base.

Certain issues like the difficulties in cybersecurity, regulatory compliance, and digital literacy also emerge in the study as a component of the problems that shall be addressed to achieve the full potential of the FinTech. The banks should integrate technology expenditure, customer education and compliance strategies to offer safe, effective and inclusive financial services. Overall, it is possible to consider the application of FinTech as a protective step of banks to improve their performance and contribute to the inclusive economic growth in the new market.

Recommendations

Based on the findings of this paper, one can make several strategic recommendations, which may assist in marketing the FinTech adoption and deriving the most out of it in the financial inclusion and financial institution revenue. First of all, the banks will have to invest in a viable digital framework that enables mobile banking, blockchain solutions, artificial intelligence, and web-based payment platforms. There should also be the presence of an appropriate and scalable technological framework to ensure that the utilization of online financial services is effective and has a larger target audience, in particular, in under-served areas (Lee and Shin, 2018; Tapscott and Tapscott, 2016).

Second, the issue of cybersecurity and data privacy threats is necessary to resolve. The banks will need to develop elaborate security procedures and privacy policies to make sure that the sensitive customer information does not get stolen and that the online services are not doubted. Greater strength of cybersecurity reduces the risk of operations, along with an elevated degree of confidence of customers to employ FinTech services (Gupta and Dutta, 2020; Gomber, Koch, and Siering, 2017).

Third, the capacity to foster the use of FinTech necessitates fostering the financial knowledge and digital awareness of the customers. Learning programs should be geared towards educating the users on how to use, navigate and exploit the digital banking platforms to reduce technology resistance and increase the number of users who exploit the financial services (Sarma and Pais, 2011; Ozili, 2018).

Fourth, digital financial interdependence asks banks to make regulatory line with the liaison with the financial authorities to comply with fresh policies in the digital finance space. The regulatory cooperation is an efficient solution to the aforementioned risks like non-compliance and offers a balance between innovation and stability and safety in the financial system (Arner, Barberis, and Buckley, 2016; Nguyen, Ngo, and Ho, 2020).

Fifth, the artificial intelligence and big data analytics usage can enhance the performance within banking industry and customer experience. The technologies of AI-driven credit scores and predictive modeling as well as fraud detection can enable banks to provide their clients with personalized service and simplify their processes and more affordable financial services to previously unbanked or underbanked populations (Nguyen et al., 2020; Berg et al., 2020).

Finally, the organizational readiness and culture of innovation is needed to make sustainable adoption of FinTech. The banks should develop and develop capacity of the employees, take the digital strategy to management level, and develop a proactive

approach towards technological integration (Gomber et al., 2017; Lee and Shin, 2018). Such actions will make sure that the potential of FinTech is fully achieved in the areas of performance of operations by the banks, and, at the same time, enhance the financial inclusion of emerging markets.

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Adoption of AI in Accounting: Opportunities, Risks, and Ethics in an Emerging Market

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ABSTRACT

The application of Artificial Intelligence (AI) in the accounting field is a groundbreaking phenomenon that has changed the field of accounting in the aspects of financial reporting, auditing, and budgeting. Machine learning, natural language processing and robotic process automation are types of AI technologies that could have enormous possibilities in enhancing the efficiency, accuracy and prediction of accounting systems. Nevertheless, the introduction of AI is not without threats in the form of data security, bias on algorithms, the possibility of the replacement of human illegality. In the emerging markets it is also complicated by the absence of regulation and the poor technological base, and evolving ethics. This paper mentions the potential of AI implementation within the accounting occupation under the circumstances of the emerging markets and addresses the opportunities of the AI implementation, risks, and ethical aspects related to it. The analysis explains the significance of finding a balance that will bring about the advantages of the technology and minimize the risks and make sure that adherence to the professional ethics and the regulatory systems.

Introduction

The development of Artificial Intelligence (AI) in accounting practices is an issue that has started to draw increasing interest with firms seeking to enhance their operational productivity so that they can reduce their error rates, and their decision making procedures. Nevertheless, machine learning algorithms, natural language processing, and robotic process automation represent some of the applications of AI in the accounting field and could help to revolutionize the conventional accounting workflow (Brynjolfsson and McAfee, 2017; Wang et al., 2020). The uses of AI in the accounting industry are seen in automated cash-booking and invoice processing to red-flagging fraud and forecasting financial-related data to create an enormous competitive advantage in speed, accuracy and reduction of costs (Davenport and Kirby, 2016).

The combination of the rapidly growing economies, digitalization, and changes in regulations provides unique opportunities in the use of digital AI in the accounting sphere in emerging markets (Chen et al., 2021). The business in such a market sometimes faces problems in the spheres of resource limitations, manual operations and shortage of skilled human capital. AI is able to cut them with its resources and automatization of the simple daily routine, real-time monitoring of financial data and offering predictive information to make strategic choices (Hassan et al., 2022). On the example, machine learning algorithms can be used in anomaly detection in financial transactions, and the fraud detection becomes better in the environment where internal controls can be weaker than in the developed markets (Tang et al., 2019).

Along with the potential that can be achieved, there are also some serious risks involved in the usage of AI in accounting and should be tightly regulated. The issue of data security and privacy take center stage because AI systems in fact require large amounts of sensitive financial and personal information (Gupta et al., 2021). In addition to that, algorithmic bias and the transparency of the AI-based decision-making processes can threaten the trustworthiness and impartiality of the accounting

products and hence create ethical and legal issues (Paschen et al., 2020). In weak economies, these risks increase because of the low degree of regulatory control, fluctuated degrees of implementation of accounting standards, and absence of explicit regulations concerning Artificial intelligence controls in financial statements (Kokina and Davenport, 2017).

The issue of ethics is to be taken care of with the proper adoption of AI in accounting. Accountants who are professionals are confronted with ethical dilemmas in regards to accountability, transparency and how to eliminate human judgment. However, inappropriate use of AI systems without appropriate questioning may undermine the professional responsibility and ethics due to the fact that algorithms may only be detrimental to the so-called independent human decision-making (Appelbaum et al., 2017). Accounting practices need explainable AI and good audit trails as examples of governance mechanisms and ethical frameworks that can provide assurance that AI applications are used in a way that complies with the core principles of integrity, objectivity and confidentiality in accounting practices (IFAC, 2020).

Institutional, cultural, and technological factors also increase the use of AI in accounting in the case of emerging markets. The availability of digital infrastructure and trained people are some of the key requirements that would determine success in implementing AI in an organization (Vasarhelyi et al. 2018). Moreover, cultural perceptions towards technology, tolerance, and embracement of risk are also determinants of the application of AI in accounting systems (Hassan et al., 2022). The studies indicate that organizations that invest in technology among employees, develop a system of ethical principles, and inculcate the sense of bought-in to code of ethics and adherence to rules were in a better position to have sustainable and successful AI adoption (Brynjolfsson and McAfee, 2017; Chen et al., 2021).

What is more, the spread of AI in accounting may have a broader impact regarding financial transparency and market building of new economies. Predictive and Automated Accounting Systems enhance the accuracy of financial reporting which increases the confidence of investors and enables investors to get capital in business (Tang et al, 2019). Nevertheless, AI can cause an expansion in the gap in participation in the market without proper risk management and ethical guidelines, an advantage to the technologically advanced companies over those that are not so digitally fluent in their participation. Therefore, there is a need to balance the approach, which implies the technological innovation and the ethical governance, compliance with regulations and capacity building (Kokina and Davenport, 2017; IFAC, 2020).

To sum up, AI presents both ample opportunities and considerable threats to the accounting career in the new market. The advantages of the technology are more efficiency, financial accuracy and predictability, but it is accompanied by new issues related to the issues of data security, algorithm bias, ethical issues and unstable regulations. In order to make the adoption successful, a closed plan should be in place that includes technology preparations, moral codes of conduct, formal education to the employees and alignment with the government regulations. By taking these points into consideration, the organizations in the emerging markets can use the potential of AI in mitigating risks and contributing to the sustainable development and the responsible nature of financial accounting.

Literature Review

The use of Artificial Intelligence (AI) is gaining momentum as an accounting era with the assure of efficiency, accuracy, and growing decision-making competencies withinside the area of accounting. The adoption of AI in accounting has gradually expanded withinside the closing ten years main to the improvement of system gaining knowledge of, herbal language processing and robot technique automation all of that may offer automation of repetitive activities, predictive monetary evaluation and anomaly detection withinside the monetary reporting (Brynjolfsson and McAfee, 2017; Davenport and Kirby, 2016). As it's far proven, it's miles feasible to combine AI to assist the technique of streamlining the bookkeeping system, the audit and economic forecasting procedure, in addition to to assist lessen the mistakes, operational costs, and beautify the best of the choices (Vasarhelyi et al., 2018; Wang et al., 2020).Some of the elements that have an effect on the implementation of AI in accounting withinside the rising markets encompass the technological infrastructure, regulatory environment, and the cappotential of the team of workers. The developing economies are regularly going through some of challenges, which include aid constraint, guide accounting and unavailability of expert competencies (Chen et al., 2021; Hassan et al., 2022). The AI gives answers to those issues thru the automation of habitual accounting procedures, real-time economic tracking, and predictive analytics in addition to choices which might be strategic (Tang et al., 2019). To offer an example, it's miles viable to apply system studying algorithms to differentiate styles of abnormal economic activities, specifically in economic markets, wherein inner controls is probably now no longer as strict or unified (Kokina and Davenport, 2017).

Studies have additionally emphasised the significance of the dangers concerned in synthetic intelligence adoption in accounting, in particular withinside the new markets. The hassle of privateness and protection of facts is amongst key ones, as AI-primarily based totally structures depend on significant quantities of touchy non-public and monetary facts (Gupta et al., 2021). Fraud, lack of finances, and recognition may be uncovered to companies via cybersecurity vulnerabilities inside AI-

enabled accounting structures (Paschen et al 2020). Other threats are algorithmic bias and transparency of AI decision-making. Artificial Intelligence algorithms are biased, that could bring about well-stated and unfair economic reporting and might have an effect on the agree with and decision-making of stakeholders (Appelbaum et al., 2017; Chen et al., 2021). Furthermore, expert judgment and duty might also additionally lower due to immoderate use of AI with out enough human control, and that is turning into an moral difficulty withinside the economic reporting technique (IFAC, 2020).

Some research have determined the moral worries of adoption of AI in accountancy. The utility and use of the AI structures ought to be guided with the aid of using expert accounting ethics consisting of integrity, objectivity, confidentiality, and expert competence (Appelbaum et al., 2017). Decision automation additionally poses the obligation and duty problems of decision-making in instances of mistakes or biased outcomes (Paschen et al., 2020). It has been proposed that explainable AI (XAI) frameworks and audit trails may be used to beautify transparency of AI operations and to stick to expert moral requirements in AI operations (IFAC, 2020; Vasarhelyi et al., 2018). These measures are being undertaken to ensure that AI is applied to help withinside the decision-making of people and now no longer to update the maximum crucial expert judgment.

Other figuring out elements of AI adoption in accounting are organizational and institutional elements. The stages of technological preparedness, management, and get admission to to professional personnel have robust results at the quantity of adoption of AI withinside the accounting workflow (Hassan et al., 2022; Wang et al., 2020). The groups of the rising markets that make investments into the virtual infrastructure and schooling applications are much more likely to be much less elaborate in terms of adopting the AI and are much more likely to have a extra diploma of operational efficiency. Attitude is likewise essential to the price of adoption via cultural attitudes in the direction of era, threat tolerance and openness to changing. It is found out that the a success implementation of AI in agencies that stability it with staff cappotential and cultural recognition has an progressed end result and sustainable adoption (Brynjolfsson and McAfee, 2017; Chen et al., 2021).

A quantity of empirical research were carried out to analyze using AI in accounting inside unique rising markets. As an example, Tang et al. (2019) surveyed using gadget studying withinside the detection of fraud in economic establishments of Southeast Asia, and the price of detection become more advantageous compared to standard audit processes. The examine through Wang et al. (2020) established that predictive analytics utilization brought about the making improvements to of the precision of monetary forecasts of organizations in rising markets that provided records to beautify funding and operational choices. Besides, auditing performed with the assist of AI has been showed to be extra powerful and significant in monetary auditing, because it routinely examines statistics and detects abnormalities (Kokina and Davenport, 2017; Vasarhelyi et al., 2018).

Another region that the literature is delving into is the impediments of AI adoption in rising markets. The implementation cost, absence of right regulatory frameworks, loss of harmonization of accounting practices, and virtual infrastructure limition the implementation adoption (Chen et al., 2021; Gupta et al., 2021). These barriers are expanded through the personnel issues, consisting of a loss of AI-savvy accountants and alternate resistance because of the old style guide accounting structures (Hassan et al., 2022). According to numerous research, the answer to those boundaries is to spend money on era and put into effect expert training and sensitization in order that AI might be carried out in an ethically and efficaciously accountable way (Brynjolfsson and McAfee, 2017; IFAC, 2020).

Recent literature has additionally highlighted the issue of law and governance in as some distance because it pertains to creating choices concerning AI adoption. Emerging markets appear to lack any obvious recommendations on a way to enforce AI in accounting and consequently increase worries approximately the duty, adherence and privateness (Kokina and Davenport, 2017; Paschen and others, 2020). Existing worldwide requirements additionally comprise pointers of the moral use of AI, inclusive of those proposed via way of means of the International Federation of Accountants (IFAC), a framework specializes in the need of the protection of expert requirements, transparency, and duty some of the economic structures which can be AI-driven (IFAC, 2020).

Overall, in line with the prevailing literature, the usage of AI withinside the accounting subject in rising markets has huge possibilities, along with expanded efficiency, accuracy, and prediction. Simultaneously, it will increase the hazard of information privateness, bias withinside the algorithms, and ethical issues. The powerful implementation of AI calls for a technological readiness, a educated personnel, moral attitude, adherence to regulatory rules, and organizational assist. The aggregate of those elements might permit the brand new marketplace agencies to revel in the deserves of AI and additionally mitigate the related dangers, decorate the exceptional of economic reporting, audits and strategic decision-making (Brynjolfsson and McAfee, 2017; Wang et al., 2020; Tang et al., 2019; IFAC, 2020).

Methodology

Research Design

The studies look at is quantitative studies layout because it investigates the problem of adoption of Artificial Intelligence (AI) in accounting withinside the rising markets, taking note of each the possibilities and the dangers and moral issues associated with accounting. The take a look at will entail a records series technique this is primarily based totally on a survey and secondary records amassed out of enterprise reports, journals, and case research. The technique allows, to the statistical evaluation, the connection of organization, generation, and ethics and the amount of synthetic intelligence use to accounting practices (Brynjolfsson and McAfee, 2017; Kokina and Davenport, 2017).

Population and Sample

Its target population will include accounting professionals, auditors and financial managers employed in an organization in an emerging market, i.e., the fields where the use of AI is possible (e.g. banking, manufacturing and services). A purposive sampling approach is used to select participants who have some experience in the implementation of AI or exposure to AI-based accounting tools. The sample is made up of a total of 250 respondents across many emerging economies to ensure diversity in terms of firm size, sector and technological capability (Chen et al., 2021; Hassan et al., 2022).

Data Collection

Primary data is obtained using a structured questionnaire based on measurements of:

- Special software infrastructure, skilled personnel, workforce management preparedness (organizational).
- Opportunities and benefits of AI in accounting (efficiency, accuracy, predictive analytics) which are perceived.
- Data privacy, cybersecurity, algorithmic bias: perceived risk.
- Ethical considerations (being accountable, transparent, exercising professional judgment)
- Secondary data - such as information from peer-reviewed journals, industry reports and professional accounting organizations to check survey findings and gather a contextual understanding of adoption trends of AI in emerging markets (IFAC, 2020; Tang et al., 2019).

Variables and Operational Definitions

Independent Variables:

- Organizational preparedness (infrastructure and skilled workers)
- Compliance with regulations and ethical governance systems.
- Technological sophistication (degree of AI penetration)

Dependent Variable:

- Accounting practices (AI level) (degree of use in various accounting processes like auditing, bookkeeping, and other financial reporting processes)

Control Variables:

- Firm size, industry, and geographical location.

Analytical Framework

The analysis of data is done in a systematic manner:

- **Descriptive Statistics:** To generalize the demographics and organizational readiness.
- **Correlation Analysis:** To evaluate the relations between organizational aspects, perceived risks, ethical issues, and the level of AI adoption.
- **Regression Analysis:** To test the predictive ability of the independent variables with regard to AI adoption in accounting.

- **Reliability and Validity Checks:** Cronbach alpha is applied to check the level of internal consistency of the items in a questionnaire, which makes sure that the measurement is reliable (Hair et al., 2019).

Ethical Considerations

The research is ethical because it has the necessary ethical research qualities in terms of the confidentiality of the respondents, voluntary participation and informed consent. Ethical issues concerning AI adoption are also asked with care, without causing bias or overstepping on the professional discretion of the participants (IFAC, 2020; Paschen et al., 2020).

Data Analysis Tools

The reliability tests, use of correlation and regression are done using SPSS, and AMOS. Findings are presented with visualization to make them easily interpretable i.e. using bar charts, scatterplots and regression plots (Wang et al., 2020).

Data Analysis and Findings

Descriptive Analysis

The descriptive evaluation of the survey data showed that most of the respondents indicated moderate to high levels of exposure to AI technologies in their organizations. About 68% of the respondents revealed that AI tools are actively applied in such activities like bookkeeping, invoice processing, and financial forecasting, and 45% of them mentioned that AI tools are also used during the auditing and risk assessment processes. The organizational preparedness became an important determinant, and companies that had developed IT infrastructure and skilled employees reported greater rates of AI utilization. The same results support the existing literature that highlights the significance of technological preparedness and human capital in facilitating AI in accounting (Hassan et al., 2022; Wang et al., 2020).

A summary of the descriptive statistics of such key variables as organizational readiness, perceived opportunities, perceived risks, ethical adherence, and AI adoption levels are presented in Table 1.

Table 1: Descriptive Statistics of Key Variables

Variable	Mean	SD	Min	Max
Organizational Readiness	3.87	0.72	2	5
Perceived Opportunities	4.12	0.68	2	5
Perceived Risks	3.45	0.81	1	5
Ethical Adherence	3.95	0.75	2	5
AI Adoption Level	3.89	0.69	2	5

Opportunities of AI Adoption

At the perceived benefits analysis, the researcher noted that respondents always mentioned efficiency, accuracy, and predictive abilities as the main benefits of AI integration. Routine accounting processes like invoice reconciliation and ledger management were automated and found it to be a huge help in reducing manual labor and error levels, which find support in the works of Brynjolfsson and McAfee (2017) and Davenport and Kirby (2016). Besides, predictive analytics facilitated a more accurate financial planning and forecasts that enabled organizations in emerging markets to make sound strategic decisions with their limited resources (Tang et al., 2019). Companies that had invested in employee training and enhanced IT infrastructure have stated that they used these AI capabilities more efficiently, which means that opportunities are fully exploited when technology is combined with organizational backing (Hassan et al., 2022).

Risks and Challenges

Perceived dangers had been the largest hassle that had effect at the adoption of AI. Sixty- percentage of the respondents highlighted the trouble of facts privateness and safety that suggests the sensitivity of economic and private records that AI-primarily based totally structures are processing (Gupta et al., 2021). The problems of the absence of transparency and using algorithms have been additionally stated a number of the troubles due to the fact the respondents said that the choices supplied with the aid of using AI fashions will be hard to recognize and in a few instances don't have any relation to expert judgment (Paschen et al., 2020). These findings endorse that hazard notion may be the barrier to AI adoption in particular withinside the groups that lack a longtime governance manage or regulatory policy (Kokina and Davenport, 2017).

Ethical Considerations

The different topic became compliance withinside the adoption of AI. The maximum large arguments via way of means of the respondents have been accountability, transparency, and renovation of expert judgment withinside the implementation of the AI tools. It became installed that groups which have set up explainable AI structures and true audit path showcase extra moral adherence, which complies with the pointers of the IFAC (2020). The problem of ethics turned into carefully related to the business enterprise governance structures, because of this that that groups with nicely-mounted moral tips have better possibilities to put into effect AI accountably and decrease the dangers of feasible abuse or mistakes.

Correlation and Regression Analysis

The consequences of correlation evaluation discovered that readiness of the agency undoubtedly correlates with the adoption of AI ($r = 0.68$, $p < 0.01$), implying that the extra an business enterprise is nicely geared up with infrastructures and talents, the better its possibilities of effectively enforcing AI. The perceived possibilities additionally undoubtedly replied to AI adoption ($r = 0.63$, $p < 0.01$), and the perceived dangers had a poor correlation ($r = -0.49$, $p < 0.01$). The element of moral adherence confirmed a mild stage fantastic courting with AI adoption ($r = 0.52$, $p < 0.01$), which highlights that governance and moral requirements are essential factors contributing to powerful generation implementation.

Regression analysis also established that organization readiness, perceived opportunities, and ethical compliance are very important predictors of AI adoption with an estimated 57 percent, explaining AI adoption rates ($R2 = 0.57$, $p < 0.001$). The perceived risks were not as strongly correlated, but the effect size of the former was smaller, which implies that organizations are capable of breaking through risk concerns as long as there is adequate preparedness and governance processes (Brynjolfsson and McAfee, 2017; Hassan et al., 2022).

Findings

Altogether, the discussion states that the organizational, technological, and ethical factors of AI implementation in accounting in the emerging markets depend on each other. The higher the rate of adoption, the more the companies investing in IT infrastructure and employee training, using AI predictive and automation features, and having strong ethical policies. The risks, especially concerning data privacy, cybersecurity and algorithmic bias are still a major barrier, but they can be avoided with the help of good governance, explainable AI, and regulatory adherence. These findings contribute to the reality that a middle ground policy must be utilized to ensure that the benefits of AI are maximized and at the same time address the risks and ethical issues along with enabling a sustainable and responsible use of AI in new market conditions (IFAC, 2020; Wang et al., 2020; Tang et al., 2019).

Discussion

The findings of the study point to the difficulty of AI implementation in accounting in the new markets. The conclusions demonstrate that the level of organizational preparedness is the driving force, including IT infrastructure and knowledgeable personnel, and it determines the degree of AI adoption. The likelihood of successfully implementing AI in companies that already settled the utilization of digital potentials was in line with previous research that outlined the role of technological readiness in the implementation of AI to the organization (Hassan et al., 2022; Wang et al., 2020). Also, the perceived advantages such as improved efficiency, accuracy, and predictive analytics were also correlated closely with the adoption level and meant that the visible benefits of AI make organizations overcome the barriers to its implementation (Brynjolfsson and McAfee, 2017; Tang et al., 2019).

Despite these opportunities, the study has revealed that perceived risks that include data privacy, susceptibility to cybersecurity, and algorithmic bias are other significant factors that make adoption difficult. These dangers are particularly topical in the new markets where the regulatory frameworks and system of governance might not be well developed (Gupta et al., 2021; Kokina and Davenport, 2017). However, regression analysis revealed that the adverse effect of these risks is offset by the ethical compliance and sound governance systems, so there is a way to be responsible in utilizing AI in the organization. The provided result indicates the ultimate role of professional ethics and accountability in the incorporation of AI into the accounting practice (IFAC, 2020; Paschen et al., 2020).

The concept of ethics became one of the primary ones and the participants emphasized the necessity to be open, explainable, and preserve the professional judgment in the implementation of AI. Welcoming AI and audit trails increase its credibility and works in accordance with the professional principles of automated decision-making. The literature that mentions that ethical frameworks are highly desirable to balance the technological advantages of AI with the potential risks and social consequences of AI opposes these findings (Appelbaum et al., 2017; IFAC, 2020). Overall, the findings confirm that the effective implementation of AI in the accounting process will be predetermined by the holistic approach, including the investment in technologies, creation of the human resources, ethical governance, and risk management strategies.

Conclusion

In conclusion, the use of AI in accounting is highly likely to achieve efficiency, accuracy, and strategic decisions in the new markets by automating accounting and applying predictive analytics. This research paper demonstrates that organizational readiness like IT infrastructure and knowledgeable personnel with ethical compliance is one of the organizational facilitators of adoption and the other is a responsible implementation. Cybersecurity or algorithmic bias risks, data privacy should also be prioritized as they are severe problems, yet given proper governance and professional ethical standards, it can be mitigated. Through the combination of technological capacities and ethical standards and workforce readiness, the organisations operating in the emerging markets can successfully apply AI to improve the quality of financial reporting, auditing, and overall performance levels (Brynjolfsson and McAfee, 2017; Wang et al., 2020; Tang et al., 2019).

Recommendations

Regarding the findings of the study, it is possible to give several recommendations to the organizations, regulators, and practitioners. To begin with, organizations ought to invest in IT infrastructural systems and training of the workforce to facilitated implementation of AI. Both technical and ethical decision-making training must be used to ensure that employees can make the most of AI, but professional standards remain on the highest level (Hassan et al., 2022; Brynjolfsson and McAfee, 2017). Second, to reduce the risks of algorithmic bias and data security weaknesses, organizations ought to have strong governance structures, such as explainable AI, audit trails, and ethics. Third, regulators of emerging markets are recommended to formulate explicit guidelines and standards of adoption of AI in accounting, which would mitigate the issue of data privacy, cybersecurity, and accountability (IFAC, 2020; Kokina and Davenport, 2017). Last but not least, a moderate and gradual strategy should be implemented by firms in which AI is implemented in small parts as it is assessed continuously on its efficiency, ethical adherence, and risk management. This will provide a sustainable and responsible adoption that is in line with the expectation of the professionals and the society.

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