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ARTHAVAAN

Prof. Saloni Gupta
Editor-in -chief, Arthavaan

Dear Readers,

Welcome to the latest edition of Arthavaan, where we delve into the ever-evolving realms of finance, commerce, and economic trends. As the Editor of this esteemed publication, I am delighted to present a collection of insightful articles and analyses that promise to enlighten, challenge, and inspire.

Within the dynamic landscape of the Indian financial market, alternative investment funds (AIFs) have evolved over the past few years as a popular investment vehicle, offering investors a unique avenue to diversify their portfolios and tap into previously untapped sectors. At its core, an Alternative Investment Fund is a pooled investment vehicle that differs from conventional mutual funds and stocks. What sets AIFs apart is their ability to invest in a diverse range of assets beyond traditional stocks and bonds. This flexibility allows investors to search alternative asset classes, including private equity, real estate, hedge funds, and infrastructure projects. The main advantage of AIFs lies in their potential to enhance portfolio diversification. Traditional investments are often susceptible to market fluctuations and economic downturns. AIFs provide a means to spread risk by entering into non-traditional, potentially high-return sectors. This diversification can be especially appealing to investors seeking to mitigate risk while optimizing returns. A unique feature of AIFs is their ability to deal with investors with varying risk appetites. With different categories such as Category I (focusing on start-ups, small and medium enterprises), Category II (real estate and private equity), and Category III (trading in listed or unlisted derivatives), investors can choose funds that align with their risk tolerance and financial goals.

In the context of India, AIFs play a crucial role in supporting economic growth initiatives. By investing in sectors such as infrastructure, AIFs contribute to the development of critical projects that drive progress. This supports the government's vision to enhance economic development through innovative and diverse financing mechanisms. The Securities and Exchange Board of India (Alternative Investment Fund) Regulation, 2012 regulates AIFs to ensure investor protection and market integrity. The regulatory framework provides a structured environment that fosters responsible investing while mitigating potential risks associated with alternative assets.

While AIFs hold immense promise, challenges exist. Regulatory compliance, transparency, and addressing potential systemic risks are critical aspects that demand ongoing attention. AIFs require a substantial financial commitment, typically with a minimum investment threshold of 1 crore. This criterion ensures that the participants are not just affluent but also deeply understand complex investment strategies. Yet, the ₹1 crore minimum investment requirement is an entry hurdle, attracting only sophisticated investors looking for a bespoke investment strategy. Over the previous seven years, the AIF category in India has increased tenfold, with assets under administration totaling ₹7 trillion, according to the Indian Association of Alternative Investment Funds (IAAIF). These investments often have a 10-year time horizon, necessitating financial advisors' continuous engagement with investors to manage expectations. A decade ago, the primary financial support for India's Alternative Investment Funds (AIFs) came from foreign institutional investors (FIIs). Over time, there has been a notable shift with an increasing investment by domestic investors playing a pivotal role in propelling the industry forward. Now, more and more people from India are investing in AIFs, making up a big part of the funds, a substantial 80-90% of the funds raised originate from domestic investors. The prevailing trajectory strongly suggests that AIFs could become a huge industry in the future and get close to the size of India's ₹46 trillion mutual fund industry. AIFs can redefine how individuals and institutions grow and protect their wealth in the years to come. As the AIF industry continues to evolve, it must collaborate with regulators to strike the right balance between innovation and safeguarding investor interests.

Prof. Saloni Gupta
Editor-in-Chief, Arthavaan
Principal, Bharati College

ARTHAVAAN

Dr. Roopa Johri
Managing Editor, Arthavaan

Dear Esteemed Readers,

As we embrace the closure of another successful year with the publication of the Arthavaan Dec 2023 issue, I extend my heartfelt gratitude to each one of you for your continued support and engagement with our journal.

I want to take a moment to recognize the invaluable contributions of our subject area experts who dedicated their time and expertise to the blind review process. Your thorough evaluations and constructive feedback have been instrumental in maintaining the high standards of academic excellence that Arthavaan strives to uphold. Your commitment to scholarly integrity is deeply appreciated and vital to the peer-review process, ensuring the quality and credibility of the research published in our journal.

As we move forward, I invite our readers to actively engage with the content of the Dec 2023 issue and provide us with your feedback and insights. Your perspectives are invaluable to us as we continuously strive to enhance the quality and relevance of our publication. Your feedback not only helps us improve but also strengthens the bond between the journal and its readership, fostering a vibrant scholarly community. On behalf of the editorial team, I extend our sincere appreciation to each of you for your unwavering support and commitment to Arthavaan. Your contributions are integral to our shared vision of promoting academic excellence and fostering intellectual dialogue.

Special thanks to Prof. Saloni Gupta, Principal and Editor-in-chief, for her unrelenting support and guidance. I am indebted to Dr. Vandana Bansal, Dr. Nishtha Bhushan, Dr. Sonia Kaushik, Dr. Arshi Zareen, and Mr. Alok

Anand for your expertise and professionalism, which enriches the academic discourse and advances knowledge in our respective fields. Your dedication to the advancement of scholarly research is invaluable. I can't thank Ms. Swati Khanna enough for her invaluable support who joined us late but has been at the helm of affairs all through.

Thank you for your continued support, and we look forward to your feedback as we embark on another year of scholarly exploration and discovery.

Dr. Roopa Johri
Managing Editor, Arthavaan
Department of Commerce
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India and UK: Impact of Growth-Trade Relationship

Dr Archana Agarwal[1]

Abstract

India and UK are on the cusp of finalizing an India-UK FTA. This would strengthen a new dimension to their relationship especially after Brexit. The successful conclusion of the India-UK FTA is as much an economic gain as it is a political gain. The current Hindu UK Prime Minister, Mr. Rishi Sunak, having Indian origins, is under pressure to inject a new life-line to the flailing British economy. India, on the other hand, with its newfound confidence is being recognized internationally as the only promising democratic Asian country to counter an aggressive China. In the foreign policy calculus, an FTA would bring not just economic advantages to both India and UK but also have a crucial influence on the changing geo-political dynamics of the world. This paper examines the qualitative and quantitative aspect of India-UK relationship to understand the importance of strengthening political relations between the two countries and also analyze the impact of Growth-Trade relationship and how it impacts India economically.

Keywords: India-UK, FTA, Growth-Trade Relationship, Political Relations, Economic Impact

1. Introduction

India and the United Kingdom (UK) have transformed their historical ties to a robust, wide-ranging multi-faceted relationship which is mutually beneficial to both the partners. Brexit has added a new dimension to UK's international relationships including economic ties. A divorce from the European Union (EU) has extensive domestic and international implications for the UK. In order to restrict the negative impact of Brexit, UK is keen to strengthen ties with countries around the world. It is pursuing a series of Free Trade Agreements (FTAs) with countries like Canada, Japan, Korea, Mexico, Norway, Switzerland, Turkey and with the United States (USA). As an emerging economy, India is also high on the list of countries for a possible FTA for the UK. In 2021, India and UK agreed to 'Comprehensive Strategic Partnership' laying the roadmap 2030 for an ambitious joint cooperative vision.

2. Brexit: Causes and Consequences

According to Bhattacharya (1994), the UK always had a somewhat awkward relationship with the EU. UK never considered itself to be European but rather continued to bask in the Imperial glory. Being part of the EU was as much of an external problem as it was an internal problem for the UK. Political leaders are adept at building narratives and shaping public opinion (Agarwal, et. al., 2023). The narrative for Brexit became a politically charged subject divided into two groups of opposing viewpoints. The first group advocated a separation from the EU, while the second, lobbied to remain a member of the EU. The referendum to exit the EU was therefore, a political move, which would help London to have greater authority to bind the empire together. Its domestic issues needed urgent attention in

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order to keep the secessionist movements in Scotland, Northern Ireland and even Wales in check. A secession within the UK would have an adverse economic effect on UK's constituent members and would only be offset, if the secession by any of its members is matched with a reclaimed EU membership (Brakman, Garretsen & Kohl, 2023). Scottish secession being a case in point. However, according to Huang et al. (2021) the costs of Scottish secession would still be greater even if UK were to rejoin the EU. Moreover, the free movement of people was a great concern for the UK, which allowed EU citizens to move freely within the bloc. For UK, the head-ache-causing immigrants were labelled more as Hungarians, Poles, Romanians and not necessarily the Indians or the Pakistanis (Vecino, 2021).

Opinion on Brexit remains divided amongst academics with a strong leaning towards the high economic costs for the UK. Hence, the UK needs to counterbalance the negative consequences by taking appropriate measures. Striking an FTA with the EU or conclude FTAs (or trade agreements) with EU members bi-laterally is high on UK's bucket list. Even with non-EU members, the challenge is to enter into trade discussions afresh, an activity that was previously delegated to the EU as a collective responsibility. It is also well-known that geography and physical distance play an important role in trade deals (Anderson, 2011). UK's geographical proximity with the EU is a natural advantage. However, findings by Oberhofer and Pfaffermayr (2021) indicate a reduction in the range of 7.2% and 45.7% in UK's exports to the EU in the period six years after Brexit. Domestic trade and increased trade with non-EU countries can only offset the negative impact of Brexit on trade to a limited extent. Similar arguments are put forth by Dhingra and Sampson (2022) that trade agreements will certainly help the UK in absorbing the blow of Brexit, but the overall impact of Brexit will continue to hurt UK.

3. Evolving India-UK relations

Brexit, concluded in 2020, marks the separation of the UK with the EU. This poses a major shift in UK policy and its dealings with non-EU countries. The changing global landscape has brought in unprecedented and unimaginable changes, which threaten the existing status-quo of the world. An assertive China, the growing threat of North Korea and nuclear capabilities of Iran are rapidly re-shaping the age-old alliances replacing them with newer ones. The growing nationalism in certain countries are threatening the liberal ideology and its core principles of democracy and the rule of law. Even trade negotiations are influenced by the altering equations between emerging economies and developed nations due to rapid shifts in geopolitical alignments (Curran, et. al., 2021).

In the midst of these changes, especially the rise of China, the European Union (EU) came out with its Global Strategy in 2016 (EUGS). This marks a significant shift of EU's priorities, objectives and thinking in dealing with other countries. The EUGS is followed by an EU India Strategy in 2018 (EUIS), which outlines its relationship with India.

On the lines of the EUGS, the UK released its own strategic document called *"Global Britain in a Competitive Age", The Integrated Review of Security, Defence, Development and Foreign Policy*[1], which also outlines its relations with India, among others.

The strategic document recognises India to be an important partner for the UK along with China and Japan. China is perceived as a 'state-based threat' and the UK needs to develop capabilities to counter the Chinese growth and reduce UK's dependence on China. The strategy document acknowledges the challenges posed by the growing influence of China, it also recommends to engage with China at various levels – to compete, counteract and cooperate – wherever necessary. The

[1] Global Britain in a competitive age: The Integrated Review of Security, Defence, Development and Foreign Policy. Presented to Parliament by the Prime Minister by Command of Her Majesty. March 2021.
https://assets.publishing.service.gov.uk/media/60644e4bd3bf7f0c91eababd/Global_Britain_in_a_Competitive_Age-_the_Integrated_Review_of_Security__Defence__Development_and_Foreign_Policy.pdf

underlying importance of UK's Indo-Pacific strategy offer an opportunity to strengthen India-UK relationship (Pant & Milford, 2021).

India and the UK see the world through different prisms. India's concerns regarding a belligerent China, which reaches India's backyard due to its geographical proximity are a greater challenge than for the UK. However, the growing influence of China in the Indo-pacific is seen as an increasing risk to UK's interests (Misra, 2022). Moreover, a democratic India remains better than an autocratic China (Agarwal, et. al., 2021). And whereby, the UK sees Russia as an immediate and acute threat, in contrast, India, continues to maintain a cordial relationship with Russia.

Within the EU, UK no longer enjoys the same treatment that is meted out to EU members. UK needs to iron out the challenges posed by the Brexit. The timing of COVID-19 has spoilt the euphoria of Brexit. An early economic recovery would help UK to justify its decision and supress growing resentment from its citizens, especially Scotland. The British Prime Minister, Rishi Sunak has been under flak for his controversial policy of deporting illegal migrants to Rwanda (Lall, 2023). Thus, the Indian origin Prime Minister of UK is keen to fast-track negotiations to sign the India-UK FTA not just to offset the economic losses but to score a political victory as well. An increased trade between UK and India would strengthen economic ties and also sustain the image of UK as a relevant global player. A large section of British policy makers recognise the rising stature of India at the global level and would like to deepen their relationship with India (Wintour, 2021). The UK is in a hurry to conclude trade agreements with non-EU states to minimise its economic damage (Gopalakrishnan, et. al., 2021).

An economy integrated with other economies helps in attracting not just investments and labour flows but it also boosts trade in goods and services (Dhingra, et.al., 2018). India with its large market size, a growing economy with a GDP of USD 2.8 trillion in 2019 and having an unrealised growth potential continues to be not just an attractive destination but a strategically important player in the global village (Poitiers, et.al., 2021). UK understands the importance of India and recognises India as an important partner. Therefore, UK is keen to deepen not just its economic relationship with India but extend this relationship across critical sectors of defence and security.

Even though India refrained from commenting on the Brexit decision, it viewed Brexit as an 'unfortunate development that weakened the west' (Chaudhuri, 2020; Kohnert, 2021). India cannot undermine the importance of UK in trade, defence hardware or political cooperation. The UK along with the USA continues to be a significant and vital partner across all sectors (Ladwig, 2021). Realising the central role that UK occupies in Indian growth, the External Affairs Minister of India, S. Jaishankar was expressed his optimism to find a 'landing point' in India-UK trade negotiations (Canton & India, 2023).

Given the above background of India-UK relations, the following sections look at the empirical analysis of the nexus between growth and trade of India with the UK.

4. Research Methodology

The empirical analysis is undertaken using time series data for the period 1993-2022 from secondary sources for the variables India's Gross Domestic Product (GDP), India's Exports to UK and India's Imports from UK. The Indian GDP is taken from World-Bank data source. While the data for export of goods and services has been taken from UNComtrade, data for export and import of services is taken from the OECD data source.

The time-series data has been analysed using ARDL (Autoregressive Distributed Lag) modelling to find a causal relationship between the three variables namely, India's GDP (represented by Y), and India's trade represented by its exports and imports with UK. India's exports of goods to UK are represented by Xg and India's imports of goods from UK are represented by Mg. Similarly, India's exports of services to UK are represented by Xs and India's imports of services from UK are represented by Ms. The total exports (both goods and services) of India to UK are represented by Xt and total imports (both goods and services) of India to UK are represented by Mt. The level of significance is taken at 5%. The logarithm values of the variables are taken to run the analysis using E-views software.

Before conducting the ARDL modelling, the data has been checked for stationarity. Augmented Dicky Fuller Test (ADF) applied shows all the variables to be stationary at I(1).

5. India-UK Trade Relations

According to the data published by the Department of Business and Trade, Government of UK dated 19th October 2023[2], India is 12th largest trading partner of the UK in the four quarters to the end of Q1 2023 accounting for 2.1% of total UK trade. Total trade in goods and services between India and the UK was GBP 36.3 billion in the four quarters to the end of Q1 2023. This is an increase of GBP 9.2 billion (34.2%) in current prices from the four quarters to the end of Q1 2022.

The total UK exports to India amounted to GBP 14.7 billion in the four quarters to the end of Q1 2023, which is an increase of GBP 4.5 billion (44.2%) in current prices compared to the four quarters to the end of Q1 2022. The UK exports in goods in current prices for the four quarters to the end of Q1 2023 was to a value of GBP 8.1 billion, which amounts to 54.8% of total exports of goods for the UK. During the same period, the export of services amounted to GBP 6.7 billion, denoting a 45.2% export of services of UK to India. Compared to the four quarters to the end of Q1 2022, the change is an increase of 52.5% for goods exports and 35.3% of services exports to India.

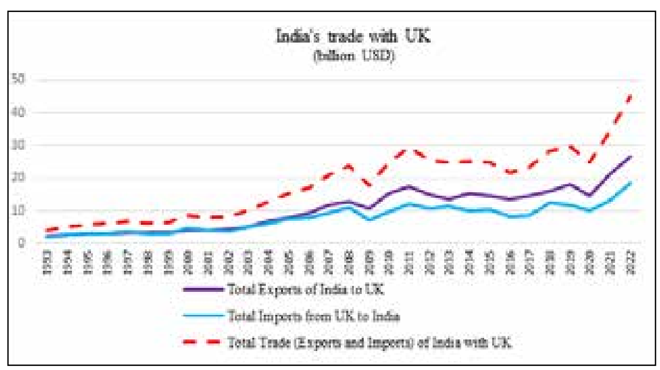
Total UK imports from India amounted to GBP 21.6 billion in the four quarters to the end of Q1 2023, which is an increase of GBP 4.7 billion (28%) in current prices compared to the four quarters to the end of Q1 2022.

During the same period, the UK import of goods from India were for GBP 10.5 billion and UK import of services from India were of GBP 11 billion. The increase in amounts of UK imports of goods and services were 14.3% and 44.1% respectively. This shows that UK's share of imports of services from India saw a big jump for the same period of 2022. UK exported goods worth GBP 8.1 billion to India while the share of UK exports of services to India was GBP 6.7 billion. The share of goods exported by UK to India increased by 52.5% while those of services increased by 35.3% for the same period in 2022.

As per the published data, this shows a total trade deficit of GBP 6.8 billion reported by UK with its trade with India, as compared to a deficit of GBP 6.6 billion in the four quarters to the end of 2022. In the four quarters to the end of Q1 2023, the trade in goods deficit for the UK with India amounts to GBP 2.5 billion compared to a trade in goods deficit of GBP 3.9 billion in the four quarters to the end of Q1 2022. A trade in services deficit for UK with India for the four quarters to the end of Q1 2023 stood at GBP 4.4 billion as compared to trade in services deficit of GBP 2.7 billion in the four quarters to the end of Q1 2022.

Graph 5.1 shows the flow of India's trade with the UK and the total trade of India (including exports and imports) with the UK.

Graph 5.1: India's trade with UK



The values of total trade, total exports and total imports include data for both goods and services Data source for goods: UNComtrade; Data source for services: OECD

[2] Data in this section taken from the Department of Business and Trade, Government of UK, data sources from the latest ONS publication of UK total trade: all countries seasonally adjusted data, published 19.10.2023

The empirical analysis is carried out for the trade in goods, for trade in services and by taking the total trade (both goods and services) with UK and its relationship with India's GDP. A comparison of the results gives a holistic view in order to understand the growth trade relationship between India and the UK.

5.1 India's Growth-Trade Relationship With The Uk

The causal relationship between India's trade with UK and India's GDP is analysed, whereby India's GDP (denoted by Y), India's trade in goods with UK (denoted by Xg and Mg for exports and imports respectively) and India's trade in services with UK (denoted by Xs and Ms for exports and imports respectively) and finally the total trade with UK (which includes both goods and services) (denoted by Xt and Mt for total exports and total imports respectively) have any causal relationship with each other. Each of the variables has been taken as a dependent variable while the other variables are taken as independent variables in order to infer the results from the analysis. The natural logarithm of all variables is taken to run the empirical analysis in ARDL. The results of the empirical analysis are shown for trade in goods, trade in services and total trade. These are then compared in order to understand the trade relationship of India with the UK and its impact on India's GDP.

5.1.1 India's Trade in Goods with the UK

Table 5.1.1 shows the relationships amongst variables in the short-run as well as in the long run. In the short run, on an average, a 1 per cent change in Ln(Xg) will cause a 0.69 per cent change in Ln(Y), while a 1 per cent change in Ln(Mg) will cause a negative 0.29 per cent change in Ln(Y), ceteris paribus. A 1 per cent change in Ln(Y) will cause a 1.09 per cent in Ln(Xg) and a 1 per cent change in Ln(Mg) will cause a 0.44 per cent change in Ln(Xg), ceteris paribus. Similarly, a 1 per cent change in Ln(Y) will cause a negative change of 2.09 per cent change in Ln(Mg) and a 1 per cent change in Ln(Xg) will cause a change of 1.94 per cent in Ln(Mg), ceteris paribus.

The ARDL estimates show a bi-directional causality amongst the variables in the short-run. The same bi-directional causality is seen in the long-run relationship amongst the variables. This means that there is strong relationship amongst the variables studied. The analysis shows that India's trade in goods with the UK causes growth.

Thus, a bi-directional strong relationship exists between the variables in India's growth and its trade in goods with UK.

Table 5.1.1: Relationship between India's Growth and Trade in Goods with UK

		Explanatory Variables			Short-run causality	λ (p-value)	Long-run causality
		β (p-value)					
		Ln(Y)	Ln(Xg)	Ln(Mg)			
Explained Variable	Ln(Y/Xg, Mg)		0.697 (0.00)	-0.29 (0.00)	Xg→Y, Mg→Y	-0.22 (0.00)	Xg→Y, Mg→Y
	Ln(Xg/Y, Mg)	1.09/-0.85* (0.00)		0.44 (0.00)	Y→Xg, Mg→Xg	-0.60 (0.00)	Y→Xg, Mg→Xg
	Ln(Mg/Y, Xg)	-2.095/1.54* (0.00)	1.94 (0.00)		Y→Mg, Xg→Mg	-1.12 (0.00)	Y→Mg, Xg→Mg

*: (t-1); β represents the coefficient; λ represents the error correction coefficient

Source: Authors calculations using Eviews12

5.1.2 India's Trade in Services with the UK

Table 5.1.2 shows the results of the ARDL calculations for India's trade in services with the UK and its effect on India's GDP. There is no short run or long run causal relationship of Xs on GDP. For the import of services, there is no short-run or long-run causal relationship on GDP. There is absence of either a short-run or a long-run relationship between India's GDP and its trade in services with UK.

However, there is a causal relationship between India's GDP (Y) and its export of services to UK (Xs). A 1 per cent change in Ln(Y) will cause a 0.96 per cent change in Ln(Xs) in the short-run, ceteris paribus. At the same time, a 1 per cent change in Ln(Ms) will cause a 0.51 per cent change in Ln(Xs) in the short-run, ceteris paribus. A 1 per cent change in Ln(Xs) will cause a 0.51 per cent change in Ln(Ms), ceteris paribus.

A strong relationship exists between Ln(Ms) and Ln(Xs), whereby imports of services is causing exports of services. This is due to the presence of a short-run as well as a long-run relationship between India's import of services from UK and India's export of services to UK.

Table 5.1.2: Relationship between India's Growth and Trade in Services with UK

		Explanatory Variables			Short-run causality	λ (p-value)	Long-run causality
		β (p-value)					
		Ln(Y)	Ln(Xs)	Ln(Ms)			
Explained Variable	Ln(Y/Xs, Ms)		--	---	--	No Cointegration	--
	Ln(Xs/Y, Ms)	0.96 (0.04)		0.51 (0.00)	Y→Xs, Ms→Xs	-0.59 (0.00)	Ms→Xs
	Ln(Ms/Y, Xs)	--	0.51 (0.00)		Xs→Ms	No Cointegration	--

β represents the coefficient; λ represents the error correction coefficient

Source: Authors calculations using Eviews12

The relationship between export of services to UK (Xs) and import of services from UK (Ms) have a bi-directional causal relationship in the short-run.

5.1.3 India's Total Trade with the UK

Table 5.1.3 shows the results of the ARDL model for the total trade between India and the UK, which include trade data of goods and services taken together. In the short run, on an average, a 1 per cent change in Ln(Xt) will cause a 0.65 per cent change in Ln(Y), while a 1 per cent change in Ln(Mt) will cause a negative 0.30 per cent change in Ln(Y), ceteris paribus.

Table 5.1.3: Relationship between India's Growth and Total Trade with UK

		Explanatory Variables			Short-run causality	λ (p-value)	Long-run causality
		β (p-value)					
		Ln(Y)	Ln(Xt)	Ln(Mt)			
Explained Variable	Ln(Y/Xt, Mt)		0.65/-0.24* (0.00)	-0.30 (0.00)	Xt→Y, Mt→Y	-0.17 (0.00)	Xt→Y, Mt→Y
	Ln(Xt/Y, Mt)	1.03/-0.80* (0.00)		0.54 (0.00)	Y→Xt, Mt→Xt	-0.67 (0.00)	Y→Xt, Mt→Xt
	Ln(Mt/Y, Xt)	-1.15/0.77* (0.00)	1.31 (0.00)		Y→Mt, Xt→Mt	-1.18 (0.00)	Y→Mt, Xt→Mt

*: (t-1); β represents the coefficient; λ represents the error correction coefficient

Source: Authors calculations using Eviews12

A 1 per cent change in Ln(Y) will cause a 1.03 per cent in Ln(Xt) and a 1 per cent change in Ln(Mt) will cause a 0.54 per cent change in Ln(Xt), ceteris paribus. Similarly, a 1 per cent change in Ln(Y) will cause a negative change of 1.15 per cent change in Ln(Mt) and a 1 per cent change in Ln(Xt) will cause a change of 1.31 per cent in Ln(Mt), ceteris paribus.

The ARDL estimates show a bi-directional causality amongst the variables in the short-run. The same bi-directional causality is seen in the long-run relationship amongst the variables. This means that there is strong relationship amongst the variables studied. The analysis shows that India's total trade with the UK causes growth.

6. Conclusion

India has an Export Led Growth (ELG) and Growth Led Exports (GLE) in its trade of goods with the UK. The analysis reveals an Import Led Growth (ILG) and Growth Led Imports (GLI) in its trade of goods with UK. As the value of the coefficient of GDP is negative in the case of import of goods, it confirms to the 'trade theory' that imports are leakages in growth. Hence, we find that GDP is negative when we import goods from the UK. An Export Led Import (ELI) and Import Led Exports (ILE) is also the case for India's trade in goods with the UK.

In India's trade in services with UK, India has GLE in its trade of services with the UK. An ILE and ELI is also the case for India's trade in services with the UK.

While India has an ELG, it also shows a GLE in its total trade (goods and services) with the UK. An ILG and GLI is also shown in the analysis. As the value of the coefficient is negative in the case of total import of goods, it effects the GDP of the country adversely. An ELI and ILE is also the case for India's total trade (goods and services) with the UK.

The analysis highlights the interdependence of all variables studied. Hence, the policy-makers need to understand the direction of India-UK economic relationship and chalk out the most appropriate policy reforms, which are in the interest of India. A carefully negotiated FTA from the Indian perspective needs to ensure that imports of consumption goods is kept in check, as India pursues its ambition of becoming a 5 trillion economy by 2027. Hence, policies, which have a positive impact on our GDP, will be beneficial for India.

India's influence at the global field will be another test, which needs to be manoeuvred strategically and artfully. Forming and maintaining new alliances will not be easy. Opponents of new alliances often feel betrayed and resort to violent means to put an end to such alliances. An unthinkable alliance between Israel- and Saudi Arabia offered hope of reconciliation between Israel and the Arab world. However, this alliance has been terminated due to the unprovoked attack by Hamas and a brutal response by Israel on the Gaza strip. The enormity of this incident is leading to a war like situation in the whole of the middle-east with leaders across the world involved to contain it from spreading further.

India needs friends on its side. UK is also on the look-out for building alliances to remain relevant at the global stage. Strong economic relations will open doors for a deeper and profound political relationship. Such partnerships will restore faith in a rule-based international order while maintaining peace, harmony, and prosperity globally.

Recommendations for Further Research: First and foremost, the research through the analysis of trade data between India and UK outlines the broad relationship between trade and growth and its consequences for both India and the UK. While suitable policies can be suggested based on the outcome of this research, a further sectoral analysis of most-traded products between the two nations will forecast the potential of increasing product-wise trade between India and the UK. An analysis using forecasting techniques will provide specific areas of intensifying trade that will guide policy-makers to take right decisions in order to enhance trade and growth for India. India needs to introduce policies which enhance exports to the UK. The composition of imports from UK need to be tilted more towards capital goods, which eventually boost production capabilities of the Indian industry.

To understand the composition of goods to be traded, further analysis complementing the current research needs to be carried out.

Secondly, the same analysis as this research, showing a growth-trade relationship can be applied for other economies trading with India like the European Union and its member constituents, trading partners of India in South-East and East Asia, etc. The analysis will enhance research by experimenting with multiple combinations of variables and evaluate the outcomes.

Thirdly, the current research uses the trade variables namely export and import for its analysis. This work opens the possibility for further research using additional variables like investments, exchange rate, etc to understand the impact of other factors on growth. Further research will enrich the academic debate and provide evidence-based outcomes to develop the correct policy prescriptions for future growth for India

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Use of Technology in Law Enforcement-Choices and Challenges

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Abstract

The paper explores the dynamic landscape of law enforcement in the context of emerging technologies, investigating their impact on the distribution, production, and consumption of legislations. The balance between civil liberties and security requirements is examined through the lens of legal and constitutional standards, with a focus on accountability and the delicate interplay between personal freedom and security concerns. Case laws from various jurisdictions, such as Maneka Gandhi v. Union of India and Kharak Singh v. State of Uttar Pradesh, provide insights into the complex relationship between individual rights and law enforcement.

The study delves into the transformative effects of technologies like artificial intelligence, mobile applications, and the metaverse on policing practices, emphasizing ethical considerations and the need for international cooperation in regulating virtual spaces. The challenges of digital law enforcement, including cybercrime, digital evidence handling, and the cost implications of adopting technology, are discussed, highlighting the ongoing evolution of the economics of law enforcement. The analysis underscores the importance of collaboration, policy refinement, and a commitment to justice in navigating the choices and challenges presented by technology in law enforcement.

Keywords: Law Enforcement, Emerging Technologies, Civil Liberties, Accountability, Constitutional Standards, Artificial Intelligence, Mobile Applications, Metaverse, Cybercrime, Digital Evidence, Ethics, International Cooperation, Economics of Law Enforcement.

I. Introduction

1. Law enforcement- Meaning and Scope

Rule of law, which is essential for a safe society has a few requisites. For one, it is the justice system, and on the other side, it is the delivery of justice through various agencies. It needs also to strike a balance between the interests of all people and institutions un a society. Law enforcement agencies play an important role in this. The role of these agencies in enforcing law should be to balance the interests of all stakeholders like the government, the individuals and the society. There is always some tussle between to how far the enforcement agencies can push itself to compromise on certain individual rights like the right to privacy. Civil liberties are specifically compromised when technology is used in investigating crimes and even in crime prevention.

Use of force is another debatable issue as far as law enforcement in suspicious cases is concerned. Debates surrounding accountability have intensified from all directions, or to say from some of the communities, especially the minorities or marginalized. There are calls for transparency. On the other hand, investigations have become better due to use of technology like body worn cameras and forensic, which are used both ante and post happening of a crime to reduce the burden

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on the criminal justice system and more specifically the police and other enforcement officers. Evidence collection has been made easy and focus is more on evaluation of evidence.

However, there is a need to understand the balance between liberties and security requirements of the society, more particularly, by adhering to legal and constitutional standards from a universal viewpoint. This has in turn led to setting stringer legal standards. For example, the Constitution of India as much as any other Constitution in the world protects against unnecessary searches and seizures as is devised in various cases coming out as judgments from time to time. For example, the US Constitution speaks in the same tone. This is one means of setting those standards. There are laws too which protect the citizen, and even the non-citizen or a foreigner in a country from undue intrusion on his or her privacy and liberties.

Coming back to law enforcement, law enforcement personnel have a crucial role to play also in a smaller cluster of society with different or peculiar requirements, community. Moreover, community policing has emerged as a strategy to build trust and collaboration between law enforcement and communities. By engaging in positive interactions, officers aim to bridge gaps, prevent crime, and address the root causes of criminal behavior.

Law enforcer's role in society is pivotal but must be exercised with sensitivity to constitutional rights and the principles of justice. Striking the right balance between security and civil liberties remains an ongoing challenge that requires collaboration, policy refinement, and a commitment to maintaining a just and equitable society.

Law enforcement can be understood with the help of some case laws. For example, in Maneka Gandhi v. Union of India (1978) the court explained and examined the scope of the right to personal liberty under Article 21 of the Indian Constitution by emphasizing the point that right to travel abroad is included in the fundamental right to life and personal liberty. It emphasized that any law restricting personal liberty must be just, fair, and reasonable. In Kharak Singh v. State of Uttar Pradesh (1963), the court said that the concept of the "right to privacy" as an essential part of personal liberty under Article 21 of the Indian Constitution. Although not a direct law enforcement case, it has been cited in subsequent cases involving surveillance and individual rights. D.K. Basu v. State of West Bengal (1997) was a landmark case which established some rules to prevent custodial torture and inhuman treatment by law enforcement agencies. It emphasized the importance of safeguarding the rights of arrested individuals, including the right to legal representation.

The judgment of A. K. Gopalan v. State of Madras (1950) which may not be directly related to law enforcement, put in focus the tussle of preventive detention and individual liberties. It led to discussions on the balance between maintaining public order and protecting fundamental rights. ADM Jabalpur v. Shivkant Shukla (1976) also referred to as the "Habeas Corpus case," became famous for a ruling during Emergency pronounced by the then Government, suspended the right to move the courts for enforcement of fundamental rights under Article 21. The case underscores the significance of judicial review in upholding individual liberties. PUCL v. Union of India (2003) case dealt with issues related to encounter killings and custodial deaths. The court issued guidelines to investigate such incidents, emphasizing the importance of accountability and human rights.

In Selvi & Ors. v. State of Karnataka (2010) an important judgment on narco analysis, Supreme Court laid down guidelines on the administration of narco-analysis, brain mapping, and lie detector tests on suspects. The court emphasized the need to protect an individual's right against self-incrimination.

These case examples shed light on various aspects of accountability, and the delicate balance between personal liberty and security. Cases such as Kharak Singh v. State of Uttar Pradesh and Maneka Gandhi v. Union of India demonstrate the extensive scope of personal freedom outlined by the Indian Constitution. Adherence to the principles of justice, reason, and due process must always be the top priority in any legislation or enforcement action that seeks to restrict personal freedom. Two cases, D.K. Basu v. State of West Bengal and PUCL v. Union of India, investigate custodial torture and encounter abuse within the framework of the United Nations Convention Against Torture. During times of crisis, individual liberties are protected by the role of judicial review, as emphasized by ADM Jabalpur v. Shivkant Shukla and other related cases.

2. Impact of Emerging Technologies on Law Enforcement

Emerging technologies have transformed the landscape of law enforcement in the 21st century. There is an intricate relationship between these technologies and the distribution, production, and consumption of law enforcement legislations. Digital technology is transforming the field of law enforcement with the use and adoption of digital tools for crime prevention and investigation, challenges law enforcement agencies face in implementing these technologies, and the opportunities they present for improving law enforcement practices. Technology is shaping the future of policing, law enforcement agencies use, such as body cameras, surveillance systems, data analytics, and predictive policing algorithms. These have ethical and legal implications of these technologies.

3. Distribution of Law Enforcement Legislations

In an era marked by easy access to information, the distribution of law enforcement legislations has evolved significantly. Online databases and legislative portals have become the primary means of disseminating legal information to law enforcement agencies and the public. Digital technologies are being adopted and integrated into government operations. Digital tools and platforms enhance efficiency, transparency, and public services. Digital platforms for legislative information, documents, and processes are made accessible to the public. the broader implications of digital transformation in government, including the effects on policy-making processes, citizen engagement, and governance are each important to be understood in terms of data security, privacy, and accessibility. Governments face challenges while implementing digital transformation initiatives, as well as the opportunities for improving government services and operations through digital innovation.

4. Production and Consumption of Law Enforcement Legislations

The rapid pace of technological change has forced legislators to adapt by producing new laws to address emerging issues. The legislative process itself has undergone significant digital transformation, streamlining the production of legislations. Technology has influenced various aspects of the legislative process, such as bill drafting, committee work, public engagement, and voting.

Ensuring that law enforcement officers and the public understand and comply with new laws is paramount. Training and educational programs, as well as law apps that provide access to legal information, play critical roles in promoting legal literacy. Legal education, technology, and the law apps are interconnected. Individuals, including those without a legal background, can navigate legal issues, understand their rights, and access legal information using digital tools and platforms. There are pressing challenges and strategic imperatives involved in training law enforcement personnel to operate with unparalleled efficacy in the digital age. A transformational shift is necessitated by the omnipresence of technology in contemporary law enforcement, while also there is an indispensable need to equip officers with cutting-edge skills, encompassing digital forensics, cybercrime investigation, data analysis, and the proficient utilization of digital tools. Furthermore, various approaches, from hands-on exercises and simulations to the integration of technology into training curricula is the need of the hour acknowledging the ethical, legal, and resource-related complexities intertwined with this transformative endeavor. A definitive roadmap for law enforcement agencies striving to meet the formidable challenges of the digital era through advanced training protocols is a must.

5. Challenges of Digital Law Enforcement

The digital age has brought new challenges for law enforcement, including cybercrime, managing protests in the digital sphere, and the complexities of handling digital evidence. These challenges significantly affect the cost of enforcement. Digital technologies and social media have influenced protests and demonstrations, as well as the challenges this presents for law enforcement, law enforcement agencies should ideally monitor and respond to digital protests, and the legal and ethical issues associated with these challenges.

Digital technologies and social media have transformed the landscape of protests and demonstrations, and the associated challenges that law enforcement agencies face. Issues related to crowd control, communication, and the need for rapid decision-making have become a global challenge.

6. Cost of Enforcement

The adoption of technology in law enforcement necessitates substantial investments in training, equipment, and resource allocation. Balancing cost-effectiveness with the protection of civil liberties is a complex endeavor. There are costs involved in acquiring, implementing, and maintaining technology solutions, such as surveillance systems, digital evidence management, or predictive policing tools. Cost-effective strategies and considerations for agencies looking to leverage technology to enhance their operations while managing limited budgets are challenges which enforcement officers have to face. Striking a balance therefore between investing in technology and human capital, agencies have to allocate funds, personnel, and training efforts to maximize their effectiveness. The decision-making processes involved in resource allocation in a rapidly evolving technological landscape are a plenty.

Technology

Artificial Intelligence (AI) and data mining have become integral to law enforcement, aiding in predictive policing, crime analysis, and automation of administrative tasks. Body cameras and surveillance systems have improved transparency and evidence collection. Artificial intelligence (AI) and predictive policing technologies are being used to enhance the effectiveness of law enforcement agencies. AI algorithms analyze data to predict and prevent crimes, allocate resources efficiently, and improve overall policing strategies.The use of body worn cameras ease problems of accountability as all footages are recorded and legal proceeding go smooth. But body worn cameras also have been called in question for privacy concerns. However, the benefits are those of change in the attitude and behavior of both people in a community, as well as people employed in the police for the community. They are used not only for improving investigations, it also for police training using these footages. This also impact policy.

Mobile and Mobile Apps

An aspect of phones is personal use. And the use of applications or software to track a person for her data. Mobile phones follow people as they shop and may determine when and where they cast ballots. Based on commercial data, algorithms enable businesses to present things they believe people can afford while excluding those they believe they cannot. Drones are used to deliver drinks to fisherman in the middle of a frozen lake and to monitor neighbors. In future, which is not very far automatic cars might interact with one another to reduce traffic and, consequently, energy use. [1] Technology has consequences, tests norms, changes what we do or are able to do, acts for us, and makes biased decisions. The use of technology can also have adverse effects on people.[2] Technology can threaten individual autonomy, violate privacy rights[3], and directly harm individuals financially and physically.

Mobile applications that provide legal information and virtual consultations with lawyers have the potential to

[1] Friedman, B., & Nissenbaum, H. (1996). Bias in computer systems. *ACM Transactions on Information Systems (TOIS),14*(3), 330–347 mentioned in Martin, K., Shilton, K. & Smith, J. Business and the Ethical Implications of Technology: Introduction to the Symposium. *J Bus Ethics* **160**, 307–317 (2019). https://doi.org/10.1007/s10551-019-04213-9

[2] Ibid.

[3] Cole, B. M., & Banerjee, P. M. (2013). Morally contentious technology-field intersections: The case of biotechnology in the United States. *Journal of Business Ethics,115*(3), 555–574 mentioned in Martin, K., Shilton, K. & Smith, J. Business and the Ethical Implications of Technology: Introduction to the Symposium. *J Bus Ethics 160,* 307–317 (2019). https://doi.org/10.1007/s10551-019-04213-9.

improve legal accessibility and inclusivity. Law apps (mobile applications) offer the potential to increase access to legal information, services, and resources. Mobile applications in the legal area have grown in importance as valuable instruments for bridging the gap between legal practitioners, legal institutions, and the general public, allowing for quicker access to legal knowledge and support. Law applications have the potential to expand access to legal information, especially for those who do not have access to traditional legal resources.

Apps empower users to understand their legal rights, access legal documents, and seek guidance on legal matters. They have the capacity to provide legal advice, generate legal documents, facilitate communication with attorneys, and offer educational resources. The thrust therefore of app developers should be on the user-friendliness and accessibility of these apps. To check the accuracy of legal information provided by apps, privacy and security concerns, and there is a need for appropriate regulation in the legal tech space.

The emergence of law apps is reshaping the legal profession and legal service delivery. This calls for legal practitioners and firms to adapt to the changing landscape and incorporating technology into their practices.

In this digital age, the legal profession has increasingly embraced technology to facilitate remote interactions between lawyers and clients. Video conferencing, secure messaging platforms, and other digital tools should enable consultations. There are benefits of virtual consultations, such as increased accessibility and convenience for clients, but there are also challenges and ethical considerations associated with remote legal interactions.

AI and Ethical Considerations

Artificial Intelligence has been defined by the European Commission in their 2018a Communication. It states that AI encompasses certain qualities and characteristics. Incorporating AI into law enforcement poses ethical concerns regarding bias, fairness, and public trust, making it crucial to ensure its ethical usage. The convergence of two innovative technologies, AI and data science, has initiated a metamorphosis of social relations in various aspects of human life. The traditional AI fields of planning, algorithmic logic, knowledge representation, modeling, autonomous systems, multi-agent systems, expert systems (ES), decision support systems (DSS), simulation, pattern recognition, image processing, and natural language processing (NLP) have played a transformative role, alongside contemporary AI and DS fields like statistical modeling, representation learning, machine learning, optimization, mathematical modeling, data analysis, and knowledge discovery. In order to ensure that human rights are protected, the IEEE recommends new governance frameworks, standards, and regulatory bodies which oversee the use of AI; translating existing legal obligations into informed policy, allowing for cultural norms and legal frameworks; and always maintaining complete human control over AI, without granting them rights or privileges equal to those of humans (IEEE, 2019).

Metaverse and Virtual Crimes

A Metaverse is a persistent and immersive simulated world that is experienced in the first person by large groups of simultaneous users who share a strong sense of mutual presence. It can be a fully virtual environment (i.e. a Virtual Metaverse) or it can exist as layers of virtual content overlaid on the real world with convincing spatial registration (i.e. an Augmented Metaverse).

The emergence of the metaverse introduces new challenges related to virtual crimes and necessitates international cooperation in regulating digital spaces. To study the negative effects of social media, the Aspen Institute established the Committee on Information Disorder. Over a six-month period in 2021, a diverse group of experts from academia, government and industry explored the issue and published an 80-page report in November 2021. They found that social media Society contributes largely to the creation of misinformation, and misinformation has become a "force multiplier to exacerbate our worst problems as a society," calling it is a crisis that aggravates all other crises. To address these issues, the Aspen Commission recommends increased transparency of social media platforms and better consumer protections in an effort to restore trust and minimize harm.

7. Discussion

The job of the police is being revolutionized by new technologies such as crime predicting computer programs and robots. Although beneficial, these tools give rise to concerns regarding fairness and privacy. Crime prediction programs for instance may end up discriminating certain groups even if it is unintentional. Secondly, the internet has a meaningful impact on how laws are disseminated and created. Nowadays, laws are accessible online, which empowers individuals to examine and discuss them with greater ease. Although, it creates an expectation for every individual, including law enforcement, to grasp and adhere to the new laws. Smartphone applications and instruction modules can aid in achieving this.

The challenge of teaching police officers new tools like computers and cameras could be an expensive one. Figuring out the optimal way to teach them the needed skills, while at the same time ensuring regulatory compliance is crucial. It's vital to strike a balance between investing in technology and adhering to rules. Catching criminals and preserving the rights of individuals require a delicate equilibrium, especially when the police deploys tools such as cameras and computers. These instruments can aid in crime-solving but might also encroach on people's privacy. In both India and the US, legislation and judiciary opinions have established the parameters for this balance.

To prevent crimes before they happen, it's important for the police to use intelligent computers, but there's potential for these computers to make errors or biased judgments. Careful investigation is necessary to ensure proper usage of these machines. Rules and regulations must be in effect to maintain fairness and safeguard individual rights. Creating a virtual world is comparable to playing a computer game, yet it presents unique issues such as the spread of false information. It's important that we collaborate with other nations to establish measures that ensure online safety.

8. Analysis and conclusion

The impact of emerging technologies on law enforcement cannot be overlooked. Digital tools, such as body cameras, surveillance systems, data analytics, and predictive policing algorithms, are transforming the field of law enforcement. While these technologies offer opportunities for improving law enforcement practices, they also raise ethical and legal concerns, particularly regarding data security, privacy, and accessibility.

The use of AI in law enforcement raises ethical questions concerning bias, fairness, and public trust. Ensuring the ethical use of AI is a pressing concern. Also, convergence of two groundbreaking technologies artificial intelligence and data science has created a fundamental transformation of social relations in many different areas of human life. The transformative role has been played by classical fields of artificial intelligence such as algorithmic logic, planning, knowledge representation, modeling, autonomous systems, multi-agent systems, expert "ES", system "DSS", simulation, pattern recognition, image processing and natural language processing (NLP) and modern fields of AI and DS such as representation learning, machine learning, optimization, statistical modeling, mathematical modeling, data analysis, knowledge discovery, complexity science, computational intelligence, event and behavior analysis, media and social network analysis, and more recently deep learning and cognitive computing.

To ensure human rights are protected, IEEE recommends new governance frameworks, standards, and regulators overseeing the use of AI; translate existing legal obligations into informed policies, taking into account cultural norms and legal frameworks; and always maintain complete human control over AI without granting them rights or privileges equal to humans.[4]

The emergence of the metaverse poses new challenges related to virtual crime and requires international

[4] IEEE 2019.

cooperation to manage the digital space. In this ever-evolving landscape, the economics of law enforcement continues to evolve, requiring ongoing collaboration, policy refinement, and a commitment to maintaining a just and equitable society. Balancing the pursuit of security with the preservation of civil liberties remains a central challenge that societies and nations must address in their quest for effective and fair law enforcement.

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Impact of Financial Risks on Financial Performance of Private Life Insurance Companies in India: An Empirical Study

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Abstract

Several financial risks are inherent in the business operations of insurance companies which, if not managed properly, may have an adverse impact on the profitability of these companies. Thus, the aim of the present study is to examine the impact of financial risks on the financial performance of the insurance companies in India taking 23 private insurance companies as a proxy for the insurance sector of the Indian economy. The study took secondary data of insurance companies for the sample period of eight years from 2013-14 to 2020-21 and implemented panel data analysis technique to run regression taking return on assets/ return on equity as dependent variables for measuring financial performance and capital management risk, solvency risk, underwriting risk and liquidity risk as independent variables measuring financial risks of insurance companies along with two control variables, namely, size of the company and investment income. The results of the study revealed a clear significant impact of capital management risk on both return on assets and return on equity and a significant impact of underwriting risk and liquidity risk on return on equity. The study could not establish a significant impact of solvency risk on financial performance in contrast to some previous studies. The study purports that insurance companies can enhance their profitability by effectively managing the financial risks in business.

Keywords: Return on Assets, Return on Equity, Panel Data Analysis, Hausman Test

I Introduction

A mature insurance sector is the backbone of any economy. It not only helps mitigate the loss suffered by individuals but also leads to capital formation by providing necessary financial support to the industry in the form of loans, advances, investment in shares and debentures in both public and private sector companies. The insurance industry has been engaged in a continuous updating process that has encouraged the necessary adjustments to adapt to the changing economic climate as well as the rising standards of safety, transparency, and effectiveness that are being expected by financial markets and people (Claudio, 2009). The Indian insurance industry has been gradually increasing its countrywide penetration over the years. Yet it is still far behind many developed countries of the world like the UK, France, Japan, etc. These companies need to expand their reach to customers through innovative products. Investors should be educated and made aware of the need for insurance and the types of products available in the markets and how they can be beneficial for them. Insurance companies while absorbing the losses suffered by individuals in terms of life and property are themselves exposed to many risks like underwriting risk, solvency risk, liquidity risk, capital management risk, etc. The high level of claims against

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the premiums received often leads to huge underwriting losses for these companies. If these risks are not properly managed, they can threaten the viability and existence of the organization. Though the overall shock is absorbed by the investment income earned from investing the premiums received from policies in various securities like shares, bonds and debentures, however, managing the underwriting business well is the key to sustained growth and profitability of these companies.

Financial risk has a direct bearing on the financial performance (FP) of insurance companies. To put it in simple words, financial risk is the risk of not being able to cover the claims expenses demanded by policyholders and the inability to earn enough return on the investments made to cover various costs and provide decent returns to investors. Many insurance businesses are excellent at determining insurance risks, but they struggle to set up systems to control their own operational and business risks. (Kadi, 2003). Managing financial risk involves assessing the risk to which an insurance company is exposed, developing tools for protecting the insurance company from those risks, monitoring risk and mitigating the risk exposure. Managing financial risk judiciously is an important factor contributing to improved financial performance (FP) of the company. Insurance companies can control risks using a variety of strategies. Loss financing, risk mitigation, and loss prevention and control are some of these. (Wani & Dar, 2015).

The financial risk of insurance companies can be measured in terms of risk of not being able to cover the claims expenses i.e. underwriting risk, risk of being able to meet the long term debt obligations i.e. solvency risk and liquidity risk i.e. the risk of being unable to meet short term payment obligations due to lack of convertibility of investment into cash within a short period. The size of a company is also an important factor as larger organizations can absorb risk more effectively as compared to smaller ones. A larger capital base also works as a cushion to protect the insured and promotes financial soundness. The FP, on the other hand, has been measured in several ways by companies across the globe. The performance of insurance companies can be measured in terms of underwriting income, premium income, investment income or overall profits earned by the organization. However, return on assets (ROA) and return on equity (ROE) are by far the most effective ratios when it comes to measuring the performance and efficiency of insurance companies. Additionally, the return of assets (ROA) ratio is the most widely used ratio for quantifying FP.

The present study is structured in five different sections. Section II gives a brief review of some previous studies relating to the relationship between financial risks and returns in insurance companies. Section III mentions the contribution of the present study. Section IV discusses the data and the research methodology. Section V deliberates the empirical findings. Section VI concludes the study in light of the objective of the research and the results of empirical analysis.

II Review of Literature

Several studies have suggested a link between good risk management and improved FP of companies. Babbel & Santomero (1996) in their research divided the financial risks into six major categories, i.e., actuarial risk, systematic risk, credit risk, liquidity risk, operational risk and legal risk. They recognized a variety of motivating grounds for handling financial risk like managerial self-interest, nonlinearity of taxes, cost of financial distress, presence of capital market imperfection, etc. They advised several risk management techniques, viz standards and reports, underwriting authority and limits, investment guidelines and incentive schemes. These techniques help quantify the risk exposure, explaining the procedures to manage and limit these exposures to tolerable levels and encouraging the managers to handle risks in a way that is consistent with the objectives of the company and ensures improved performance.

Muli (2003) explored the management of property risks in Kenya with the help of a case study of the insurance sector. They conducted a questionnaire-based survey of

18 insurance companies from a total of 36. The results revealed that although risk management is consciously present in the Kenyan insurance business, a clear understanding of the discipline in the industry is missing. The engrossment of risk surveyors and managers in risk control and evaluation was not adequate though they had endorsed the necessity of adopting the appropriate risk control techniques. Though the insurers were found to have sufficient information for any risk management activity, there was an absence of a well-organized method of storage and retrieval of the same. Shiu (2004) studied factors of UK general insurance companies' performance during the period 1986-1999 by taking a sample 211 firms and applying the least square regression model and panel data model to estimate the results. He claimed a positive relationship between the performance of insurance companies and interest rate, ROE, liquidity, and solvency margin and a negative relationship between performance and reinsurance dependence and inflation. Risk turned out to be a critical factor having a positive or negative impact on the performance of insurance firms. It was established that whenever insurers encountered poor underwriting results and low interest earning, the performance of whole insurance industry was distressed.

Yusuwan et al. (2008) concentrated on recognizing the level of awareness of risk management regarding risk management practices in the case of construction project companies in Klang Valley, Malaysia. They examined the policies adopted in dealing with risks in a construction project and identified the difficulties and challenges in risk management. They employed a questionnaire survey and interviews to study 27 public and private companies operating in Klang Valley. The results showed that risk management positively contributed to the productivity and FP of these companies. Sprcic & Sevic (2009) advocated that the theory of risk management if applied in a well-structured way, will protect companies from market shocks, bankruptcy, and financial distress. Malik (2011) explored the determinants of profitability of insurance companies in Pakistan with a sample of 35 listed life and non-life insurance companies for the period 2005 - 2009. By taking profitability as the dependent variable and the age of the company, size of the company, volume of capital, leverage and loss ratio as independent variables, the regression estimates showed no relationship between profitability and age of the company and a significant positive association between size of the company and profitability. The result also indicated that the volume of capital was significantly and positively related to profitability, however, the loss ratio and leverage ratio were significantly and negatively related to profitability. Almajali et al. (2012) investigated the factors affecting the FP of Jordanian Insurance Companies Listed at the Amman Stock Exchange. They took data of all 25 insurance companies enlisted at Amman Stock Exchange during the period 2002-2007. They considered company Leverage, liquidity, age, size, and company management competence index as independent variables whereas FP measured through return on assets as dependent variable. The results demonstrated that leverage, liquidity, size and management competence index were having a statistically significant and positive effect on the FP of insurance companies but company age has no statistically significant influence on FP.

Charumathi (2012) tried to model the factors affecting the FP of life insurance companies working in India taking the return on asset as the dependent variable and firm-specific features such as leverage, size, premium growth, liquidity, underwriting risk and equity capital as independent variables. The findings of the study revealed that the FP of life insurers is positively and significantly influenced by the size and liquidity but is negatively and significantly affected by leverage, premium growth, and equity capital. However, the study could not establish any relationship between underwriting risk and FP. Sambasivam & Ayele (2013) studied the performance of nine insurance companies in Ethiopia from June 2003 to June 2011 to pin down the factors influencing the profitability of insurance companies and their relationship with profitability. They considered ROA as dependent variables and age, size, volume of capital, leverage ratio, growth rate, tangibility of assets and liquidity ratio as independent variables. They found a significant relationship between age and ROA as well as size and ROA. A significant and negative relationship between leverage ratio and ROA, a significant positive connection between firm growth and ROA were revealed too. Further, a substantial correlation between volume of capital and ROA, between tangibility of assets and ROA but a negative correlation between liquidity and ROA was revealed. Sumaira & Amjad (2013) demonstrated risk had a negative bearing on the profitability of insurers while Ahmadimousaabad et al (2013) found a positive relationship between risk and the structure of the firms.

Boadi et al. (2013) analysed determinants of profitability of insurance firms in Ghana from 2005 to 2010 by taking data from sixteen insurance firms and conducting quantitative research using ordinary least square regression and panel data estimation methods to infer the relationship between ROA and leverage, tangibility, liquidity, growth, size, and risk. The empirical findings validated a positive association between profitability, leverage, and liquidity but a negative linkage between profitability and tangibility. The study proposed to check the relationship between profitability and return on equity ratio as well. Burca & Batrinca (2014) studied the elements of FP in case of Romanian insurance companies by covering a sample of 21 companies for the period 2008 to 2012. They tested 13 explanatory variables viz, financial leverage, company size, age in number of years, growth of gross written premiums, equity, total market share, diversification, underwriting risk, investment ratio, reinsurance dependence, retained risk ratio, solvency margin and growth of GDP per capita. The FP of the insurers was measured with ROA. The findings showed that gross written premiums, financial leverage and underwriting risk hurt ROA. Company size, retained risk ratio, and solvency margin had a positive impact on ROA. Equity, total market share, diversification, investment ratio, age in number of years and growth of real GDP per capita were found to have no significant impact on performance. Omasete (2014) studied the effect of risk management practices like setting standards of risk, risk assessment, risk mitigation, and risk management and monitoring on the performance of 49 life and general insurance companies in Kenya by collecting both primary and secondary data. The study employed the techniques of content analysis and regression analysis. The study resolved that there is a strong linkage between the adoption of risk management practices and the FP of insurance companies. The study proposed that insurance companies need to adopt a multifaceted approach in their risk management efforts to grasp the full benefits of their risk management programs. According to Berteji & Hammami (2014), liquidity and leverage had no impact on the performance of insurance companies.

Wani & Ahmad (2015) studied the effect of capital management risk, solvency risk, liquidity risk, underwriting risk, size of the company and volume of capital on the FP of eight private sector life insurance companies in India. The study validated that capital management risk, solvency risk, and underwriting risk were the deterrent forces for the FP of life insurance firms, while liquidity risk, company size, and volume of capital variables were the pull factors. Kaya (2015) considered the influence of company-specific elements on the profitability of non-life insurance companies in Turkey for the period 2006 to 2013 taking data of 24 non-life insurers operating in Turkey. The impact of eight explanatory variables viz. size, age, loss ratio, insurance leverage ratio, current ratio, premium growth rate, motor insurance and premium retention ratio, on technical profitability ratio and sales profitability ratio was determined. The findings confirmed that the profitability of non-life insurers was significantly and positively affected by the size and premium growth rate whereas it was significantly and negatively influenced by the age, loss ratio and current ratio. Liu et al. (2016) conducted research the impact of liquidity on the reinsurance of general insurance companies in UK over a sample period of 1994 – 2011. It was discovered that insurers with higher liquidity tended to buy more reinsurance, whereas those with higher reinsurance dependence tended to keep their liquidity higher. The findings show that the substitution argument is outweighed by the cash-constraint argument. It was affirmed that there is an inverted U-shaped relationship between liquidity and reinsurance. Kokobe & Gemechu (2016) analysed the relationship between risk management techniques (loss prevention and control, loss financing and risk avoidance) and FP of insurance companies (ROE and loss ratios). The findings indicated poor FP of insurance companies along with a general increase in loss ratios. A low positive correlation amid loss prevention and control technique and ROE and a moderate positive correlation amid loss prevention and control technique and loss ratios led to the conclusion that insurers should apply risk management techniques effectively to enhance return on equity and to reduce loss ratios. Mwangi & Iraya (2016) contended leverage had a positive impact but liquidity had no impact on insurance company performance.

Sisay (2017) investigated the effect of financial risk on the performance of insurance companies in Ethiopia with data from seven private life insurance companies over the period 2000 to 2015. The fixed effects model was used to run regression taking ROA as be dependent variable and credit risk, liquidity risk, solvency risk, underwriting risk, reinsurance risk and technical provisions risk as explanatory variables. The results showed the significant negative impact of all risks (except reinsurance risk which turned out to be insignificant) on the performance of insurance companies. Shawar & Siddiqui (2019) reviewed the performance of insurance companies in Pakistan using financial ratios over the period 2008-2017 concentrating mainly on investment income, underwriting profit, and sales profitability. The study suggested that in Pakistan's insurance industry, gross written profit, management expenditures, and interest rates exert significant influence on underwriting profit, while claim, reinsurance, leverage, size, and real gross domestic product have little bearing. Further, the study exhibited that claim, reinsurance leverage, interest rate and real gross domestic product are not significantly related to investment income, while the gross written profit, management expenditure and size positively affect investment income. Also, sales profitability is not affected by management expenditure, interest rate, claim and size but is significantly influenced by gross written profit, leverage, and real gross domestic product. Ukpong & Folarin (2020) assessed the financial risks that the Nigerian life insurance market faces and how those risks relate to the company's value. The findings of the study showed that the linkage between liquidity risk and return on equity is negligible.

As is evident, insurance companies serve the larger objective of mitigating the effects of life and property on individuals in a society. Their risk exposure is quite high because of the very nature of their business. Thus, there is a greater need for risk management in the case of these companies. All the studies point out that insurance companies can best enhance the performance of business following practices of risk management be it liquidity risk, underwriting risk, solvency risk or capital market risk.

As the review of literature reveals that contradictory empirical evidence exists about the linkage between financial risks and FP of insurance companies i.e. the impact of financial risks on FP has been determined to be either positive, negative, or negligible, the present study aims to further the consensus-building process by examining the relationship between financial risks and FP of private life insurance companies in India. The contradictory results of previous studies provided much-needed impetus to explore further the relationship between financial risks and FP of insurance companies with the latest data of 23 private life insurance companies operating in India to reach a consensus.

Against this backdrop, the present study aims to find out the impact of financial risks on the FP of insurance companies in India by taking private insurance companies as representatives of the insurance sector of India. To examine the said relationship, the following research hypothesis is developed in its alternate form**:**

H_a: Financial risks exert a significant impact on the FP insurance companies.

III. Contribution of Research

This area of research, though crucial for the successful performance of insurance companies, is still under-explored and the related existing literature is sparse. Only a few studies have been conducted regarding the probable influence of financial risks on the FP of insurers across the globe. To the best knowledge of the researchers, none of the previous studies have attempted to analyse the relationship between financial risks and FP of life insurance companies in India, though similar studies have been carried out for the general insurance sector. Thus, the present study is ace of its kind and will support various stakeholders of the life insurance business, namely, investors, regulators, managers, academicians, and future researchers to derive meaningful conclusions from the results of the study as per their stake. Further, the present study will provide an extensive understanding of the research area under consideration and base for further research.

IV. Data and Methodology

Data

The current study is based on secondary data from 23 private insurance companies in India. The data is extracted from the Handbook on Indian Insurance Statistics 2020-21 available on the Insurance Regulatory and Development Authority of India 's official website.

(https://www.irdai.gov.in/ADMINCMS/cms/Uploadedfiles/Hand%20Book%202019-20.pdf) The data is taken for the sample period of eight years from 2013-14 to 2020-21. The study included all 23 private life insurance companies in its analysis and the last private life insurance company, Edelweiss Tokio Life Insurance Company, was established in July 2011. Therefore, to analyse more representative data of all 23 companies, this sample period of study is considered. Though the COVID-19 pandemic led to an increase in demand for life insurance products, the impact of the same in data become more evident from the year 2021-22 and not from the year 2020-21 and thus the empirical analysis and the results will not be affected due to pandemic.

Variables Description and Classification

After reviewing the existing literature, the study selected the following variables for the empirical analysis in the study. The variables are classified under the three categories:

Dependent Variables: For finding out the relationship between risk and returns in case of Indian insurance companies, the current study has selected Return on Equity (ROE) and Return on Assets (ROA) as dependent variables of interest. These variables are defined below:

Return on Equity (ROE): Return on Equity is a measure of FP of a company that is computed by dividing the net profits after tax by the equity investments of its shareholders.

Return on Assets (ROA): Return on assets measures the efficiency of a company to generate profits by using its total assets. It is computed by dividing net profits after tax by the total assets of the company.

Independent Variables: The study tries to find out the impact of the following four major types of risks undertaken by insurance companies to earn returns:

Capital Management Risk (CMR): An insurance company need to maintain a statutory minimum level of capital depending upon its size and the inherent risk in its operation. Therefore, there are normally few but large companies in any insurance business. Capital Management Risk is defined as an insurance company's ability to survive the impact of risks it is exposed to by holding sufficient capital. It is calculated as the ratio of the total capital and reserves to the total assets of an insurance company.

Solvency Risk (SR): Solvency refers to the ability of a company to meet its long-term financial commitments on time. The solvency risk is defined as a measure of the risk that an insurance company faces of claims that it cannot absorb. The solvency risk is calculated as ratio of the available solvency margin amount to that of the required solvency margin amount. The higher the ratio, the better it is.

Underwriting Risk (UR): Underwriting risk is defined as the risk that an insurance company will suffer losses due to unanticipated factors beyond the control of companies that were not forecasted at the time when a premium rate was determined. It is calculated as the ratio of net benefits paid over total life insurance premium received.

Liquidity Risk (LR): Liquidity is the ability of an insurance company to pay the benefits owed to policyholders and beneficiaries of insurance contracts on time. Liquidity risk is measured by liquidity ratio i.e., the ratio of current assets over current liabilities.

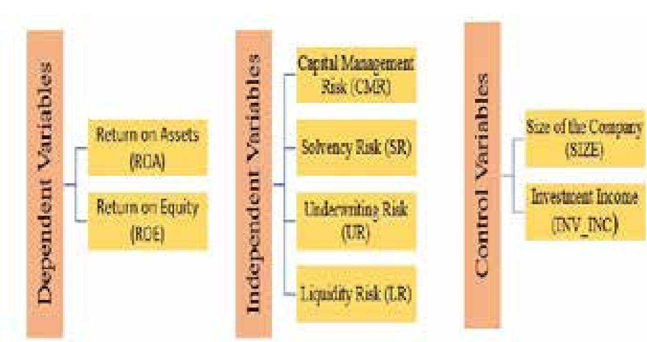
Control Variables: The present study takes the following two variables as control variables to limit their influence on regression results:

Size: The size of the company affects the FP of a company and therefore, is taken as a control variable and is defined as the natural logarithm of the total assets of the insurance company.

Income from Investments (IN_INC): The premium amount collected by a life insurance company is invested in guaranteed or low-risk securities such as stocks, bonds, real estate and money market funds to earn returns. This is taken as a control variable as this is a major source of revenue for a life insurance company.

The figure 1 gives a pictorial representation of all the variables used in the study.

Figure 1: Variables Used in Study



Source: Self-Constructed

Analysis Technique

For examining the relationship between risks and returns in case of Indian insurance companies, the study adopts the technique of regression analysis suitable for panel data under consideration. Taking Return on Equity (ROE) and Return on Assets (ROA) as dependent variables and Capital Management Risk (CMR), Solvency Risk (SR), Underwriting Risk (UR) and Liquidity Risk (LR) as independent variable along with two control variables, namely, Size of company (SIZE) and Income from investments (INV_INC), the following regression equations are built:

$$\boldsymbol{ROE_{it} = \alpha + \beta_1(CMR)_{it} + \beta_2(SR)_{it} + \beta_3(UR)_{it} + \beta_4(LR)_{it} + \beta_5(SIZE)_{it} + \beta_6(INV\_INC)_{it} + \zeta_i + \varepsilon_{it}} \quad (1)$$

$$\boldsymbol{ROA_{it} = \alpha + \beta_1(CMR)_{it} + \beta_2(SR)_{it} + \beta_3(UR)_{it} + \beta_4(LR)_{it} + \beta_5(SIZE)_{it} + \beta_6(INV\_INC)_{it} + \zeta_i + \varepsilon_{it}} \quad (2)$$

In equation (1) and (2), 'i' is used for insurance companies, 't' is used for year, 'α' is a constant term for the intercept 'β_i' s are the coefficients for the independent and control variable, ζ_i is unobserved cross-section heterogeneity and ε_{it} is the random error.

To empirically examine the relationship between risks and returns in case of Indian insurance companies with the help of regression equation (1) and (2), the following procedure of panel data analysis is employed:

1. As a preliminary step, first the descriptive statistics and correlation analysis of all the variables is studied to know the nature of data and possibility of multicollinearity.
2. If correlation analysis shows no signals of multicollinearity, then the three most popular models of panel data analysis, namely, pooled ordinary least squares model (POLSM), Fixed Effects Model (FEM) and Random Effects Model (REM), are run for regression to establish a causal relationship between risks and returns in case of Indian insurance companies.
3. To reach the best-fit model out of POLSM,

FEM and REM, the two post-estimation tests are conducted. The Breusch-Pagan Lagrange Multiplier test (BP-LM test) (1979) is conducted on the results of POLSM to check the existence of panel effects, if any. If the results of BP-LM test fail to establish panel effects, the POLSM is considered as best-fit, otherwise either FEM or REM will be appropriate. To know the more appropriate model between FEM and REM, the Hausman Test (1978) is conducted on the results of REM to validate or negate the null hypothesis "Random Effect model is appropriate". Depending upon the results of BP-LM test and Hausman Test, the study concludes the best-fit model and accordingly the results are interpreted.

V. Empirical Findings

The result analysis begins with discussing descriptive statistics of various variables used in the study. Descriptive statistics are reported in Table 1. The mean value of ROE is 63.57387 with standard deviation of 201.7395. The mean value of ROA is 0.079900 with standard deviation of 0.306847. The average CMR value is 0.024539 with standard deviation of 0.033151. Similarly, the average value of SR, UR and LR (along with their standard deviation) are 3.221555 (1.925034), 822.7218 (3387.310) and 1.324531 (8.115716) respectively. The average size of insurance companies is 11.43023 and the average income from investments is 50388.84. There is positive skewness in the data for ROE, CMR, SR, UR, SIZE and INV_INC. The data for all the variables is highly leptokurtic. The Jarque-Bera Test for normality rejects the null hypothesis of normal distribution for all the variables under consideration as reported p-value is significant at 1% level of significance in case of all the variables.

Table 1: Descriptive Statistics

	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability	Observations
ROE	63.57387	201.7395	5.903258	46.01534	15254.47	0.000000	184
ROA	0.079900	0.306847	-0.292671	4.800860	27.49053	0.000000	184
CMR	0.024539	0.033151	2.242261	7.896247	337.9786	0.000000	184
SR	3.221555	1.925034	2.197323	7.883019	330.8687	0.000000	184
UR	822.7218	3387.310	7.169914	62.33382	28567.02	0.000000	184
LR	1.324531	8.115716	-11.25467	148.0269	165136.0	0.000000	184
SIZE	11.43023	1.483748	1.667783	6.730926	192.0179	0.000000	184
INV_INC	50388.84	67961.76	1.833962	5.603730	155.1202	0.000000	184

Source: Authors' calculation using EViews

The correlation analysis results given in Table 2 indicate ROE is positively related to ROA, SR, UR, INV_INC and size but negatively correlated to CMR and LR. ROA is positively correlated to ROE, UR, Size and INV_INC but negatively associated with CMR, SR and LR. If we focus on correlation coefficients between two independent variables/ independent and control variables, none of the two variables are highly correlated with each other, thus the problem of multicollinearity is ruled out.

Table 2: Bivariate Correlation Matrix

	ROE	ROA	CMR	SR	UR	LR	SIZE	INV_INC
ROE	1.000000							
ROA	0.243102	1.000000						
CMR	-0.222524	-0.294385	1.000000					
SR	0.213416	-0.010279	-0.205164	1.000000				
UR	0.308341	0.013773	-0.166513	0.066807	1.000000			
LR	-0.241855	-0.005631	0.025404	0.032120	-0.133045	1.000000		
SIZE	0.568077	0.258081	-0.546052	0.018410	0.584347	-0.120797	1.000000	
INV_INC	0.580378	0.374201	-0.387367	0.053590	0.510222	-0.036050	0.561061	1.000000

Source: Authors' calculation using EViews

Table 3 summarises the results of regression equation (1) in which ROE as the dependent variable, CMR, SR, UR and LR are independent variables and SIZE and INV_INC are control variables. Table 3 depicts the results of all the three estimation models, namely, POLSM, FEM and REM along with the two post estimation tests, namely, BP-LM Test and Hausman Test. First, the estimation is done with POLSM. On the results of POLSM, BP-LM test is conducted to confirm the existence of panel effect in data, if any. The test results inferred that POLSM is not appropriate due to presence of random effects. This gives impetus to move towards FEM and REM estimations. Further, to establish whether the random effect is due to randomness of sample or due to company-specific factors, the results of REM are subjected to the Hausman test. This test is conducted to check which model is most appropriate: REM or FEM. The results of Hausman Test reject the null hypothesis "REM is appropriate." as observed Chi-Square Statistic is significant with a p-value < 0.01. This concludes that FEM is most appropriate model in the present case. As FEM is validated to be the best fit model for running regression with equation (1), the results are interpreted with FEM model.

The results depict that ROE is significantly affected with connection with CMR, UR, LR, SIZE and INV_INC, but is not significantly affected with SR. The significant positive coefficient of CMR infers that as capital management risk increases, the FP measured with ROE also increases, while significant and negative coefficients of UR and LR shows as underwriting risk and liquidity risk increases, the FP measured with ROE of insurance companies decreases. SIZE and INV_INC are having positive impact on ROE. Thus, research hypothesis ($\mathbf{H}_{\alpha}$) is accepted so far as the impact of CMR, UR and LR on FP i.e. ROE is concerned.

Table 4 summarises the results of regression equation (2) in which ROA is the dependent variable, CMR, SR, UR and LR are independent variables and SIZE and INV_INC are control variables. Table 4 represents the results of three estimation models, namely, POLSM, FEM and REM along with the post estimation tests, BP-LM Test and Hausman Test. As a first step, the estimation is done with POLSM and on its estimated results, BP-LM test is conducted to validate the presence of random effects, if any. The BP-LM test results made it clear that POLSM is not efficient as presence of random effects is confirmed. This provides a push towards FEM and REM estimations. Now, to check whether the random effect is due to randomness of sample or due to company-specific factors, on the results of REM, the Hausman test is carried out. This test helps in deciding which model is most appropriate: REM or FEM. The results of Hausman Test in present case accepted the null hypothesis "REM is appropriate." as observed Chi-Square Statistic is insignificant with a p-value > 0.05. This concludes that REM is most appropriate model in the present case. As REM is turned out to be the best fit model for running regression with equation (2), the results are interpreted with REM model.

The results in Table 4 demonstrate that CMR is having significant negative impact on ROA, however, SR, UR and LR are having insignificant negative impact on ROE. The significant negative coefficient of CMR infers as capital management risk increases, the FP of an insurance company measured with ROA decreases. The SIZE and INV_INC are having positive impact on FP measured with ROA. Thus, research hypothesis ($\mathbf{H}_a$) is accepted only for the impact of CMR on i.e. ROA.

Table 3: Results of Panel Estimation with POLSM, FEM and REM with ROE as Dependent Variable

Dependent Variable: ROE			
Beta Coefficients with Standard Errors in Parentheses			
Independent Variables	**POLSM**	**FEM**	**REM**
Constant	-730.6316*** (210.9158)	-977.6779*** (199.6058)	-824.2352*** (191.2786)
CMR	1012.508** (440.0862)	2715.417*** (481.6326)	1563.808*** (421.1879)
SR	24.84034*** (6.091178)	1.874945 (11.58805)	23.22540*** (6.656162)
UR	-0.007008* (0.004233)	-0.010657*** (0.004113)	-0.007859** (0.003882)
LR	-5.143461*** (1.411616)	-3.454000*** (1.324590)	-4.541566*** (1.277543)
SIZE	57.18783*** (18.71672)	81.18323*** (17.51513)	64.44063*** (16.86423)
INV_INC	0.000957*** (0.000337)	0.001071*** (0.000306)	0.001003*** (0.000301)
Adjusted R^2	0.434926	0.562482	0.460180
F-Statistic (p-Value)	24.47527 (0.00000)	9.402437 (0.00000)	27.00027 (0.00000)
BP-Test LM Statistic (p-Value)	**Cross Section Effect**	12.05425 (0.0005)	
Hausman Test Chi-Square Statistic (d.f.) (p-Value)	28.927807 (6) (0.0001)		

***p-value<0.10. **p-value<0.05, ***p-value<0.010**

Source: Author's calculation using EViews

Table 4: Results of Panel Estimation with POLSM, FE and RE with ROA as Dependent Variable

Dependent Variable: ROA			
Beta Coefficients with Standard Errors in Parentheses			
Independent Variables	**POLSM**	**FEM**	**REM**
Constant	1.081026 (0.378164)	1.172441*** (0.423050)	1.081026 (0.393344)
CMR	-2.770338*** (0.789058)	-2.881931*** (1.020785)	-2.770338*** (0.820732)
SR	-0.014490 (0.010921)	-0.036247 (0.024560)	-0.014490 (0.011360)
UR	-1.29E-05* (7.59E-06)	-1.40E-05 (8.72E-06)	-1.29E-05 (7.89E-06)
LR	-0.001563 (0.002531)	-0.001692 (0.002807)	-0.001563 (0.002633)
SIZE	-0.090608*** (0.033558)	-0.092016** (0.037122)	-0.090608** (0.034905)
INV INC	3.21E-06*** (6.04E-07)	3.18E-06*** (6.48E-07)	3.21E-06*** (6.29E-07)
Adjusted R^2	0.214792	0.150487	0.214792
F-Statistic (p-Value)	9.343213 (0.0000)	2.157773 (0.001646)	9.343213 (0.00000)
BP-Test LM Statistic (p-Value)	**Cross Section Effect**	5.102096 (0.0239)	
Hausman Test Chi-Square Statistic (d.f.) (p-Value)	1.830793 (6) (0.9346)		

***p-value<0.10. **p-value<0.05, ***p-value<0.010**

Source: Author's calculation using EViews

VI. Conclusion

With the aim of examining the impact of financial risks on FP of private insurance companies in India, this study proxied the FP with the two the most commonly used accounting measures of profitability, ROE and ROA. The study is based on secondary data of 23 private insurance companies in India extracted from Handbook of Indian Insurance Statistics 2020-21 for the period of eight years from 2013-14 to 2020-21. To empirically examine the results with regression method, the study employed panel data analysis. The findings of the study validated the significant impact of financial risk on FP i.e., profitability of insurance companies. ROE is found to be significantly positively affected with CMR and significantly negatively affected with UR and LR. ROE is insignificantly affected with SR. The significant positive impact of CMR on ROE leads to the conclusion that the increase in capital and the resultant increase in investments is not able to convert into investment income and ultimately into profitability of insurance companies at the same rate as increase in capital. A reason for this can be the ever-increasing underwriting losses that these companies have suffered during the period under consideration. On the other hand, solvency risk shows a negative but insignificant relation with ROE while underwriting risk and liquidity risk show negative but significant relation with ROE. It tells that the shareholders are quite adversely affected by increase in underwriting and liquidity risk as it hugely dents the profits earned by the company. ROA is found to be significantly negatively affected with CMR, but ROA is found to be insignificantly negatively impacted with SR, UR and LR. The negative significant impact of CMR on ROA reiterates the fact that more the capital, more the investments, and therefore more the returns and vice versa. The insurance companies are suggested to maintain adequate capital base to cushion them from underwriting losses. Though the results show that SR, LR and UR are having negative but insignificant impact on ROA, the matter of the fact is that the insurance companies need to maintain huge cash balances to meet the claims incurred which may have detrimental effect on profitability. Frequent underwriting losses require high solvency margins in these companies. Also, these companies often run into losses in their underwriting business which is compensated with the investment income they earn. Thus, as solvency risk and underwriting risk rise, the profitability of insurance companies gets adversely affected. The results of the study endorse that financial performance of the insurance companies is dependent upon the financial risks that these companies bear, therefore, insurance companies can enhance their profitability by effectively managing the financial risks inherent in their business operations.

It is important to use caution when extrapolating the findings of this study as it suffers from certain limitations. The study used panel data regression analysis which assumes a linear relationship among variables in the models employed which may not be the case. Also, the research is conducted over eight years from 2013-14 to 2020-21 which includes the year 2020-21 affected by the COVID-19 pandemic and its probable impact on FP of insurance companies, if any, is not dealt with separately.

Future studies may be conducted through a questionnaire-based survey of top managers of insurance companies in India or a comprehensive case study of a particular insurance company to gain an in-depth insight into the management practices of insurance companies regarding their strategies to deal with financial risks to improve FP. Additionally, future researchers may carry out a comprehensive analysis of all public and private life insurance companies operating in India over a longer time span or an event study for pre-COVID-19 pandemic period and post-COVID-19 pandemic period. A comparative study could also be conducted between private life insurance companies and lone public life insurance company i.e. Life Insurance Corporation (LIC) to gain an understanding about whether these companies differ in their approaches in managing the influence of financial risk on their FP.

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An Empirical Study on Factors Catalyzing the Rapid Growth of Online Buying since COVID-19 in Delhi

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Abstract

The novel coronavirus (COVID-19) outbreak is markedly tragic for the human kind all over the globe. It has affected the global economy. In Delhi, the changes brought about by COVID-19 could be observed in consumer's pattern of buying, lifestyle changes and changed consumption preferences. This paper highlights the factors that contribute to changes in consumer buying behavior from physical store to on-line buying. The purpose of this research is to investigate the factors catalyzing the speedy growth of online buying in Delhi since the inception of COVID-19. The investigation categorically focuses on reasons as why consumers prefer online buying in comparison to in-store buying after the pandemic.

The present study was conducted between October 2021-December 2022, using a structured questionnaire and data was collected through google forms. Primary data was collected from 150 respondents of Delhi and was analyzed using descriptive technique and performing factor analysis.

The results clearly show the increased online buying since COVID-19 outbreak. Through factor analysis, six major factors were found to be affecting the consumers to move towards online buying from in-store buying .These factors are Health & Assured output, Economic & Convenient, Delivery & Availability, Time utilization, Experience & Regional Products and this study is important for companies as well as individuals who adopt online medium for selling their goods and services. This research findings have implications for online retail marketing firms for developing strategies with a view to provide enhanced customer satisfaction and winning over the competitors.

Keywords: COVID-19, online buying, factor analysis, catalyzing factors, changing trends, buying frequency

Introduction

The COVID -19 pandemic has eventually changed the globe as we all know it. In March 2020, the majority of the countries went into lockdown, compelling many businesses to shut down temporarily and permanently. Although countries are gradually relaxing the imposed restrictions, but the future is still not certain. The businesses which are gradually in the opening phase have restrictions like maintaining social distancing, wearing of masks, frequent use of sanitizers, having only vaccinated staff on-board with restrictive entry of customers to ensure limited numbers at a time etc. When traditional mode of purchasing becomes difficult, people start which was before pandemic as also an alternative.

People have adopted different living styles, accustomed to buying differently and more importantly thinking

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differently. Across the world consumers are viewing the brands and products through a new lens. The COVID -19 has accelerated the long term primary trends in the time of just weeks. The eruption has forced consumers out of their normal routines. The buying behaviour of consumers has evolved during pandemic. During initial stages, many Delhi consumers were either in containment zones or were having restricted alternatives for making their purchases. The lockdown and afterwards safety measures taken to control the infection forces more consumers online. It exposed them to try new channels, products and brands which caused changed buying habits and their different ways of purchasing. The consumers have shifted to online platform for their all kind of needs like grocery, banking and personal hygiene etc.

As a response to pandemic the Delhi consumers have radically changed their lifestyle choices. This pandemic led to new and unique personal and socio-economic situations such as changed family income, concern for safety, value for money, healthy choices which in turn affects the consumer attitude and behavior. The emerging inclination for locally available goods and shift from price conscious to value conscious is a new trend. Few of these changes in the buying behavior using e-commerce surely be of long term nature, in the light of expected new waves of the pandemic, the safety , the new buying habits, learning costs and of course the opportunity for firms to capitalize on investments in modern sales channels.

Online marketing is no doubt an integral aspect of all the business's marketing strategy. In spite of the tremendous acceptance of digital platform, the businesses need to understand as how the epidemic will affect the landscape of online marketing which is critical for developing business planning and strategies for the growth and expansion of the online companies. This is going to be a new trend and buying behaviour which consumers are continuing even post COVID-19.

Although from consumers perspective many challenges related to trust, digital safety, consumer protection and privacy have been addressed giving sharp relief. To address such issues more aggressively, governments should expand economic and qualitative broadband to rural and undeserved areas to facilitate financial inclusion and skill acquisition to participate in e-commerce activities

The present research investigates the most influencing factors that affect the customer's online buying behaviour in Delhi. This research paper will certainly help to develop various strategies among businesses and their competitors. By knowing the critically important factors the companies can emphasize on those special aspects and accordingly form customer oriented policies to meet their needs effectively.

Literature Review

The COVID-19 lockdown has influenced consumer's purchasing medium and choice. Various factors have been identified by different researchers throughout the world, impacting consumer's buying behaviour. The shift of consumer's preference from usual brick and mortar option to online buying is witnessed during this pandemic.

In the time of new generation, the number of people shopping online has significantly outgrown in a year affecting business world. (Vasic, Killibarda & Kaurin, 2019) Online shopping has vast economic prospects. Online traders have to understand the scope of the industry and for the development of economically potential industry, the traders should realize that determinants of success is not totally dependent on website presence, low price, product variety but of course on service quality also. The consumers should be satisfied with the additional benefits that they will receive from online shopping. (Sadia, Hoq & Jebu, 2019).The influence of COVID-19 has been found on online business of the world. The nature of business has been altered because of pandemic. According to the study more than 50 percent shoppers are avoiding offline shopping and places which are crowded. (Bhatti et al., 2020)

Internet plays a vital role in electronic business that provides various facilities. The various products, the websites and mobile apps to make shopping better. There are many drivers of online sopping such as variety of products, convenient buying, reasonable price and various payment options. (Charumathi and Rani, 2017). The study found less time consuming, convenient mode of payment and various organizational factors affect the online purchasing behaviour. (Neger and Uddin, 2020)

Most of the consumers in the world, doing online buying using various online sites or mobile apps is becoming a cornerstone every day. In April month, the interest of buyers was in online grocery shopping and other essential items. (Hashem, 2020)

The other study found that the COVID-19 has affected consumer behaviour with respect to more reliance on online shopping. The restrictive movement, convenience and time saving and digital transformation of local shop of Kirana are the major factors driving online buying. (Bharti Aggarwal & Deepa Kapoor, 2020)

Another study found that need for cereals, fruits, fresh vegetables and precooked pack of food have been raised, benefitting small scale farmers in agronomy. (Chang & Mayerhoefer, 2020)

Objectives

1. To study the changes in frequency of online buying before and during COVID-19, pandemic in Delhi
2. To study the product category changes used to buy before and during COVID-19, pandemic in Delhi
3. To identify the factors which enforces consumers to adopt online buying in Delhi during COVID-19

Research Methodology

For the current study, Delhi is considered as the population of the study .A structured questionnaire was developed to collect the required primary data from the consumers. The questionnaire consists of two distinct sections, each of which contains relevant questions pertaining different parts of the study. Utmost care was taken while framing questions to gather maximum and more relevant information by providing multiple choices close ended questions. The method used was non-probability, convenience sampling. 175 questionnaires were distributed but only 150 of them were useable.

No specific characteristics were defined for the respondents. First section of the questionnaire was to collect the demographic and personal details of the respondents. The data was collected with the respondents from different occupation, income, and age group. Second section of questionnaire includes study of nineteen variables to examine their effect on consumer's attitude towards online buying after COVID-19 in Delhi

The respondents were provided a series of statements to measure their degree of agreement for each variable.

Each variable is rated on a likert ranking scale of one to five (One=Strongly disagree, two=Agree, three=Neutral, four=Agree, five=Strongly agree).The data collected from questionnaires were analysed by reliability Analysis and factor analysis.

Data Analysis and Interpretations

Respondents' demographic profile

Figure 1: Gender wise distribution of Respondents

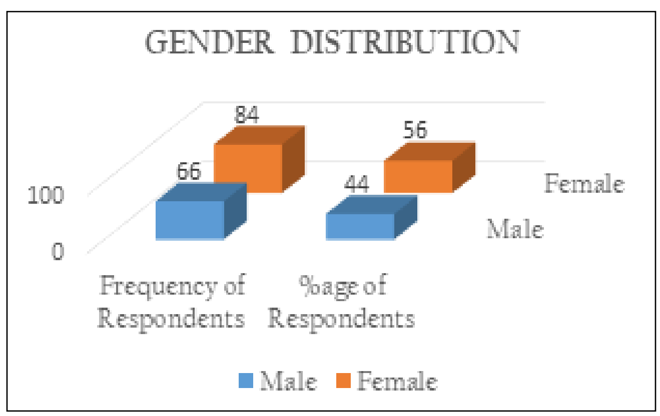

Figure 1 shows that majority of respondents are female i.e. 56 percent and males are 44 percent

Figure 2: Age wise distribution of Respondents

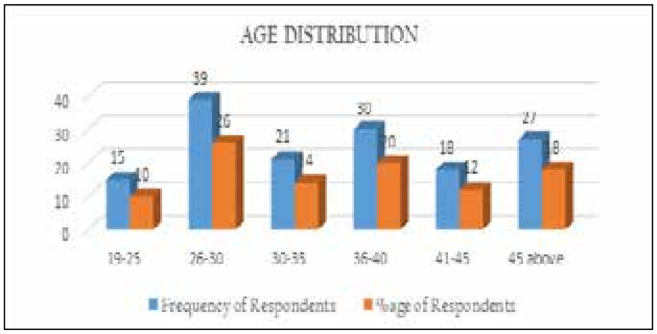

Figure 2, shows 26 percent of the respondents are aged 26-30 years of age, followed by aged 45 and above. The lowest group is 19-25 years of age which represents 10 percent

Figure 3: Occupation wise distribution of Respondents

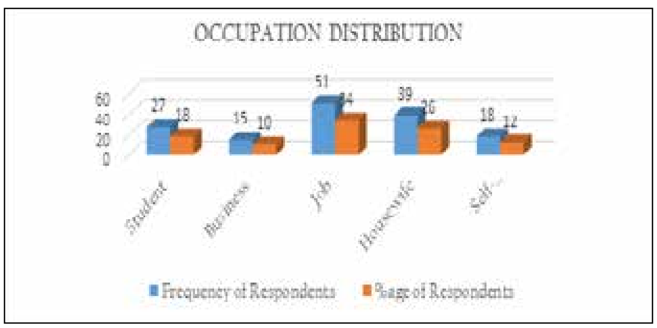

Figure 3 shows that 34 percent are doing job, 26 percent is housewife category and business 10 percent category is the lowest percentage group of all the categories

Figure 4: Online buying frequency before COVID-19

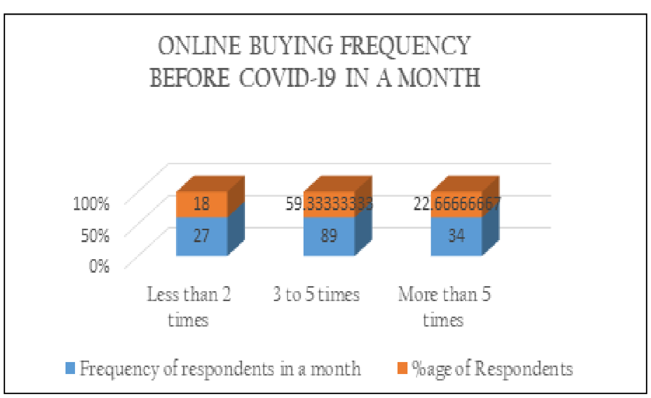

Figure 5: Online buying frequency during COVID-19

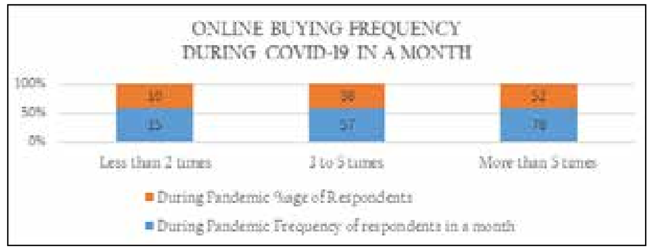

Figure 4 and 5 data shows the tremendous increase in online buying activity in terms of frequency during COVID-19 in comparison to usual earlier time before pandemic in Delhi. Before pandemic only 22.6 percent of the consumers were buying online (more than five times in a month) while during COVID-19, 78 percent started buying online (more than five times).

Figure 6: Online buying of product categories bought before COVID-19

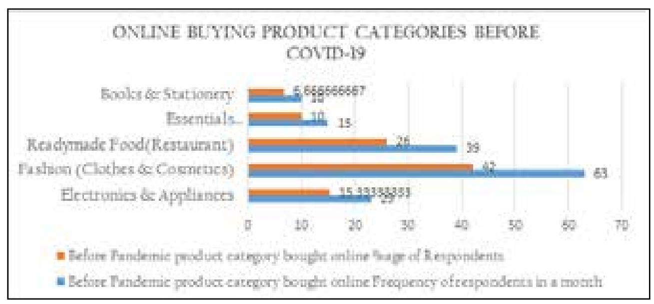

Figure 7: Online buying of product categories bought during COVID-19

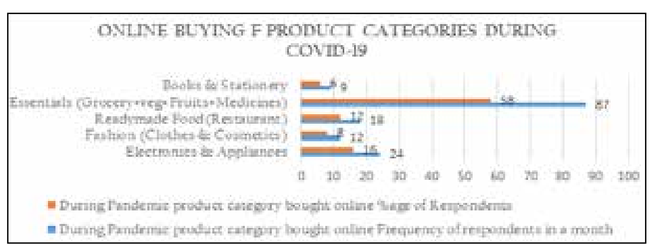

Figure 6 and 7 shows how product preferences and choices changes before and during COVID-19 of online buying. Before COVID-19, 42 percent of consumers were buying fashion items (Clothes& Cosmetics) online followed by restaurant food (26 percent) and only six percent consumers were buying books & Stationery online. But during COVID-19, 58 percent of the consumers purchased essentials and only eight percent consumers purchased fashion and least preferred product still remains the books & stationery as six percent.

Factor Analysis

Using the statistical software package SPSS 20.0, factor analysis was carried out on the results obtained from data of 150 respondents. Since, Factor analysis represents an analytical process of transforming statistical data (as measurements) into linear combinations of variables, it is a meaningful statistical method used for combining a large number of data into a considerably smaller number of factors with a minimum loss of information (Hair, et al., 1992) The extraction method the principal component analysis (PCA) and varimax rotation were carried out to explore the underlying factors associated with 19 items.

Table 1: 19 Research variables intention towards online buying

S.No	Variables
Var 1	Risk of Covid in in-store buying
Var 2	Standard product quality in online buying
Var 3	I get timely delivery as notified
Var 4	Simple ordering process
Var 5	Professional consumer support departments
Var 6	Financial savings as offers and discounts
Var 7	Wide range of brands
Var 8	Quick , safe and easy payment options
Var 9	Mobile friendly apps
Var 10	Easy product return policy
Var 11	Variety of product alternatives
Var 12	Pleasure of usage to cover-up staying at home boredom
Var 13	24X7 availability
Var 14	Free shipping
Var 15	contactless service-order and delivery
Var 16	Few products are scarce in physical store but available online during COVID-19
Var 17	Previous online shopping experience
Var 18	Buying locally new brands and products i.e. made in India
Var 19	Value for money

The variables validity was tested applying Bartlett's Test of Sphericity and The Kaiser–Mayer–Olkin Measure of sampling adequacy analysing the strength of association among variables. The Kaiser–Mayer–Olkin measure of sampling adequacy (KMO) was first computed to determine the suitability of using factor analysis. It helps to predict whether data are suitable to perform factor analysis. KMO is used to assess which variables to drop from the model due to multicollinearity problem. It also determined the suitability of performing factor analysis. To determine the minimum loading necessary to include an item in its respective constructs, items with loading of 0.50 or greater were acceptable. If this does not have achieved, then it is necessary to drop the variables with lowest Eigen values until KMO overall rises above 0 .60.

Table 2: KMO and Barlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.710
Bartlett's Test of Sphericity	Approx. Chi-Square	1260.846
	df	171
	Sig.	0.000

Result for the Bartlett's Test of Sphericity and the KMO in table 2 reveals that both were highly significant and concluded that this variable was suitable for the factor analysis.

Table 3: Total Variance Explained

Total Variance Explained

Compone	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Varia	Cumulativ	Total	% of Varia	Cumulative %	Total	% of Varia	Cumulative %
1	3.512	18.487	18.487	3.512	18.487	18.487	3.503	18.438	18.438
2	2.589	13.625	32.112	2.589	13.625	32.112	2.335	12.289	30.727
3	2.053	10.804	42.916	2.053	10.804	42.916	2.074	10.914	41.641
4	1.866	9.819	52.735	1.866	9.819	52.735	1.868	9.829	51.47
5	1.731	9.111	61.845	1.731	9.111	61.845	1.851	9.744	61.214
6	1.407	7.407	69.252	1.407	7.407	69.252	1.527	8.038	69.252
7	0.995	5.238	74.489						
8	0.83	4.368	78.857						
9	0.671	3.534	82.391						
10	0.65	3.421	85.812						
11	0.574	3.023	88.835						
12	0.489	2.576	91.411						
13	0.417	2.197	93.608						
14	0.334	1.759	95.366						
15	0.277	1.457	96.823						
16	0.225	1.182	98.005						
17	0.164	0.862	98.867						
18	0.125	0.655	99.523						
19	0.091	0.477	100						

Extraction Method: Principal Component Analysis.

The total variance explained by Principal Component Analysis (PCA) is shown in **table 3**. It shows that there was a significant drop in the Eigen values from seventh component onwards. Hence, the first six components were considered, which together explain 69.25% of the total variance. To determine the minimum loading necessary to include an item in its respective constructs, Hair et al. (1992) suggested that variables with loading greater than 0.30 is considered significant, loading greater than 0.40 more important, and loading 0.50 or greater are very significant.

Table 4: Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Rotated Component Matrix						
	Component					
	1	2	3	4	5	6
VAR00001	**0.82**	-0.001	0.094	0.003	-0.046	0.004
VAR00002	**0.867**	0.085	0.026	0.041	0.016	0.058
VAR00003	**0.698**	-0.062	-0.127	0.067	0.068	-0.052
VAR00004	**0.893**	-0.011	-0.027	-0.023	-0.005	0.01
VAR00005	**0.88**	0.035	0.018	-0.046	-0.022	0.01
VAR00006	0.063	**0.687**	-0.126	-0.105	-0.047	-0.091
VAR00007	0.008	**0.686**	0.116	0.187	-0.083	0.112
VAR00008	-0.04	**0.754**	0.122	0.167	-0.024	0.104
VAR00009	-0.004	**0.879**	-0.051	-0.1	0.003	0.055
VAR00010	0.002	0.059	0	-0.158	-0.058	**0.862**
VAR00011	0.014	0.088	-0.009	0.226	0.04	**0.834**
VAR00012	0.045	0.077	0.009	**0.931**	-0.002	0.072
VAR00013	-0.004	0.026	-0.004	**0.9**	-0.082	-0.022
VAR00014	-0.069	0.103	**0.794**	-0.047	-0.088	-0.132
VAR00015	0.078	-0.076	**0.749**	0.018	0.111	0.126
VAR00016	-0.029	0.019	**0.898**	0.04	-0.009	-0.007
VAR00017	0.016	-0.038	0.021	-0.057	**0.843**	0.068
VAR00018	-0.014	-0.013	-0.038	-0.107	**0.859**	0.007
VAR00019	0.006	-0.063	0.024	0.055	**0.695**	-0.07

Table 5 : The factor loading of 19 variables six factors		
Variance %	**Factor**	**Variables**
18.4	Health & Assured output	Risk of Covid in in-store buying
		Standard product quality in online buying
		I get timely delivery as notified
		Simple ordering process
		Professional consumer support departments
13.6	Economic & Convenient	Financial savings as offers and discounts
		Wide range of brands
		Quick , safe and easy payment options
		Mobile friendly apps
10.8	Delivery & Availability	Free shipping
		contactless service-order and delivery
		Few products are scarce in physical store but available online during COVID-19
9.8	Time utilization	Pleasure of usage to cover-up staying at home boredom
		24X7 availability
9.1	Experience & Regional Products	Previous online shopping experience
		Buying locally new brands and products i.e. made in India
		Value for money
7.4	Product variety & Easy return	Easy product return policy
		Variety of product alternatives

For this study, the general criteria were accepted items with loading of 0.50 or greater. The results shown in **table 4**.

The factor loading of 19 variables was then observed, and the variables were clubbed into six factors as shown in **table 5**.

Findings & Conclusion

The analysis and scrutiny of the primary as depicted in the above tables indicates that of the Six deduced factors, the first important factor ie "Health & Assured output" played a vital role in consumers choice towards Online buying and could be improved by proper innovative ideas of hygiene and safety and more assured commitments. It is determined by the promptness of response to the complaints and proactive solution to it. The second factor Economic & Convenient is emerged as an important factor which is money saving and easy handling of online buying. Delivery & Availability as a third important factor, Time utilization as fourth influencing factor, Experience & Regional products, the fifth important factor. Last but not least, the sixth factor as Product variety & Easy return

With the understanding of importance of these factors, online companies should concentrate on them as they are indirect components of encouraging online buying and strongly influence a customer's choice of in-store or online buying

Also, findings highlights the number of people that used to do online buying (more than five times in a month) before the COVID-19 has tremendously increased from 22.6 percent to straight away 52 percent. The results are indicative enough for the companies to prioritize their resources towards more aggressive online marketing and selling strategies along with providing a safe and secure medium to buy.

Also, findings highlights the movement of consumers to order online from fashion to essential commodities. Before COVID-19, 42 percent of consumers were buying fashion items (Clothes& Cosmetics) online followed by restaurant food (26 percent) and only six percent consumers were buying books & Stationery online. But during COVID-19, 58 percent of the consumers purchased essentials and only eight percent consumers purchased fashion and least preferred product still remains the books & stationery as six percent.

With a view of resonating with the modern consumers, e-companies needs to make a deliberate effort to perform consciously and grow in a tenable manner. They should encourage a healthy lifestyle to stay in the eyes of the consumers. The shift of being price sensitive to value conscious of consumers demands a lucrative value preposition offer from the online companies. With the increasing interest of consumers in local signifies the importance for companies to explore customisation locally. As a key rule, consumer should be the centre of locus.Infact digitalisation should be a priority for the traditional retailers to survival.

The findings of this study can help online companies in their operation and strategic plan of marketing. It can be conclude that online companies should create an epithetical relationship with the customer through innovative redressal plans and enhance their services quality & brand image, better connectivity and goodwill with the consumer because the consumer always want more from their brands. They should keep on adding new supplementary services and make an offer worth for value for money. Also marketers could work on the areas which are left unattended or has not been given much of the attention like new ways to handle consumers in new normal of COVID-19 etc. In addition, online companies should train their employees to be sensitive to the special needs and wants of customers. To successfully compete in today's value conscious environment, online companies in Delhi must establish the value of their offers as superior to others. Also firms should maintain integrity with transparency while using huge amount of consumer data for any critical decision making

The policymakers must adopt specific measures to facilitate adoption of e-commerce among enterprises which are small and medium, create pools of specialized talents and attract investors across the nations.

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Eco-Friendly HR for Sustainable Futures: A Comprehensive Bibliometric Exploration of Green Human Resource Management Practices

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Abstract

This research paper provides a comprehensive examination of the challenges and opportunities associated with the implementation of Green Human Resource Management (GHRM) practices within organizations. The primary objective is to align human resource strategies with the United Nations' sustainable development goals for 2030. This study integrates descriptive bibliometric analysis, data visualization using VOSviewer software, and thematic analysis.

The findings shed light on various challenges, such as employee resistance, knowledge gaps, limited resources, cultural disparities, and resistance from top management. In response, the paper advocates for GHRM initiatives encompassing energy conservation, adoption of a paperless office, water conservation, green buildings, recycling, waste management, and the introduction of green incentives.The paper suggests that future studies could explore sector-specific or region-specific GHRM challenges, evaluate technological and policy impacts, and investigate the interdisciplinary integration of GHRM with broader sustainability frameworks.

Keywords: COVID-19, Green Human Resource Management, Environmental Sustainability, HR Challenges, Green initiatives and Bibliometric analysis

1. Introduction

Organizations today recognize the importance of considering social and environmental implications, in addition to financial earnings, to ensure long-term sustainability (Bombiak & Marciniuk-Kluska, 2018; Kainzbauer & Rungruang, 2019). Sustainability, defined as meeting present needs without compromising future generations' ability to meet their own needs, requires organizations to acknowledge their responsibilities towards social and environmental risks and opportunities when making business decisions (Ren, Tang, & E. Jackson, 2018). The "triple bottom line" approach, focusing on People, Planet, and Profit, is adopted to achieve sustainability, with the Human Resource Management (HRM) function playing a crucial role in advancing organizations' sustainability plans by fostering trust, motivation, values, and skills (Santana & Lopez-Cabrales, 2019).

The growing awareness and regulations related to environmental sustainability have led to the emergence of the concept of Green Human Resource Management (GHRM) for effective Environmental Management (EM) within organizations (Ren, Tang, & E. Jackson, 2018). Anlesinya & Susomrith, 2020 support the three-dimensionality of sustainable HRM, which includes GHRM, socially-responsible HRM, and Triple Bottom Line (TBL) HRM (Stahl, Brewster, Collings, & Hajro,

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2020). Aust, Matthews, & Muller-Camen, 2020 suggest a fourth type, Common Good HRM, which can align with any of the three types based on the challenges related to social, ecological, or TBL dimensions (Anlesinya & Susomrith, 2020).

The concept of GHRM is defined as "phenomena relevant to understanding relationships between organizational activities impacting the natural environment and the design, evolution, implementation, and influence of HRM systems" (Ren, Tang, & E. Jackson, 2018). GHRM encompasses various human resource activities, including recruitment, training and development, employee relations, performance appraisal, and pay and reward, all directly linked to an organization's human resources (Bombiak & Marciniuk-Kluska, 2018). The primary objective of GHRM is to achieve organizational goals or objectives while ensuring environmental sustainability (Ogbeibu, Emelifeonwu, Senadjki, Gaskin, & Kaivo-oja, 2020). Green HR practices and knowledge capital preservation constitute the two primary components of "green HR" (Mandip, 2012). In developing a green workplace, it is crucial for organizations to design and implement eco-friendly policies, recognizing that achieving sustainability goals is challenging without the active involvement of human resources and the implementation of sustainable policies (Ogbeibu, Emelifeonwu, Senadjki, Gaskin, & Kaivo-oja, 2020).

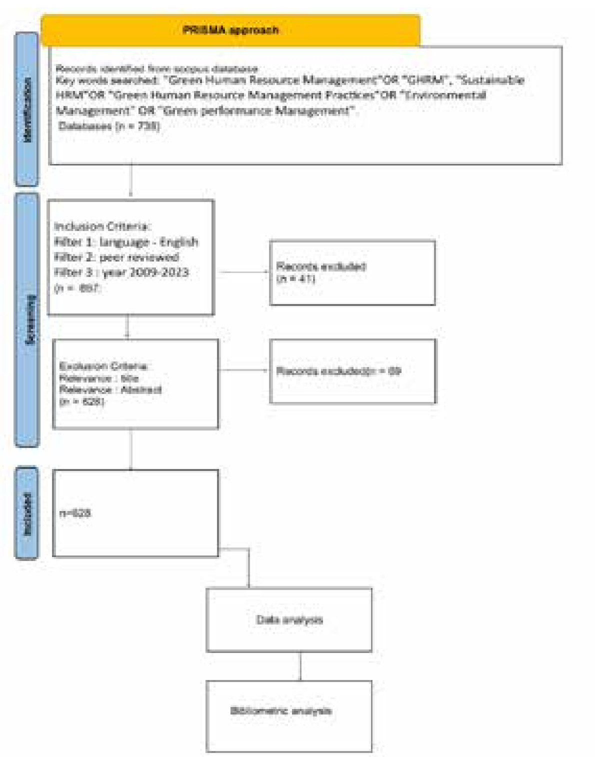
The study aims to achieve the following objectives:

1. To comprehensively examine the concept of GHRM through bibliometric analysis.
2. To investigate the challenges faced by GHRM.
3. To study the initiatives that an organisation can adopt to lead to GHRM.
4. To explore the potential opportunities of implementing GHRM.

1.1 Research Methodology

To properly comprehend the substance of studies on GHRM our research is based on a literature review methodology using a descriptive bibliometric method, data analysis visualisation (using VOS viewer software), and thematic analysis because this technique provide researchers and practitioners with some insightful information (Ikpaahindi, 1985). The steps in the study involves establishing the GHRM keywords, gathering data, and conducting analysis. The bibliometric approach actually blends performance analysis and scientific mapping techniques. Performance analysis uses a variety of techniques, such as word frequency analysis, citation analysis, and counting publications by a unit of analysis, to offer data regarding the volume and impact of research (e.g. authorship, country). Additionally, we employed science mapping, which is based on relational indications and shows how various parts relate to one another spatially (Jin et al., 2019).

Figure 1: PRISMA APPROACH



SOURCE: Author's own

1.2 Keywords Selection and Data Collection

The use of the Scopus database as the study's data source was the first stage in the data gathering process because it is the largest database with a variety of publications and analytic tools and was launched by Elsevier in November 2004. (Chadegani et al., 2013). As a result, a thorough analysis of Scopus was done in March 2023, and information was gathered in March 2023.

Prior bibliometric research and literature reviews on Green Human Resource Management helped us identify and choose the following keywords for our search: "Green Human Resource Management", "GHRM", "Sustainable HRM", "Green Human Resource Management Practices","Environmental Management" and "Green performance Management". Then, in order to provide a complete and current data collection, we filtered the core document and set search produced 738 publications, including articles, book chapters, conference reviews, and conference papers.

1.3 Inclusion and Exclusion Criteria

We took into account works that were written in English only excluding other languages. Further by manually eliminating duplicates and modifying data set, 628 published documents remained. Our analysis covered a period from 2009 to 2023.

2. Data Analysis

We employed VOSViewer, a programme that supports the building and visualisation of bibliometric networks. Three map views are offered by VOSviewer: a network visualisation, an overlay visualisation, and a density visualisation (Van Eck & Waltman, 2010). These visualisations allow for zooming and scrolling, enabling researchers to fully examine the topic under study. In order to create the network, overlay, and density map, the data set is therefore refined at the software level. Items are represented in the network representation by their label and by default, a circle as well. The label and item's circle sizes are dependent on the item's weight. The cluster to which an item belongs determines the hue of the object. We take into account the temporal distribution of bibliometric variables in the overlay visualisation. Next, we examine the two density visualisation subtypes in our study: item density visualisation and cluster density visualisation. Finally, we use the co-occurrence of keywords adopting a full counting approach and the cluster analysis produced matching authors and index keywords with the list of the most prominent terms of the data set to answer the second research question by examining the primary subjects on our data set. The substance of the papers in each cluster is therefore examined using a theme analysis. The process we use to assign each research paper to a cluster is as follows: we arrange the papers containing keywords into distinct clusters and manually verify that each cluster contains all the articles linked with the relevant keywords.

3. Descriptive Bibliometric Analysis

The primary objective of the descriptive analysis is to elucidate the principal features inherent in our dataset, with a specific emphasis on four aspects that are instrumental in capturing scholars' attention toward GHRM. These aspects encompass:

(1) the papers most frequently cited and citations distributed across years;

(2) bibliographic coupling;

(3) publishing activity categorized by country; and

(4) the co-occurrence of keywords.

3.1 Citations by year and most cited documents

The number of citations provides a sense of the documents' applicability to a certain subject of study (Baier-Fuentes, Merigó, Amorós, & Gaviria-Marín, 2019).

Table 1 displays the total number of citations per article every year, taking into account the maximum and average total citations. This graph specifically emphasises the most referenced article each year as well as the year in which the papers are on average more cited. This analysis, which is constrained to citations that are present in our data set, enables us to determine the years in which the average accurately reflects the impact of the papers and the years in which it is distorted by the presence of a single paper with a large number of citations but other documents that join it with few citations. This happened in the year 2013 in which most cited papers with a number of citations much higher than average.

Table 1 No of Citations

Authors	Title	Year	Cited by
Renwick D.W., Redman T., Maguire S.	Green Human Resource Management: A Review and Research Agenda*	2013	793
Singh S.K., Giudice M.D., Chierici R., Graziano D.	Green Innovation and Environmental Performance: The Role of Green Transformational Leadership and Green Human Resource Management	2020	509
Paillé P., Chen Y., Boiral O., Jin J.	The Impact of Human Resource Management on Environmental Performance: An Employee-Level Study	2014	431
Dumont J., Shen J., Deng X.	Effects of Green HRM Practices on Employee Workplace Green Behavior: The Role of Psychological Green Climate and Employee Green Values	2017	429
Kim Y.J., Kim W.G., Choi H.-M., Phetvaroon K.	The Effect of Green Human Resource Management on Hotel Employees' Ecofriendly Behavior and Environmental Performance	2019	382
Kramar R.	Beyond Strategic Human Resource Management: Is Sustainable Human Resource Management the next approach?	2014	375
Jabbour C.J.C., De Sousa Jabbour A.B.L.	Green Human Resource Management and Green Supply Chain Management: Linking two emerging agendas	2016	373
Tang G., Chen Y., Jiang Y., Paillé P., Jia J.	Green Human Resource Management Practices: Scale Development and Validity	2018	291
Zaid A.A., Jaaron A.A.M., Talib Bon A.	The Impact of Green Human Resource Management and Green Supply Chain Management Practices on Sustainable Performance: An Empirical Study	2018	282

In Table 1, about the top 10 cited papers, the first paper (Renwick, Redman, & Maguire, 2013), although first published, has 793 citations. According to this research, there is a knowledge gap about how GHRM practices influence employee motivation to participate in environmental activities, contrasted to an understanding of how organisations promote green talents and provide possibilities for involvement in EM efforts. Organisations appear to be underutilizing the full range of GHRM practices, thereby impeding their ability to improve their environmental management efforts.

The second paper (with 509 citations) is Singh, Giudice, Chierici, & Graziano, 2020, their study revealed that GHRM has an indirect influence on a firm's environmental performance through its impact on green innovation. Moreover, they also advance the current understanding by demonstrating that the relationship between HRM and performance is not solely dependent on the additive effects of green transformational leadership and green innovation as antecedent and mediator, respectively, or their interactive effects, but rather a combination of both forms. This highlighted the critical role of leadership in shaping HRM practices, which subsequently impact green innovation and ultimately predict the environmental performance of the organisation. The other most cited papers, in Table 1, have fewer citations (from 282 to 431).

3.2 Bibliographic Coupling

In this study, we utilized bibliographic coupling, a technique that identifies and analyzes the relationships between publications based on the references they share. The application of this method revealed the presence of four distinct clusters denoted by different colors: yellow, blue, green, and red (refer to Figure 2). These clusters represent groups of publications that exhibit strong connections through the references they cite, indicating distinct streams of literature (Bellucci, Marzi, Orlando, & Ciampi, 2021).

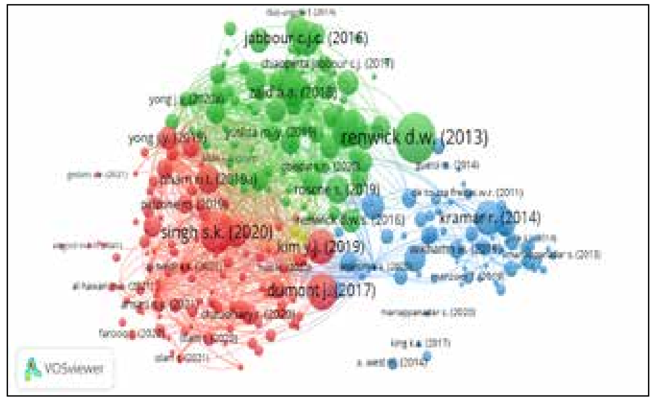
It is noteworthy that all papers within each cluster presented links to one another, demonstrating a cohesive relationship within the respective research domains. Additionally, it is important to acknowledge that while all papers displayed connections, some of these links were weaker and hence not as visibly represented in the visual depiction (Figure 2). These weaker connections hint at subtler associations between certain publications, suggesting nuanced interrelations within the academic discourse. Further exploration and analysis are needed to better understand the depth and significance of these weaker links in the scholarly network.

To conduct this analysis, top seven cited articles in each cluster formed from the bibliographic coupling of references, establishing connections between their prevalent themes to define distinct literature streams. This approach allowed us to gain a deeper understanding of the thematic underpinnings and research focus characterizing each cluster.

Red Cluster: Green Human Resource Management (GHRM) for Sustainability

The bibliometric theme within the red cluster revolves around the concept of GHRM and its pivotal role in fostering sustainability within organizations. The seven articles collectively emphasize diverse dimensions of GHRM and its impact on organizational components, with the overarching goal of promoting environmentally responsible behaviors and sustainable practices. The identified themes within this cluster include the systematization of GHRM knowledge, mediation of organizational citizenship behavior, linking G-HRM to green organizational citizenship behavior, and fostering green creativity through GHRM. The findings reveal a multifaceted role of GHRM, contributing to sustainable development and creating a positive environmental impact.

Figure 2: Network Visualisation Map



Source: Author's own

Green Cluster: Trends and Gaps in Green Human Resource Management Research

The bibliometric theme in the green cluster explores the academic landscape of GHRM through a comprehensive literature review. Each paragraph within this cluster addresses distinct aspects of GHRM research, covering the identification of progressions and research gaps, implementation in specific contexts like Palestinian healthcare organizations, and a broader examination of GHRM literature. The themes include clusters such as GHRM practices, employee green behavior, and organizational sustainability. The systematic review, mixed research approach, and comprehensive literature review collectively contribute to understanding the current state, trends, and future research directions in the field of GHRM.

Blue Cluster: CSR, HRM, and Sustainability Practices

The common bibliometric theme across the blue cluster involves the systematic review and analysis of the relationship between CSR, HRM, and sustainability practices. Each paragraph within this cluster explores different facets of this overarching theme, offering insights into the current state of research, key topics, and areas for future exploration at the intersection of

CSR, HRM, and sustainability practices. The themes include a systematic review of the CSR and HRM link, emerging questions in GHRM, and a systematic review of sustainable HRM, research. Collectively, Figure 2: Network Visualisation Map Source: Author's own these reviews contribute to understanding the interconnected fields and provide directions for future research.

Yellow Cluster: Environmental Strategies, HRM, and Sustainable Development

The bibliometric theme within the yellow cluster revolves around the exploration of the intersection between corporate environmental strategies, HRM practices, and sustainable development within organizations. The paragraphs within this cluster contribute to understanding the relationship between corporate environmental strategies and HRM, emphasizing the importance of coherence and consistency in promoting environmental performance and sustainable development. The themes include intraorganizational green careers and HR development, which extends the concept of HR development to include environmental considerations, and bibliometric characterization of sustainable HRM literature, providing insights into the most and least discussed aspects of sustainable HRM and directions for future research.

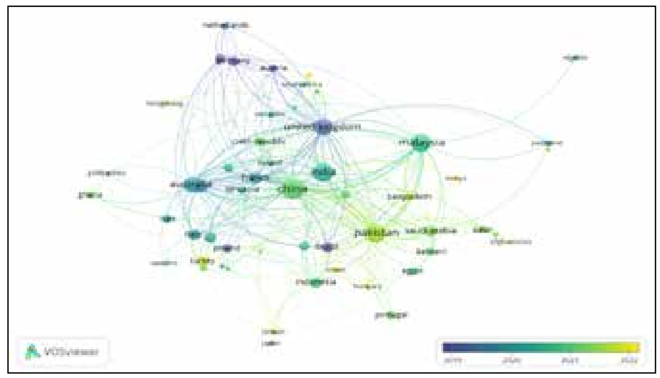
3.3 Co-authorship at Country Level

The bibliometric co-authorship indicator at the country level plays a crucial role in improving productivity outcomes, as it signifies both geographic collaboration and distribution (Perianes- Rodriguez, Waltman, & van Eck, 2016). Utilizing the VOSViewer software, our analysis identifies China as the most active country in advancing publications on GHRM, with Pakistan, India, and Malaysia closely following suit (see Figure 3).

3.4 Keywords Co-occurrence

The author's specified keywords are used in co-occurrence of keywords analysis to look into the relationships between the major subjects in the subject area under consideration (Jia, Liu, Chin, & Hu, 2018). The co-occurrence of keywords in GHRM can provide insights into the important concepts, topics, and themes that are associated with this field of study. By analyzing the frequency and relationships of these keywords, one can identify patterns and trends in the literature, as well as the most relevant and impactful topics that have emerged over time.

Figure 3 Country Co authorship overlay visualisation

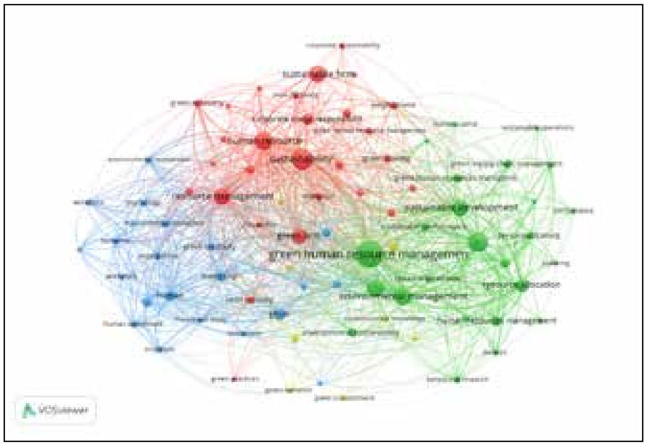


Source : Authors own

The data in Figure 4 reveals relevant to GHRM study. It establishes the network's keyword cooccurrences Additionally, we only take into account words that appear at least 9 times in the list. The singular and plural forms ("Green Human Resource Management", "GHRM", "Sustainable HRM", "Green Human Resource Management Practices", "Environmental Management" and "Green performance Management") were properly processed.

Some of the most common keywords that co-occur with GHRM include: Sustainability, Environment, Corporate social responsibility, Energy efficiency, Renewable energy, Waste reduction, Green initiatives, Green practices, Carbon footprint, Eco-friendly,Green incentives,Water conservation, Recycling, Green jobs, Green workplace These keywords all relate to different aspects of GHRM and are commonly used in discussions and strategies related to environmental sustainability in the workplace.

Figure 4: Keyword Co occurrence Network Visualisation



Source: Author's own

4. Challenges of GHRM

Employee Resistance to Change: One significant hurdle is the resistance encountered from employees when introducing GHRM practices. Deshwal (2015) highlights that employees may exhibit reluctance in embracing new ideas, perceiving changes as additional responsibilities or disruptions to established routines. Overcoming such resistance proves challenging, as altering employee behavior requires time and not every employee is equally motivated to participate in the promotion of GHRM practices (Deshwal, 2015).

Lack of Knowledge: Another impediment lies in the lack of awareness among employees regarding the environmental impact of their work practices. Ullah (2017) emphasizes that the success of GHRM hinges on fostering understanding and awareness about environmental issues and the benefits of adopting green practices as shown by Figure 4: Keyword Co occurrence Network Visualisation Source: Author's own. Without proper knowledge dissemination, the implementation of sustainable HR practices may be hindered.

Limited Resources: The financial constraints associated with implementing GHRM practices pose a significant challenge. Deshwal (2015) notes that cultivating a culture of GHRM throughout an organization is a time-consuming process, and the associated expenses can be prohibitive. Organizations may lack the necessary resources to make essential adjustments for the successful incorporation of sustainable HR practices (Olateju, Aminu, & Danmola, 2020).

Lack of Expertise: The absence of internal expertise is identified as an obstacle in effective implementation of GHRM practices. Deshwal (2015) highlights the dilemma faced by HR professionals who may lack the knowledge required to establish green structures, green processes, green tools, and green thinking within the organisation. This knowledge gap can impede the selection and development of future leaders.

Organisational Difficulties: Adhering to environmental norms and regulations present a significant challenge for Organisations adopting GHRM Additionally, Deshwal(2015) underscores the difficulty in measuring the effectiveness of green HR practices in influencing employees behaviour, adding a layer of complexity to the implementation process.

Resistance from Top Management: The commitment of top management to the concept of GHRM is crucial for successful implementation. Olateju, Aminu, & Danmola(2020) emphasis on partial commitment from from top management can impede the execution of green initiatives, creating a barrier to the comprehensive integration of sustainable HR practices within organisation.

5. Initiatives for GHRM

Energy Conservation: Office energy conservation is crucial for environmental impact. Workplaces globally are implementing programs to save energy. This includes policies like turning off lights and electronics during non-use hours, promoting natural light and air, and using energy-efficient equipment. Companies are also exploring renewable energy sources like solar panels to reduce dependence on non-renewable energy. Conducting energy audits helps identify areas for reducing energy consumption and costs, contributing to effective and eco-friendly services The Paperless Office: the shift to a paperless office, enabled by information technology, has transformed traditional office practices. Now a days, key documents are digitized, reducing or eliminating the need for paper. This transition not only cuts down on paper consumption but also lowers costs related to printing, copying, and storing physical documents. It also saves time in document retrieval. The move towards a paperless office contributes to resource conservation, pollution prevention, and the preservation of water and energy.

Water conservation: To promote water conservation in manufacturing, GHRM practices encourage employees to adopt eco-friendly habits, like shorter showers and reusable water bottles. Implementing low-flow restroom equipment and water-saving landscaping, such as native plants and drip irrigation, further reduces environmental impact. This approach not only supports sustainable development but also engages staff in eco-friendly behaviors, fostering a culture of water conservation in the workplace.

Green building: Organizations globally increasingly favor eco-friendly buildings, like the Bullitt Center in Seattle, to minimize environmental impact. Green structures adhere to construction standards that reduce natural resource exploitation. They promote sustainable practices such as energy efficiency, renewable energy use, and effective stormwater management. The Bullitt Center exemplifies these principles by utilizing rooftop solar panels, rainwater harvesting, and composting toilets for energy, water, and waste efficiency. Constructed with sustainable materials, the building maximizes natural light and ventilation, reducing the need for artificial lighting and air conditioning. Its location encourages eco-friendly commuting, contributing to a new benchmark for sustainable construction globally.

Recycling and Waste Management: It involves transforming waste into new products. This includes educating employees on eco-friendly practices, such as segregating recyclable and non-recyclable materials. To further promote recycling, companies can install recycling stations, implement recycling programs, and encourage reusable containers and utensils. HR professionals play a role in informing employees about waste reduction benefits and fostering participation in green initiatives. Overall, integrating recycling and waste management into GHRM practices not only reduces environmental impact but also promotes sustainable development and engages employees in ecofriendly behaviors.

Green Incentives: Compensation and rewards are essential processes used to recognise employee performance in organisation. In the context of GHRM , these processes can also be utilized as tools to encourage environmental sustainability within organisations. Green incentives can be given to departments and individuals who have demonstrated innovative initiatives and contributed to the organisations environmental goals by reducing waste, utilising green resources, and saving energy. By recognising and rewarding employees who contribute to environmental sustainability, organisations can promote a culture of eco-friendliness and encourage employees to take actions that benefit the environment. For example, Google offers its employees a free shuttle service that runs on biodiesel, reducing the number of cars on the road and promoting eco-friendly commuting;

6. Opportunities in implementing GHRM Policies

Organizations may benefit from implementing GHRM practices in a number of ways, including:

Improving corporate image: GHRM policies can be implemented to improve an organisation's corporate image by showcasing the organisation's dedication to environmental sustainability. This can draw in clients, investors, and future workers who place a high value on sustainability.

Engagement of employees: GHRM practices that encourage employee involvement in environmental efforts, offer green training programs, and recognise staff members' environmental accomplishments can all assist to boost employee engagement and motivation.

Regulatory compliance: Adopting GHRM practices can assist organisations in adhering to environmental laws and standards, avoiding fines and other consequences, and safeguarding their brand.

Cost Saving: Savings on energy bills, trash disposal expenses, and the purchase of raw materials are possible for organisations that adopt green practices including consuming less energy, generating less waste, and using sustainable procurement methods.

Talent Attraction & Retention: GHRM practices can attract environmentally conscious talent. Employees are increasingly seeking employers who share their values, including a commitment to sustainability. This can help in recruiting and retaining best talent which can contribute to a positive workplace culture.

Stimulate Innovation: A focus on sustainability can drive innovation within the organization. GHRM encourages the development of new, environmentally friendly processes & technologies, leading to increased efficiency and productivity.

Supply Chain Responsibility: Organizations often have extended supply chains that contribute to their environmental footprint. GHRM can extend its influence to supply chain management, encouraging suppliers to adopt sustainable practices and creating a more responsible and resilient supply chain.

Corporate Social Responsibility (CSR): GHRM aligns with broader CSR goals, contributing to a positive corporate image. It can be an integral part of an organization's commitment to social responsibility and ethical business practices.

Employee Health and Well-being: Some GHRM practices, such as providing green spaces, promoting sustainable transportation options, and reducing exposure to harmful substances, can positively impact employee health and well-being.

7. Conclusion:

In conclusion, the study delves into the critical realm of Green Human Resource Management (GHRM) and its multifaceted dimensions in promoting sustainability within organizations through descriptive bibliometric analysis. It sheds light on the evolving landscape of GHRM research, emphasizing the most cited papers, bibliographic coupling, co-authorship at the country level, and keywords co-occurrence. Notable findings include the identification of key research clusters, the prominent role of China in advancing GHRM publications, and the exploration of major keywords associated with GHRM .

The study supports that employee resistance, lack of knowledge, limited resources, and other organizational difficulties pose significant hurdles that can be overcome through a strategic and collaborative approach involving effective communication, education, and commitment from top management. It also proposes initiatives that organizations can adopt to embrace GHRM successfully like energy conservation, a paperless office, water conservation, green building practices, and recycling. The study repositions GHRM as a catalyst for innovation, supply chain management, corporate social responsibility, and employee health and well-being.

Furthermore, the study recognizes the vast array of opportunities associated with implementing GHRM policies namely improving corporate image, increased regulatory compliance, cost savings, talent attraction, and retention.

In essence, GHRM emerges not only as a response to environmental imperatives but also as a strategic imperative for organizational success in the evolving global landscape. The study provides valuable insights for researchers, practitioners, and policymakers seeking to understand and contribute to the evolving field of Green Human Resource Management.

8. Limitations

Despite its contributions, this study has some limitations that should be acknowledged. First, the research is based on a bibliometric analysis of literature listed on Scopus database only, though there are many other databases like web of science, dimensions, etc.

Second, the study focuses on English-language publications, potentially excluding valuable contributions in other languages.

Third, the study is based on publications from 2009 to 2023. As the field of GHRM is dynamic, with ongoing developments and emerging trends, future research should consider updating the analysis to capture the latest advancements and shifts in research focus.

Fourth, while the study identifies challenges, initiatives, and opportunities, the effectiveness of these strategies in diverse organizational contexts may vary. Practical implementation and success may depend on organizational size, industry, and cultural factors.

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Ethical Governance and CSR in Corporate Finance: A Comparative Analysis of Selected Companies from the IT, Pharmaceutical, and Banking Sectors

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Abstract

This paper delves into the intricate intersection of ethics, financial globalization, and stakeholder responsibility within the evolving landscape of corporate finance. As the dynamics of global markets continues to reshape the financial terrain, there arises a pressing need to reassess traditional frameworks and cultivate a new conceptualization of corporate finance that places a paramount emphasis on ethical considerations and stakeholder engagement. This study explores the ethical dimensions of financial decision-making, the impact of globalized financial systems on corporate behavior. By examining the evolving relationship between ethics, financial globalization, and stakeholder responsibility, this paper seeks to contribute to a deeper understanding of how corporations can navigate the complex ethical challenges imposed by an interconnected and rapidly changing global financial environment.

Keywords: Ethics, Finance, Industry, Globalization

1. Introduction

As the world becomes increasingly interconnected through financial networks, the traditional boundaries that once defined corporate behavior are undergoing a profound transformation and the integration of ethics, financial globalization, and stakeholder responsibility has emerged as a pivotal focal point in the discourse on corporate finance. This shift necessitates a comprehensive reevaluation of ethical frameworks and the incorporation of stakeholder concerns into the heart of corporate decision-making (Erin et al., 2017; Marantika, 2020). This paper endeavors to unravel the intricate dynamics that characterize the interplay between ethics, financial globalization, and stakeholder responsibility in the realm of corporate finance. By delving into the nuances of these elements, the study aims to discern the emerging contours of a new conceptualization of corporate finance that reflects the demands of an interconnected global economy.

Ethics in corporate finance relegated to the periphery of economic discourse, has assumed a central role in contemporary discussions. The ethical implications of financial decision-making are not confined to the boardroom; they permeate the fabric of societies and impact the well-being of diverse stakeholders. This shift in perspective is underscored by a growing recognition that corporations are not mere economic entities but influential factors with the potential to shape social and environmental landscapes. As such, ethical considerations transcend regulatory compliance, demanding a deeper examination of the moral imperatives guiding financial strategies in a world where corporate actions resonate across cultures, economies, and ecosystems (Abdullah & Valentine, 2009; Al-Saidi, 2021). Figure 1 and figure 2 depicts a social responsibility in corporate finance to take care of the environment and employees as well while we take into account the economic aspects.

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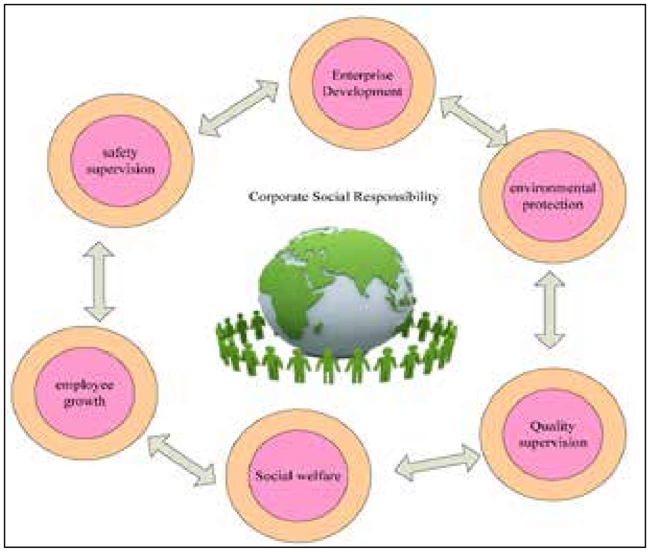


Figure 1: Social ethics in corporate finance

Figure 2: corporate social responsibility

Financial globalization emerges as a driving force in this paradigmatic shift. The rapid integration of financial markets across the globe has dismantled traditional barriers, by creating connections and interlinking economies with financial institutions in unprecedented ways (Aggarwal, 2015). While financial globalization promises economic growth and diversification, it also introduces a host of ethical challenges. The 2008 global financial crisis serves as a stark reminder of the systemic risks inherent in a globally connected financial ecosystem, prompting for a reevaluation of ethical responsibilities in a wide array of corporations and financial institutions operating in this intricate web of interdependence (Mensi et al., 2018).

Navigating this ethically charged landscape necessitates a profound reconsideration of the very essence of corporate responsibility, giving rise to the concept of stakeholder responsibility. Moving beyond the narrow confines of shareholder primacy, corporations are increasingly acknowledging the moral imperative to consider the interests of a broader array of stakeholders (Škare & Hasić, 2016). The stakeholder theory, with its emphasis on a more inclusive and holistic approach to corporate governance, serves as a guiding principle in this endeavor. Yet, the challenges of defining and prioritizing stakeholders becomes magnified in the context of a globalized economy, where diverse communities and environments are impacted by corporate decisions that transcend geographic boundaries (Gupta & Mittal, 2020; Mittal, 2020)

As the three dimensions—ethics, financial globalization, and stakeholder responsibility—converge, a compelling narrative emerges, suggesting the need for a new conceptualization of corporate finance. This conceptualization must transcend the dichotomy of profit versus ethics, shareholder versus stakeholder, and national versus global interests. Instead, it should reflect a nuanced understanding of the interplay between ethical principles, the realities of financial globalization, and the evolving responsibilities corporations bear toward stakeholders.

In the subsequent sections of this research paper, the study presents literature surrounding each of these components—ethics, financial globalization, and stakeholder responsibility. By synthesizing insights from diverse scholarly perspectives, the study aims to contribute to the ongoing discourse surrounding the evolution of corporate finance and provides insights to understanding the imperatives of ethical financial decision-making, the challenges posed by financial globalization, and the complexities of stakeholder responsibility, ultimately guiding the formulation of a novel and adaptive conceptual framework for corporate finance.

2. Literature Review:

2.1 Ethics in Corporate Finance

The ethical underpinnings of corporate finance for long have been a subject of scholarly inquiry. Historically, the shareholder wealth maximization theory has dominated the corporate landscape, positing that the primary responsibility of corporations is to maximize returns for shareholders (Festus et al., 2015). However, the ethical implications of this perspective have come under scrutiny, particularly in the wake of corporate scandals that rocked the financial world. Crisóstomo, Brandão, & López-Iturriaga (2020) argue for a broader conception of corporate goals that incorporates ethical considerations, emphasizing the need to balance shareholder interests with those of other stakeholders.

The rise of ethical considerations in corporate finance is not merely a response to past transgressions but a recognition of the interconnectedness of financial markets and the broader societal impact of corporate actions. Concepts like Corporate Social Responsibility (CSR) have gained prominence, advocating for a more holistic approach that integrates environmental, social, and governance (ESG) factors into decision-making processes (Kiesewetter & Manthey, 2017). The evolving ethical landscape in corporate finance is indicative of a paradigm shift towards a more inclusive and responsible form of capitalism.

2.2 Financial Globalization: Catalysts and Challenges

The advent of financial globalization has been a defining feature of the contemporary economic landscape. The dismantling of trade barriers, advancements in technology, and the liberalization of financial markets have accelerated the flow of capital across borders. While financial globalization presents opportunities for economic growth and diversification, it also introduces a myriad of ethical challenges.

A notable aspect is the amplification of systemic risk, as demonstrated by the global financial crisis of 2008. Scholars like (Sharma, 2021; Yaha et al, 2017) argue that the interconnectedness of financial markets can exacerbate the transmission of financial shocks, posing ethical questions about the responsibility of financial institutions in preventing and mitigating systemic risks. Additionally, the phenomenon of regulatory arbitrage, where corporations exploit differences in regulatory frameworks across jurisdictions, raises concerns about ethical corporate behavior in a globalized context.

2.3 Stakeholder Responsibility in Corporate Decision-Making

The traditional emphasis on shareholder primacy is being supplanted by a more inclusive approach that recognizes the interests of various stakeholders, including employees, customers, communities, and the environment. The stakeholder theory, propounded by Veres (2019), contends that corporations should consider the needs and interests of all stakeholders, viewing them as essential contributors to long-term success.

In the context of financial globalization, the dynamics of stakeholder responsibility become even more intricate. The interconnectedness of global supply chains, for instance, demands that corporations extend their responsibility beyond immediate stakeholders to encompass a broader, often transnational, community. This evolution in stakeholder responsibility is not only a moral imperative but also a strategic necessity in navigating the complexities of a globalized business environment.

2.4 Toward a New Conceptualization of Corporate Finance

The convergence of ethics, financial globalization, and stakeholder responsibility presents an opportunity to redefine the conceptual underpinnings of corporate finance. Building on the works of scholars such as Heath (2014) and Donaldson and Preston (1995), who argue for a stakeholder-oriented approach, there is a growing recognition that corporations must align their financial strategies with ethical principles and a broader sense of responsibility.

Integrating ethics into financial decision-making processes in a globalized context involves not only complying with regulations but actively seeking to contribute to the well-being of the societies in which corporations operate. This requires a shift from a compliance-driven approach to an ethos of corporate citizenship, where corporations proactively engage with stakeholders to understand and address their concerns.

In conclusion, the synthesis of ethics, financial globalization, and stakeholder responsibility in the domain of corporate finance is a multifaceted endeavor that demands a nuanced understanding of the interconnections and tensions between these elements. This paper seeks to contribute to this ongoing discourse by examining the evolving landscape of corporate finance in the context of an interconnected global economy, shedding light on the ethical imperatives and responsibilities that corporations must navigate to ensure sustainable and equitable financial practices.

3. Methodology

The research adopts a comparative approach to analyze how different industries, regions, and corporate structures respond to the challenges posed by financial globalization. By drawing comparisons across diverse contexts, the research aims to identify commonalities, divergences, and best practices. This comparative analysis contributes to the development of nuanced recommendations for corporate finance practices that are sensitive to both global and local considerations.

4. Results - Indian case studies:

4.1 Ethical practices in the Indian IT Sector - Infosys and Sustainable Sourcing

In the Indian IT sector, Infosys stands out as a leading example of ethical practices in the face of financial globalization. Recognizing the significance of sustainable sourcing in a globalized market, Infosys implemented robust measures to ensure responsible procurement of materials for its operations. The company established a comprehensive supplier code of conduct, emphasizing fair labor practices, environmental sustainability, and adherence to international standards.

Infosys actively engaged in partnerships with suppliers committed to ethical practices, conducting regular audits to monitor compliance. In one instance, Infosys terminated a contract with a supplier found in violation of ethical sourcing standards, sending a clear message about the company's unwavering commitment to ethical considerations (Azam et al., 2022; Sharma, 2021). This case illustrates how a proactive approach to ethical sourcing in the Indian IT sector contributes to a positive global image and underscores the importance of holding suppliers accountable for ethical practices (Triulzi, 2020).

Table 1 presents Infosys's rank in ethical standards (India) based on notable ethical criteria based on past five years:

Table 1: Infosys's Rank in Ethical Standards (India)

Year	Infosys's Rank in Ethical Standards (India)	Notable Ethical Criteria	Observations
2018	3	Sustainability, Labor Practices	Known for initiatives in renewable energy and employee welfare programs.
2019	2	Corporate Governance, Community Engagement	Recognized for transparency and CSR activities in education and healthcare.
2020	2	Sustainability, Ethical Business Practices	Continued focus on environmental sustainability and anti-corruption measures.
2021	1	Corporate Governance, Labor Practices	Topped in governance standards, diversity and inclusion policies strengthened.
2022	1	Community Engagement, Sustainability	Led in CSR initiatives; strong emphasis on reducing carbon footprint.
2023	2	Ethical Business Practices, Labor Practices	High standards in business ethics; focus on innovative employee wellness programs.

Infosys has maintained a top position in ethical rankings within India, reflecting its commitment to various ethical practices. The company has shown strengths in different areas each year, such as sustainability, corporate governance, and community engagement. Infosys's rankings and practices have potentially influenced standards in the Indian IT sector, promoting a culture of ethical responsibility.

Findings:

Ethical Sourcing: IT corporations in India, cognizant of the ethical challenges associated with global supply chains, implemented stringent measures to ensure responsible sourcing of materials. This included a focus on fair labor practices, environmentally sustainable sourcing, and adherence to international labor standards.

Community Engagement: This highlights the significance of community engagement. IT companies in India actively participated in community development initiatives, including education programs, skill development, and healthcare projects. This demonstrated a commitment to stakeholder responsibility beyond economic considerations.

Adaptability: Notably, the IT sector showcased adaptability in integrating evolving ethical standards. As global expectations shifted, these companies demonstrated a capacity to recalibrate their ethical frameworks, aligning with international best practices while addressing local concerns.

4.2 Pharmaceutical ethics - Dr. Reddy's laboratories and access to medicines

Dr. Reddy's Laboratories, a prominent player in the Indian pharmaceutical industry, has been instrumental in balancing global demands for affordable medicines with local responsibilities. In response to the global health challenges posed by the COVID-19 pandemic, Dr. Reddy's Laboratories entered into voluntary licensing agreements with global pharmaceutical companies to manufacture and distribute COVID-19 vaccines. This initiative aimed to provide affordable access to life-saving vaccines on a global scale (Dua, 2022).

The company's commitment to ethical practices was evident in its emphasis on regulatory compliance, ensuring that the vaccines produced met international quality and safety standards. Simultaneously, Dr. Reddy's Laboratories continued to invest in local healthcare initiatives in India, showcasing a nuanced approach that addresses both global health needs and local responsibilities. This case exemplifies how Indian pharmaceutical companies can contribute to global health while upholding ethical standards and fulfilling their local obligations.

Figure 3 presents the materiality matrix of Dr. Reddy's Laboratories that reflects the process of identifying and prioritizing key areas that are of utmost importance to both their internal and external stakeholders. This matrix is an essential tool for guiding the company's Environmental, Social, and Governance (ESG) strategies, board reviews, and risk management processes. Key Elements in Dr. Reddy's Materiality Matrix:

- Ensuring a steady and reliable supply of medicines.
- Setting prices that are fair and make medications accessible to a broader population.
- Maintaining high standards in the quality of medicines produced.
- Ensuring that all products are safe for patient use.
- Upholding high ethical standards and transparency in operations.

Source: Dr. Reddy's Sustainability report 2020-21 (URL: https://www.drreddys.com/cms/cms/sites/default/files/2022-04/sustainability-report-fy-2020-21.pdf)

Figure 3: The Materiality Matrix of Dr. Reddy's Laboratories

Findings:

Affordable Access to Medicines: Indian pharmaceutical companies prioritized ethical considerations in providing affordable access to medicines globally. Initiatives such as voluntary licensing agreements and partnerships with global health organizations aimed to address global health challenges while adhering to ethical standards.

Regulatory Compliance: The findings emphasized the importance of regulatory compliance in the pharmaceutical sector. While engaging in global markets, companies demonstrated a commitment to meeting international regulatory standards, ensuring the quality and safety of their products.

Local Responsiveness: This case revealed that successful pharmaceutical companies in India were attuned to local responsibilities. This included initiatives such as rural healthcare programs, awareness campaigns, and collaborations with local healthcare providers, showcasing a nuanced understanding of the interplay between global demands and local needs.

4.3 Banking and Finance - State Bank of India's Stakeholder Engagement

The State Bank of India (SBI), as a key player in the Indian banking and finance sector, has demonstrated a commitment to managing systemic risks and meeting stakeholder expectations. In response to the global financial crisis of 2008, SBI proactively implemented ethical risk management practices to safeguard against systemic risks. The bank undertook a comprehensive review of its lending and investment portfolios, emphasizing responsible practices to mitigate risks and protect stakeholders (Garg, 2014).

Furthermore, SBI engaged in transparent communication with its stakeholders, including customers, employees, and regulators, during periods of economic uncertainty. The bank initiated financial literacy programs, contributing to the responsible banking practices that align with global standards while addressing the local need for informed financial decision-making. This case illustrates how ethical risk management and stakeholder engagement can be harmonized in the Indian banking sector to navigate the challenges of financial globalization.

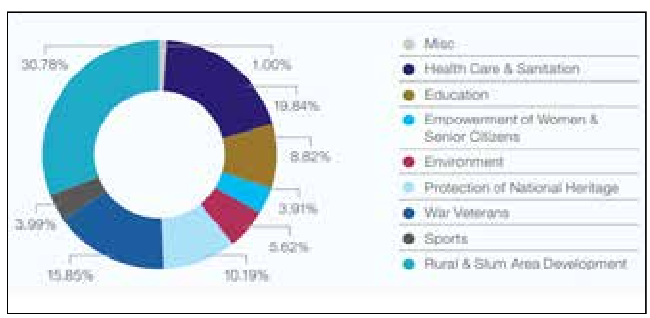
Table 2: CSR spending during year 2022 (Rs. Crores)

Total CSR Budget for FY 2022	204.1
Allocation to SBI foundation	102.56
CSR expenditure	101.54

Source: URL: https://sbi.co.in/documents/17836/29141285/SBI_Annual_Report_2022.pdf

The table 2 provide summary of the Corporate Social Responsibility (CSR) spending by the State Bank of India (SBI) for the financial year (FY) 2022. Out of the total CSR budget, 102.56 crores INR was allocated to the SBI Foundation. The SBI Foundation is likely a dedicated entity or a subsidiary within the SBI group focused on managing and implementing various CSR initiatives. This allocation represents roughly half of the total CSR budget, indicating a significant commitment to structured, foundation-led CSR activities.

This amount signifies the actual spending on CSR activities by SBI in FY 2022. The fact that this number (101.54 crores INR) is slightly less than the allocation to the SBI Foundation (102.56 crores INR) might suggest that a small portion of the allocated funds was either unspent or reserved for ongoing projects. It also indicates that SBI's CSR activities are not solely limited to the SBI Foundation but may include other initiatives directly undertaken by the bank.



Source: URL: https://sbi.co.in/documents/17836/29141285/SBI_Annual_Report_2022.pdf

Figure 4: Sector wise CSR Spending

Findings:

Risk Management: Financial institutions in India prioritized robust risk management practices to mitigate systemic risks. The findings highlighted the integration of ethical considerations into risk assessments, emphasizing the importance of responsible lending and investment practices.

Stakeholder Engagement: Successful banks demonstrated a commitment to stakeholder engagement beyond shareholders. This included transparent communication, responsible lending practices, and initiatives addressing financial literacy and inclusion, aligning with the principles of stakeholder responsibility.

Adherence to Global Standards: The comparative analysis emphasized the importance of adherence to global ethical and regulatory standards. Indian financial institutions that aligned their practices with international best practices were better positioned to build trust in global markets while addressing local expectations.

5. Conclusions

In conclusion, the research demonstrates that the intersection of ethics, financial globalization, and stakeholder responsibility requires a tailored and adaptable approach. The findings underscore the need for corporations to view ethical considerations not as a static compliance requirement but as a dynamic and strategic aspect of corporate decision-making. By drawing on the commonalities and best practices identified through the comparative analysis, corporations can forge a path toward ethical financial practices that align with both global imperatives and local nuances.

Moreover, the research highlights the role of corporate adaptability in responding to the challenges of financial globalization. The ability to navigate ethical complexities in a rapidly changing global landscape is contingent on a proactive commitment to continuous improvement and adaptation. The development of nuanced recommendations for corporate finance practices, rooted in the insights derived from diverse contexts, serves as a guide for corporations aiming to strike a balance between global aspirations and local responsibilities.

Ultimately, this research contributes to the ongoing discourse on corporate finance by providing actionable insights that can inform the development of ethical frameworks tailored to the complexities of financial globalization. As corporations grapple with the ethical imperatives of an interconnected world, the findings of this research offer a roadmap for fostering sustainable, responsible, and adaptive corporate finance practices.

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Work Life Balance Practices: A Key Driver of Corporate Sustainability

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Abstract

In this highly competitive and tech savvy world, no organization can survive without addressing work-life balance issues of its employees. As employees devote maximum part of their lives in building corporates, in return, it becomes the social and moral responsibility of these corporates to come forward with innovative work-life balance practices and policies to tame the work-life stress of their employees. It should be the prime concern of organizations to take care of employees and their families and keep them happy. Since, there has been little academic attempt to provide a holistic picture of work-life balance benefits and programmes (WLBPs) offered by various organisations in India, the current paper has made an attempt to understand the present status of organizational endeavours in India in the form of WLBPs in general and of RCF in particular to address work life issues of employees. It has also been tried to explore the significant work life policies and practices by applying factor analysis. The study was carried out at Rail Coach Factory, Kapurthala (Punjab). The primary data for study was collected through questionnaire with a sample size of 432 respondents. The findings of the study revealed that RCF and various other organisations are conscious about employees' work life balance and providing them a plethora of work life balance promoting facilities. The study had identified six significant work life practices/ policies which the HR managers must focus to improve work life balance of their employees. The paper suggests that organizations in India should incorporate WLB policy as a part of their strategic corporate social responsibility pursuits by ensuring an effective congruence between employee needs and organisational values. It also suggests effective communication system and a supportive culture for its effective implementation to have win-win situation for organisation and employees.

Keywords: Work-life balance, HR managers, work-life balance initiatives

1. Introduction

Employee happiness is a key to organisation's success. Employees are the valuable assets of corporate bodies. They are their strength. To face the new challenges on the fronts of knowledge, technology and changing trends in global economy, it is necessary that these employees are managed effectively. In the modern era, employees are being found juggling themselves between multiple demands of life. At one end, there is an urge to excel in professional life, but on the other end, there are equally important personal life obligations which can't be ignored. The stress caused by this work-life conflict is eroding employee happiness. In this highly competitive and tech savvy world, no organization can survive without addressing work-life balance issues of its employees.

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The study of work-life balance involves the examination of people's ability to manage simultaneously the multi-faceted demands/roles of life. It accommodates the growing understanding that participation in multiple roles can contribute to good mental and physical health so long as the degree of "fit" between work and personal life is satisfactory (Barnett, Garies & Brennan, 1999; Marks & MacDermid, 1996). The imbalance occurs when greater time, psychological involvement or satisfaction occurs in one role compared to the other causing work-life conflict (WLC) and stress.

Work-life balance is emerging as a strategic element in the Human Resource Management (HRM) policies of successful organizations for attracting and retaining talented staff and reaping other benefits of HRM programs promoting work-life balance. Employers are now-a-days greatly interested in making their employees happy by making whole hearted efforts for work life balance initiatives to have satisfied and committed workforce resulting in less absenteeism and turnover, increased productivity and quality work. Work-life balance is becoming an increasingly important consideration in job and career decisions. Recent studies reveal that one of the most important lifestyle issues of today is that of work-life balance, and that it will continue to be for many years to come.

2. Review of Literature

Thomas and Ganster (1995)[1] revealed that work life balance initiatives by HR managers help employees to better manage their work and family roles. These initiatives affect employee attitude and behaviors such as organisational commitment, job satisfaction **(Grover & Crooker, 1995)[2]. Huselid & Becker (2000)[3]** found that HR policies play a strategic role in employee retention through stimulating skilled labour. **Mitchell (2001)[4]** observed that every organization today is interestingly concerned with selecting and retaining competent, committed people who are exclusively known as knowledge workers. Top executive managers espouse more flexible and responsive human resource practices to attract and retain these skilled knowledge workers. **Allen (2001)[5]** determined that a reduction in levels of work-life balance strain through organizational initiatives can result in decreased employee turnover, improved job satisfaction and increased levels of organisational commitment.

Visser, Smets, Oort and Haes (2003)[6] found that among perceived working conditions, the interference of work on home life and not being able to live up to one's professional standards were most related to stress. The study highlighted the importance of organizational rather than personal factors in managing both stress and satisfaction. **M. Heathfield (2005)[7]** found that retaining the desirable employees is beneficial to an organization in gaining competitive advantage that cannot be substituted by other competitors in terms of producing highly motivated and satisfied coworkers who will provide better customer service and enhanced productivity, which subsequently resulting in increased sales, customer satisfaction, smooth management succession and improved organizational learning. **Mullins (2005)[8]** reported that social responsibilities of the firms towards their employees extend beyond the terms and conditions of the contract to include: justice in treatment; democratic functioning of the organisation; training in new skills and technologies; effective personnel and employment relations policies and practices; and provision of social and leisure facilities. **Baral and Bhargava (2011)[9]** in their study found that only few organizations in India have adopted work-life balance strategies as a part of their core business strategy. Majority of them are multinationals and in software or service sector. Other organisations are increasingly becoming conscious about current need of helping employees in managing work and non-work roles effectively and applying managerial interventions such as WLBPs. However, they are still at a nascent stage. **Aggarwal (2012)[10]** emphasized that achieving work life balance should be the joint responsibility of employer and employee. He recommended the arrangement of family engagement programmes and yoga classes by the organisations for better work life balance of their employees. He also suggested that work life policies should be properly communicated and implemented. **Shukla Amit and Singh Shailendra (2014)**[11] made an attempt to study "Employee Involvement and Flexible Role Orientation: A Moderated Mediated Model". They empirically studied the role of participative decision making and job autonomy in developing flexible role orientation in a moderated mediation model. The study exhibited that the participative decision making and job autonomy were positively related to the flexible role development through physical ownership. The role breadth and self-efficacy has been proved more constructive in strengthening the relationship between organisational inputs. **Julka Tapasya and Mathur Urvika (2017)**[12] in their research work entitled "A conceptual study of work-life balance among women employees". explored the challenges faced by women employees in maintaining balance in between their personal-life and professional life. The study was concluded that usage of planning, organizing and setting goals at work and home may be helpful for the women in balancing their professional and personal lives. **Gragnano Andrea, Simbula Silvia and Miglioretti Massimo (2020)**[13] investigated the effect of work-life balance and work-health balance on change in job satisfaction specifically with regard to age, gender, parental status and work ability. The study founded that worker considered both work-life balance and work-health balance a significant factor. The work ability was having a moderate effect of work-health balance on job satisfaction. Moreover, the age, gender and parental status have also revealed a moderate effect of work-family balance on job satisfaction. **Abiodun Adekunle Ogunola, (2022)**[14] made an attempt to study "Quality of Work-Life and Work-Life Balance as Predictors of Employee Job Satisfaction". The result revealed that both work-life and work-life balance abilities influence the level of job satisfaction among employees of banks under study. They suggested that the banking organizations should take forthright steps to expand and improve the working conditions of their organisations.

3. Research Gaps:

It has been observed that a substantial work has been done on work-life balance practices. But there is a need to carry out research in the emerging dimensions of work-life balance. The following research gaps have been observed in the light of literature surveyed:

- There is lack of collaborative studies in the field of work-life balance in general and in the area under study specifically.
- Furthermore, no efforts have been made to study the influence of high or low state of work-life balance.
- An elaborative evaluation and assessment perception of employees regarding the work-life balance dimensions is missing.

Keeping in view the above research gaps, it can be established that there is a need to study various dimensions of work-life balance particularly for the corporate sustainability. The present study is an attempt to take a note of the above-mentioned observations. Therefore, an attempt has been made to study the work-life balance practices as a key driver for the corporate sustainability in the area under study.

4. Rationale of the study

As employees devote maximum part of their lives in building corporates, in return, it becomes the social and moral responsibility of these corporates to come forward with innovative work-life balance practices and policies to tame the work-life stress of their employees. It should be the prime concern of organizations to take care of employees and their families and keep them happy. Further, by helping employees in effective management of work and personal lives, the quality of life will improve and a happy and healthy society will be created. Since, there has been little academic attempt to provide a holistic picture of work-life balance benefits and programmes (WLBPs) offered by various organisations in India, the current paper has made an attempt to understand the present status of organizational endeavours in India in the form of WLBPs in general and of RCF in particular to address work life issues of employees. The paper will be helpful in providing direction to HR managers of RCF as well as other organisations in framing suitable HR policies as per current need to keep employees happy, healthy and motivated.

4.1 Objectives of the study

1. To study organizational responses towards work-life issues in India.
2. To study work life balance initiatives implemented in Rail Coach Factory (RCF), Kapurthala.

5. Research Methodology

The research is based on both primary and secondary data. For primary data, well structured questionnaire, personal interviews and observation method was used. The sample size taken through stratified sampling was 432. Factor analysis had been used to analyse data. All books, journals, papers and websites consulted are duly mentioned.

6. Organizational responses to work-life issues in India

There is an increasing interest among organizational stakeholders (e.g CEOs, HR directors) for introducing work-life balance policies in their organizations which offer a variety of means to reduce stress levels and increase employee happiness while enhancing business benefits for the employer. Companies are providing high standard of welfare facilities and benefit programs as a part of employee compensation packages and they advocate these programmes as “family-friendly policies” or “work-life benefits and programmes”. Some of such work-life initiatives and programmes of various organizations have been enumerated as under: -

Merck Sharp and Dohme offers liberal health and hospitalization benefits, reimbursing employee’s health expenses in excess of insurance coverage. Nutrition consulting, health centers, medical camps, and regular well-being events like the annual Wipro marathon are some of wellness initiatives at **Wipro**. ‘Mitr’ is the most successful Wipro project under which 28 employees, all volunteers, were trained to counsel fellow employees to manage stress. **Procter & Gamble** India, in its attempt to help employees to better manage work-life balance and maximize their productivity, has been offering work from home for its employees, and reduced work schedules. **HCL** believes that only happy employees can keep customers happy. Its Employee First Councils, or EFCs aim to strengthen employees’ bonds with the organization and encourage them to find a healthy balance between their professional and personal lives. The EFCs are basically an effort to encourage employees to pursue hobbies even while they are at work. There are five councils—Grey Cells, Talent, Wellness, Sports and Community Service—which work towards goals that are of common interest to the employees. In order to reduce stress and promote good health, **Price water house Coopers Pvt. Ltd.,** encourages employees to participate in community sport events such as cricket matches, marathons etc. Gymnasium facilities are provided at major office locations. It also offers support for commuting. To empower women employees to manage work-life balance better, it’s program, titled “My Mentor,” aimed at self motivation and taking charge of one’s work and life, has been very well received by participating women employees. The range of WLB programmes offered at **Intel India** includes flexible work schedules, alternate work schedules and compressed workweeks, telecommuting, part-time employment, childcare assistance, and health and wellness benefits. Intel India’s Hospitalization Insurance covers maternity insurance for employees and their spouse from day one.

Infosys Technologies has a wellness initiative called Health Assessment Lifestyle Enrichment (HALE) consisting of a portal for providing information on various stress-related issues and a hotline providing counseling and expert opinions to employees. HR department gets benefitted from the data collected from the portal and the hotline to track absenteeism rates, its causes and to measure the effectiveness of these initiatives in terms of improvement in productivity. Based on this information, HR takes suitable actions to deal with the prevalent wellness issues in the organization. **The TATA Group** scores high on almost all the welfare parameters. For example, since a larger proportion of workforce in manufacturing plants of TATA belongs to the lower strata of society and is illiterate, the company has introduced adult education programmes and education about family planning as a part of welfare programme for them. Crèche facility is provided for female employees. To fulfill social needs of its employees, TATA group of companies has extended the domain of welfare practices to outside the workplace by involving their employees in social responsibilities like community development programs. **Tata Consultancy Services (TCS),** in addition to offering flexi time with mandatory hours of work and a five-day week for its employees conducts sessions on nutrition, stress management and better living conditions. 'Maitree', an initiative for the spouses of employees, has helped in bringing together the families of the employees.

IBM India offers WLBPs to its employees such as flexible workweek schedules, part time employment, working from home, counseling of family etc. They have sabbatical programs, recreational activities and programs helping employees cope up with life changing activities. IBM's work-life balance commitment is depicted in its policy manual which says that the organisation is serious about helping employees achieve career-life balance. Work life balance is strategic HR tool used by the company for talent management. Now and then, the HR in the organization reiterates its commitment to achieving employee work life balance. **Zensar Technologies** refer employees as "associates" which gives them feeling of being valuable part of the company they serve. It arranges "Pizza and Coke" an informal meeting where associates can meet their seniors and discuss anything and everything. It provides child care facilities along with crèche and has a well-known programme called 'Madat Online', a 24hr service. This service is offered to employees to take care of their daily personal activities like dropping cheques, paying children's school fees, cash withdrawal etc. Employees are given information on housing and educational facilities for children. The company regularly arranges stress management programs, fun at work, family days aimed at employee work life balance. **Agilent Technologies** has been very supportive for employee work-life balance. It provides freedom and flexibility in deciding time and place of work to its employees and rewards employee performance than desk time. It is also identified as one of the great places to work by a survey conducted by Times Group and Great Place to Work Institute in 2008. Another inspiring story is of the famous multinational company **'Shell'**. Like many companies Shell gives flexi time and work from home benefits to its employees. Every year the company conducts Global People Survey which gauges the employee's perceptions on the company's status on how far the work life balance is achieved and what are the steps needed. Working overtime and on weekends is discouraged in Shell and one striking factor is that leaves cannot be carry forwarded. The HR executives in the company put focused efforts to frequently update the various work life balance programs.

7. Work Life Balance Initiatives at Rail Coach Factory, Kapurthala

Rail Coach Factory (RCF), Kapurthala is also conscious about employees' need and try to keep them happy through fulfillment of their diverse needs. It has township area of 838 acres, five schools, Shopping Complex, Community Cultural Centre, Officers Club & Rest House, Subordinate Club & Rest House, Workers Club & Rest House, sports facilities including 18-hole Golf Course, Stadium & Swimming pool, post office, two banks, five ATMs and Kendriya Bhandar. The resident of RCF township is enjoying the best civic amenities. To support their families, a fleet of school buses is maintained for plying the children and college going wards to nearby educational institutions in Kapurthala and Jalandhar. Sustained efforts are made at RCF to keep the safety standards very high and also to make these standards a part of the work culture. Regular safety seminars and safety committee meeting are being organized. Grievance redressal camps are also organized from time to time in different shops and offices of RCF. It is interesting to note that no representation was received during a Pension Adalat of retired employees organized in 2008, because of timely compliance of all grievances of the retired employees.

Happiness & overall development of employees and their families has never taken a back seat in RCF. RCF Sports Association organizes many local level tournaments and sports events throughout the year to encourage participation from employees, their wards and even senior citizens staying with them. Inter-departmental and inter-club tournaments are held for games like Football, Cricket, and Tug of war. For children, competitions are organized in Swimming and Lawn Tennis, besides organizing inter school athletic events. Wide participation in all events proves that sports is a 'way of life' in RCF. By providing Volleyball nets at various locations in RCF's township, sports culture has been taken to homes.

Health is also a prime concern in RCF. To take care of health of employees and their families, Lala Lajpat Rai Railway Hospital is being operated by RCF as a 60 bedded hospital with 6 bedded ICU and 4 cabins, serving families of about 7700 working and 342 retired employees. Arrangements are also made with other hospitals to provide best medical care to employees and their families, the cost of which is borne by RCF.

Stress management workshops are also organized from time to time at Officers Club, Subordinate Club and Workers Club of RCF in which number of employees and their family members actively participate. For mental and physical development of employees' children, yoga teaching classes have been started in Jack N Jill school of RCF.

Cultural programmes, hiking & trekking, staff holiday camp, yoga shivir, flower show competition, healthy baby competition, hobby classes for children are also organized for enjoying personal and family life apart from work.

8. Work -Life Balance Policies in RCF Kapurthala: A Factor Analysis

In order to explore the work life balance promoting policies and facilities at RCF, the factor analysis has been performed. The results of the Kaiser-Meyer-Olkin (KMO=.833) measure of sampling adequacy and Bartlett's test of sphericity with highly significant value has clearly indicated the appropriateness of the use of factor analysis.

The factor analysis results are depicted in the following tables. Table 1 identifies the proportion of variable explained through extraction method. In the process, initial eigen values and eigen values after extraction are generated (as shown in table 2) which measures the amount of variation in the total sample accounted for by each factor. Henceforth, six factors have been identified as a result of rotated component matrix (table 3).

Table 1 Communalities

	Initial	Extraction
Grievance Redressal System	1.000	.774
Recognition of Better Performance	1.000	.661
Employee with well matched skill	1.000	.685
Employee with more friends at work	1.000	.634
Job Security	1.000	.642
Better employer employee relationship	1.000	.583
Medical Facilities	1.000	.679
Fitness Facilities	1.000	.661
Safety of employee at work	1.000	.674

Safety of women employees at work	1.000	.532
Organizing spiritual seminars	1.000	.711
Meditation/yoga camps	1.000	.675
Recreational facilities	1.000	.590
Housing facilities	1.000	.654
Educational facilities for children	1.000	.593
Child care facilities	1.000	.652
Inviting Family members in reward functions	1.000	.639
Celebrating festivals with employees and their family members	1.000	.589
Organising social functions for families	1.000	.584
Eco-friendly work environment	1.000	.779
Open communication	1.000	.569
Travel facility	1.000	.604

Extraction Method: Principal Component Analysis

Table 2 Total Variance Explained

	Initial Eigenvalues			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.200	28.183	28.183	6.200	28.183	28.183	3.297	14.987	14.987
2	2.586	11.753	39.936	2.586	11.753	39.936	2.570	11.680	26.667
3	1.633	7.422	47.358	1.633	7.422	47.358	2.514	11.427	38.094
4	1.391	6.322	53.680	1.391	6.322	53.680	2.239	10.178	48.271
5	1.345	6.114	59.794	1.345	6.114	59.794	1.960	8.907	57.178
6	1.007	4.579	64.373	1.007	4.579	64.373	1.583	7.194	64.373
7	.902	4.100	68.473						
8	.783	3.561	72.033						
9	.757	3.442	75.476						
10	.703	3.196	78.672						
11	.584	2.656	81.328						
12	.536	2.436	83.765						
13	.497	2.259	86.023						
14	.461	2.094	88.118						
15	.426	1.939	90.056						
16	.401	1.824	91.880						
17	.376	1.709	93.589						
18	.349	1.588	95.177						
19	.313	1.423	96.600						
20	.273	1.239	97.839						
21	.255	1.160	98.998						
22	.220	1.002	100.000						

Extraction Method: Principal Component Analysis

Source: Data compiled through questionnaire

The results of the factor analysis indicates that first six variables that load heavily with the first factor are better employer-employee relationship, recognition of better performance, employees with well matched skills, employees with more friends at work, grievance redressal system and job security. These variables mainly relate to promote better industrial relations and hence named as industrial relation measures. The variables that load heavily on the second factor seem to be relating to health and safety provisions. These are medical facilities, fitness facilities, safety of employees at work and safety of women employees at work. The third important factor contains variables relating to stress busting programmes. These are organizing spiritual seminars / religious camps for employees, meditation / yoga camps and recreational facilities. The fourth variables that load heavily on the next factor includes housing facilities, educational facilities for children, child care facilities and travel facilities. All these seems to be related to family support facilities. Factor five which can be labeled as social relationships, includes four variables inviting family members of employees in work achievement reward functions, organizing social functions at times suitable for families of employees, celebrating festivals with employees and their families and open communication. The last factor eco-friendly work environment is a unique factor. This shows that all these factors revealed by applying factor analysis contribute significantly for maintaining work life balance and hence consider it as a key driver of corporate sustainability.

Table 3 Rotated Component Matrix

	Components					
	1	**2**	**3**	**4**	**5**	**6**
Better employer-employee relationship	**.800**	.100	.220	-.049	-.012	.270
Recognition of better performance	**.748**	-.007	.092	.017	-.189	.240
Employees with well matched skills	**.736**	.074	.101	.106	.120	-.318
Employees with more friends at work	**.727**	.112	.096	.099	.240	-.123
Grievance redressal system	**.622**	-.003	.010	.253	-.007	.437
Job security	**.515**	.118	.249	.073	.486	-.004
Medical facilities	.065	**.815**	.089	.041	-.006	.034
Fitness facilities	.093	**.769**	.144	.137	.097	.111
Safety of employees at work	.077	**.628**	.315	.190	.253	-.272
Safety of women employees at work	.034	**.590**	.200	.348	.018	-.145
Organizing spiritual seminars	.203	.201	**.762**	.190	.104	.048
Meditation/yoga camps	.153	.174	**.738**	.172	.216	.029
Recreational facilities	.217	.113	**.623**	.045	.174	-.332
Housing facilities	.223	.232	.042	**.710**	.137	-.163
Educational facilities for children	.007	.073	.154	**.681**	.254	.189
Child care facilities	.033	.168	.496	**.591**	-.032	.164
Travel facilities	.088	.184	.467	**.561**	-.129	.113
Inviting family in reward functions	-.042	-.075	.031	.400	**.674**	-.132
Organizing social functions for families	-.039	.176	.371	.239	**.565**	.192
Celebrating festivals with employees	.074	.509	.022	-.092	**.549**	.118
Open communication	.385	.172	.258	-.190	**.511**	.165
Eco-friendly work environment	.167	-.008	-.012	.087	.133	**.852**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 21 iterations.						

Source: Data compiled through questionnaire

9. Conclusions & Suggestions

It is seen that the most important factor which promotes employees' welfare and WLB is the better industrial relations. Employees value interpersonal relations and also feel good when their jobs are secured and their conflicts and problems are sorted out properly. The health and safety of employees is also of prime concern and promotes their physical health. The stress busting activities helps in enjoying life more and have been ranked third important factor followed by family support programmes which take care of employees' family lives and thus facilitate their work life balance. Pollution free and eco-friendly work environment also enhance employees' welfare and is considered the important factor for better work life balance. All these factors are correlated with each other. It is suggested that HR practitioners should promote better industrial relations and social relationships in their organisations. For improving employees' emotional and physical health, they should be provided eco-friendly environment, family support facilities and better health & safety provisions. To reduce stress among employees, various stress busting programmes should be organized like yoga, meditation, recreational clubs etc. These initiatives by the management will facilitate work life balance of employees.

Organisations in India have certainly realized the need for work-life balance of employees as a dimension of corporate social responsibility and have started offering policies and programs to keep them happy. RCF is also not an exception to it. Although, these policies and programs differ across organizations, but it surely has provided new directions for organisations in similar sectors to adopt such progressive HR initiatives to recognize and accommodate the diverse needs of the employees. Organisations are increasingly becoming conscious about changing trends and applying managerial interventions such as WLBPs. However, it is seen that despite the recognition of the fact that WLBPs would create a healthier, happier, productive and motivated workforce, reduce work-family conflict and help position the organisation as an employer of choice, many organisations in India have not stated formal WLBPs. Even RCF has not provided flex-time or compressed weeks option as alternate work arrangements. There is still a long way to see WLBPs as strategic initiatives in Indian organisations. More legislative stimulus may be needed to give the work-life balance a stronger foothold. There is also a need of conducive work culture, updating of WLBPs, managerial training and stronger communication network to make work life balance measures a great success.

10. Implications of Study and Scope for Research

The study will create awareness among policy makers to focus on specific work life balance policies to promote employees' work life balance and the need for updating various HR policies to keep pace with the changing scenario. The researchers will also be benefitted from the study. The present study has been restricted to RCF to explore significant work life balance policies. A comparative study of different organisations can be carried out by undertaking the specific factors (HR policies/practices) as identified by factor analysis and measuring the satisfaction level of employees with these HR policies.

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Reviewing Technology Habits to Validate a Measurement Scale for Habitual Use of Voice Assistants

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Abstract

Purpose- Habitual behaviour is being studied from over a century in inter-disciplinary context. Advent of digital economy has disrupted the deep rooted habits and formed newer ones in a short span of time. Information systems research attempts to study various dispositions and behavioural patterns of technology users. Theories of social sciences have stemmed into a new branch of study 'Digital Psychology.' Digital marketers are not just interested in observing the patterns of users but also in investigating why users are showing such patterns.

Methodology- A two-step approach was followed to understand the changing paradigm of habitual use in context of technology. Firstly, a narrative review analysis of habitual use of technology has been conducted to explore the present literature and the underlying concepts of habit formation. Using the systematic review of literature, a content analysis of major theories is done in this study to evaluate the existing information system research. Various measurement scales were compared for various dimensions. In the second study, a measurement scale was finalised comprising of multiple root constructs and it was tested for reliability using Cronbach's Alpha. The six-item scale was validated by examining its relationship with frequency as single item measurement using Spearman's correlation.

Findings : A measurement scale was tested and considered appropriate for future research in technology. The six-item scale was validated to study habitual use of voice assistants.

Contribution- Various IS theories have been explored along with theories of habitual use to explore the decision making process of technology users. The study suggests the scope of future research in the direction of digital psychology. A measurement scale was tested and validated for further use in the context of technology.

Keywords: *habits, habitual use, technology, digital habits, review, test-retest reliability, scale validation*

Introduction

Our actions are guided by the ideas and perceptions we have about any object or subject. These ideas could be a product of habits. We often tend to resist new ideas which we perceive as threat to our habits and perceptions. The oldest mentions of habit is found in 1890s, in which Ledger (1893) emphasized on the importance of habits in the belief system of humans. The ideas that people have are because of the closely held habits instead of logic. Habits and perceptions may also result in resistance to change and new ideas. A habit is defined as "fixed way of thinking, willing, or feeling acquired through previous repetition of a mental experience" from a psychological viewpoint (Andrews, 1903, p. 121). Yu (1991) proposed that humans "have habitual ways of thinking, acting, judging, responding, and dealing with problems, which form our habitual domain (HD) when taken together.." However, Verplanken & Wood

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(2006) argued that many actions performed regularly may not necessarily be habitual. Habit consists of certain features and therefore it is important to differentiate among multiple overlapping concepts. De Houwar (2019) suggested that definition of habits and habitual behaviour should be selected carefully as each one takes a different perspective which reflects in the measurement and also posits challenges in the empirical study. "Habitization is a process, with no clear demarcation point when strong habits have formed." (Wood & Runger, 2016, p. 295).

Gardner (2015) defined Habitual behaviour as "any action, or sequence of actions, that is controlled by habit." (p. 282). Habits are often linked to learning and are acquired in a systematic order in array of psycho-physical hierarchy. Lower order habits are seen as elements of higher order habits. Bryan & Harter (1899) researched the acquisition of habits in terms of speed, accuracy and automaticity in operating telegraph. This has been one of the oldest studies in habituation of technology. Any habits which have been acquired fully have physical and psychological concurrence. Bayer & LaRose (2018) coined the term "tech habits" as they are distinct in terms of contexts. Technologies are working beyond the spatial as well as time context. Most of the environmental settings are stable under the purview of tech habits. External cues may arise from the technology itself and trigger the behaviour providing a wide variety of potential action behaviours.

Purpose of the study: An attempt has been made to look into the studies on human behaviour in digital environment from beginning till present. The study finds the research gaps in the prior research on habits in context of technology. Operationalization of habitual use was based on the literature review to find the adequate measurement scale to study habits in the context of technology. Main objective of the study is to validate the scale of habitual use.

Design/Approach: A narrative review analysis of habitual use of technology has been conducted to explore the present literature and the underlying concepts of habit formation. Various IS theories will be explored along with theories of habitual use to explore the decision making process of technology users. Content analysis of major theories is done in this study to evaluate the existing information system research. Multiple items from the appropriate scales were adapted and validated for the reliability of habit measurement.

Literature Review

Up to 1930s habits were viewed as biological mechanism caused due to instincts. This evolutionary perspective emerged as Darwinism in philosophy. By 1980s the economist notions of choices were dominating the literature on habit. However, psychological stances were ignored for a long time and were studied briefly changing the ontology of studies in habits. Recently, economist views have started gaining the popularity again in the studies. The studies of how individuals make choices and exhibit behaviours in social structures are rising again with habits as underlying constructs (Hodgson, 2010). Although recent studies have started focusing on online customer experience lately, most of the research studies in this area are limited to technology adoption and usage only. However, the subject offers much more in terms of multiple dimensions like ethics, addiction, habits and engagement in the context of the online environments leading to a vast arena of digital psychology for academic research.

Many researchers coincide the idea of habit and addiction with each other. Behavioural addiction has been defined as "A repeated behaviour leading to significant harm or distress. The behaviour is not reduced by the person and persists over a significant period of time. The harm or distress is of a functionally impairing nature" (Kardefelt-Winther, et al., 2017, p. 1710). Addiction studies have been prominently studied to examine the information systems adoption (Roberts, Thatcher, & Klein, 2006) and overuse of certain internet applications for example problematic use of mobile phones (Graben, Doering, Jeromin, & Barke, 2020). Panova & Carbonell (2018) concluded that smartphone addiction simply do not exist because of multiple reasons. Addiction is not an appropriate terminology to describe technology-related problematic behaviours. Firstly, the studies on addiction to internet, smart-phone or online gaming are behaviour related studies done on healthy individuals like students or technology users. However, addiction is a clinical terminology and the studies on addictions should be done in clinical settings only after addiction is diagnosed with correct measurement tools. The screening tools used to diagnose addiction to technologies are self-reported and designed arbitrarily. Frequency of use of technology is used as tool to measure addiction but the concept of frequency overlaps with habitual use and hence habit is a more appropriate term in this scenario.

Aagaard (2020) argued that technology addiction is not an appropriate term instead we should call it habits even though it directs towards problematic use it should be called bad habits. They indicated that addiction is a medical term and therefore this phenomenon of behavioural change due to technology usage implies an unconscious behaviour and merely a lack of self-control. They criticized neuro-behaviourism as it accounts for only pathological aspect of the technology. This approach sees the extremism in technology use as psychologically problematic use of technology and focuses on exploring the ways to combat technology addiction. However, the approach is limited till the bad effects of technology and fails to see the technology as a functional object ignoring the consumerism aspect it carries totally. It focuses on the dysfunctional part of the digital psychology without taking considering other aspects with respect to marketing orientation. It deliberately points towards the harmful affects of technology which may not be generalised over majority of technology users.

According to Kardefelt-Winther, et al. (2017) common behaviours shall not be pathologized to identify it as an addiction. They suggested exclusions to update the operational definition of behavioural addiction and thus behaviours such as excessive mobile phone use or frequent use of social networking sites cannot be diagnosed as addiction merely on the basis of frequency of usage or repetition. It shall be identified as problematic use or bad habit and thus the conceptualization of habitual behaviour must be distinguished from technology addiction as latter is significantly persistent and harmful in nature.

Repeated behaviour is seen as important characteristic when habit is defined as "a propensity to behave in a particular way in a particular class of situations" (Hodgson, 2010, p. 3). Many studies have measured the habitual behaviour through repeated actions and automaticity as in UTAUT2 (Venkatesh, Thong, & Xu, 2012). Gardner (2015) contended over the conceptual definition of habit as behaviour as habit cannot be termed as the cause of itself. Habit as features of frequent or regular behaviour is incorrect due to lack of explanatory process. Frequency should not be the only criteria to measure habit strength as the habits "can be automatic yet infrequent". However, this previous study was limited to ascertaining the role of habit in health behaviours and other domains of behaviour were ignored.

Habit formation begins with goals which motivate the repetition of action under context specific environment. Cues trigger the habitual response through memory representation in the context. Habitual action is the outcome in order to pursue the goals which are inhibited or activated by stress [inhibition factor] causing the reduced/increased motivation or perceived ability to perform (Wood & Runger, 2016). Hodgson (2010) argued that habit is a causal mechanism which must be considered as foundation for beliefs and preferences. The actions are guided by choices and beliefs of individuals based on habits and instincts. However, for understanding of impact of social structures on individuals, habit process plays a crucial role.

Verplanken & Wood (2006) suggested that there are different change strategies depending upon strength of habits. Informational downstream interventions are applied when habits are weak, a behavioural change is possible with introducing new information. However, if the habits are strong downstream intervention must be accompanied with the change in context in order to bring a behavioural change. Upstream interventions are applied at a larger scale in case of both weak and strong habits. These changes are brought indirectly or directly in the environment. Technology development is categorised as upstream intervention to change behaviour at a macro-level. Habits are significant for designing behavioural change interventions programs. Habits are predominated by the environmental cues and therefore change interventions could be introduced in the cues itself by creating newer habits. By merely changing environmental settings may change the habitual behaviour but after the former setting resides, older habits.

Causal elements namely stimulus-driven behaviour should not be included in the definition of habit as it is difficult to verify empirically that goals don't drive behaviour. Removing the assumptions of S-R associations will make it possible to study factors mediating the habitual behaviour. Criticises the stimulus-response assumptions as it contradicts the goal-directed behaviours. The assumption that "stimulus is causally related to the behaviour" implies "that the behaviour is not a function of its anticipated consequences." (De Houwar, 2019, p. 3). Automaticity is measured by frequency of past behaviour in stable context which excludes S-R causal relationship i.e. recency effect however, poses the challenge of not being able to study the goal-directed behaviours still need to be studied. A single-dimensional habit that is solely automatic may have an insignificant association with intention to continue due to insufficient time exposure or experience. A single-dimensional habit that is solely automatic may have an insignificant association with intention to continue due to insufficient time exposure or experience (Ambalov, 2021).

Habits have the power to override the conscious intentions by the unconscious automaticity. As quoted "habit diminishes the conscious attention with which our acts are performed" (James, 1890). Experiential factors and individual traits reduce the self-regulation. In turn, deficient self-regulation drives the habitual use of technology. The underlying goals and rewards can be used as interventions to reduce or promote the habitual actions. Ayaburi, Wairimu, & Andoh-Baidoo (2019) conceptualised habitual use with two dimensions one is conscious decision to use the technology regularly i.e. routine use and the other is unconscious and uncontrolled use in terms of automaticity. Though automaticity is considered a suitable variable of habits which is easier to measure, it is still inadequate as it renders the mental mechanisms of habitual behaviour impossible to measure (De Houwar, 2019).

Single item scales like frequency, repeated behaviour, and even single dimension like automaticity have been criticised as habit measurement scale for being inadequate and unidimensional, thus a multi-dimensional scale needs to be constructed and tested for validity. To test the relationship between frequency and the multi-item scale the following hypotheses is conceptualised:

H0: There is no correlation between habitual use of voice assistants and their reported use in frequency per week.

Methodology

Study 1: This study was a narrative review analysis using the inclusion/exclusion criteria method of systematic review following the checklist of the "preferred reporting items for systematic reviews and meta-analyses" (PRISMA) by the Centre for Reviews and Dissemination (Page, et al., 2021). Following string theory was used to search for database from the year 1995 to 2021 "((habit*) AND (technology OR internet OR online OR device* OR digital*))". The last search was conducted on 18th May 2021. Inclusion criteria is that all journal articles, conference papers, book chapters and books were included. All writings in language other than English has been excluded. Excluding the areas other than business, economics, psychology and management, 1115 research studies were extracted. Only Scopus indexed journals are used for the purpose of this study. A keyword analysis was performed to find relationships among emerging themes.

Study 2: For this study, a six-item scale (refer to table 5) was adapted from (Ayaburi, Wairimu, & Andoh-Baidoo, 2019) and (Verplanken & Orbell, 2003) who argued that single item measures of habit strength and behavioural frequency are unreliable. Therefore, first three items (hab1, hab2 and hab3) indicated frequent use and routine (repeated) use while other three items (hab4, hab5 and hab6) indicated automatic use of voice assistants. The participants were asked to fill the questionnaire with regards to their usage of voice assistants. After deleting the unengaged responses, a total of 558 responses were found usable. A test-retest reliability test was performed using SPSS and Spearman's rank correlation was found to test the hypotheses. Frequency was measured categorically, category 1 representing low usage of voice assistants i.e. 1-10 times per week and 2 represented high frequency i.e. more than 10 times per week.

Analysis

Study 1: Based on the bibliographic data, Scopus database was analysed for all keyword co-occurrences using the fractional counting method. Minimum occurrences for each keyword was set to fifteen which generated fifty-three words. These words were screened manually for the relevance and two keywords were deleted before the textual analysis. Weights were assigned on the basis of total link strength to develop the final neural network of text based map.

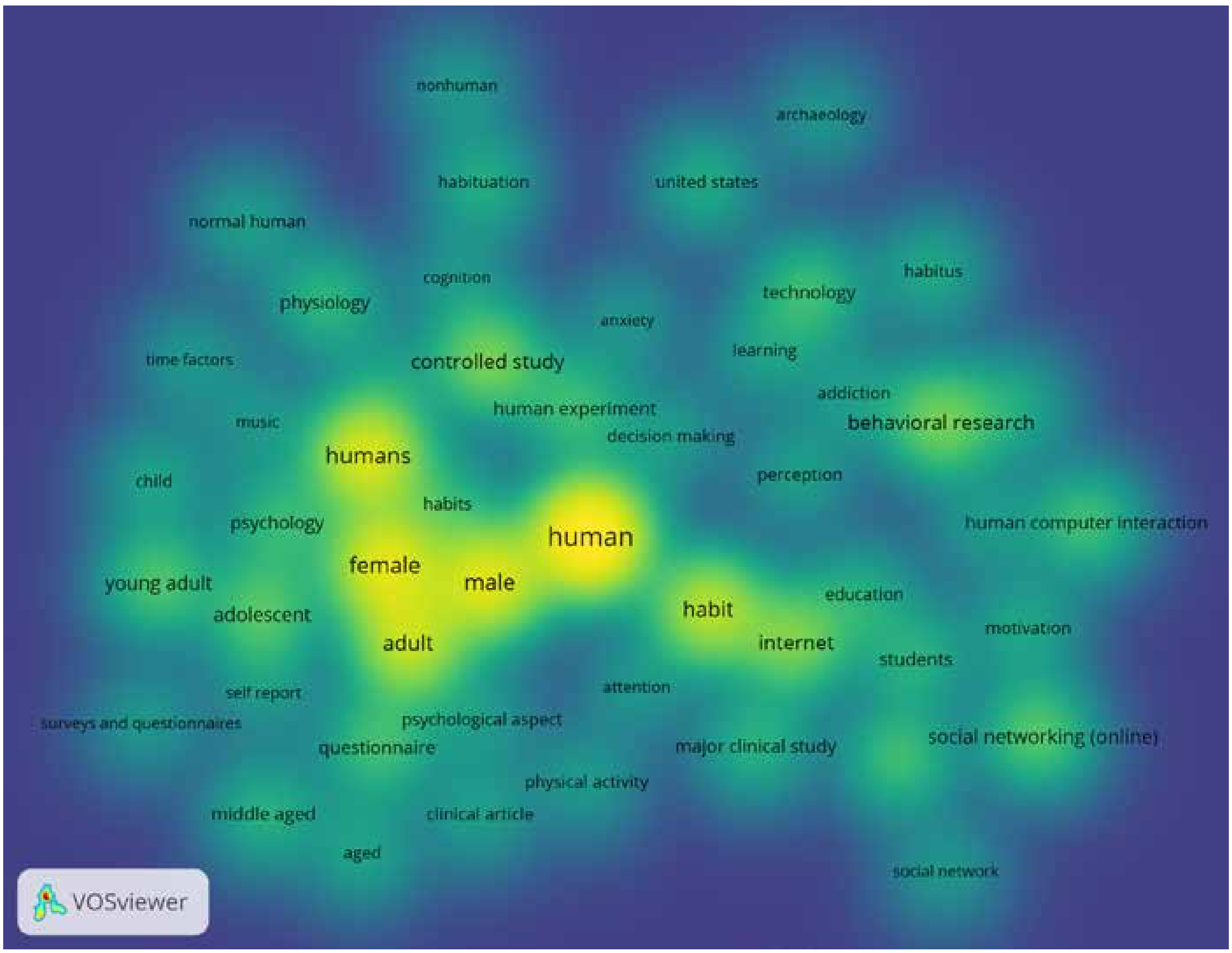
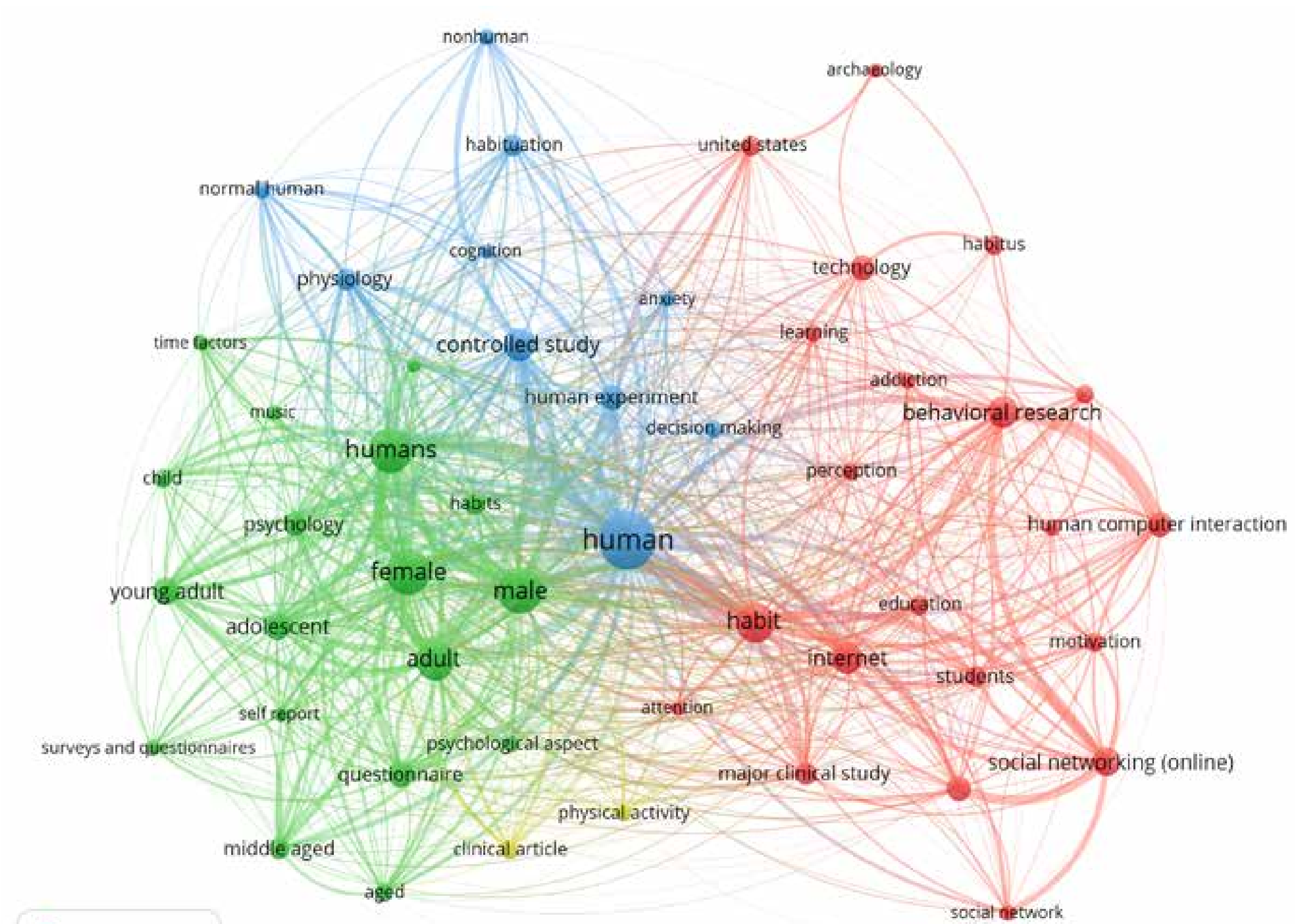


Figure 1: Density Visualisation Map

Density visualisation map in figure 1 indicates that out of the extracted studies, major studies were conducted on human research and most of them focused on gender. Behavioural research in internet and social networking habits were prominently done via surveys to examine human computer interaction. Individual factors were studied in various studies but in very insignificant number.



Analysis is based on association strength. Fifty-one items were divided into four clusters. Cluster 1 (in red) with 21 items describes the various dimensions studied in habit research for example, gender in behavioural researches have been done to study motivation, perception, social media or networking, internet and technology. Also, most of the studies here are based out of united states region therefore indicating the lack of habit research in India. Cluster 2 (green) has 18 items indicating habit researches conducted on demographic sections divided on the basis of age and sex through surveys. Also, these studies have inculcated psychological aspects. Cluster 3 (in blue) has ten items conducted via human experiments in controlled environment to study cognition and anxiety. Cluster 4 (in yellow) has only 2 items indicating clinical studies which are outside the purview of this study. However, neuroscience marketing is an emerging field of academic research in management.

Study 2: Reliability statistics indicate a high reliability for the six-item scale with Cronbach's Alpha=0.842 (table 1), with means=0.2945, inter-item correlations=0.472 (refer to table 3) and item total statistics (refer to table 4) show the scale if each item is deleted. All items seem to have significance for the overall scale.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.842	.843	6

Table 1: Cronbach's Alpha

A Spearman's rank-order correlation was run to examine the relationship between users' habitual use of voice assistants and their reported frequency per week. There was a strong, positive correlation between habitual use and frequency (table 2), which was statistically significant ($r_s = 0.325$, $p = .001$).

Correlations			**habit**	**frequency**
Spearman's rho	habit	Correlation Coefficient	1.000	.325**
		Sig. (2-tailed)	.	.000
		N	558	558
	frequency	Correlation Coefficient	.325**	1.000
		Sig. (2-tailed)	.000	.
		N	558	558
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 2: Spearman's Correlation

Thus, null hypotheses is rejected and it is confirmed that there is a significant positive relationship between habitual use and frequency per week. Thus, it is verified that six-item scale measures the habitual use of technology correctly. However, this study does not recommend following a single scale of frequency to measure habit, rather it is highly recommended to follow a multi-dimensional scale of habitual use.

Discussion

Multiple aspects of habits have been studied in different studies however self-reported measures of habit are still a point of conflict in empirical studies. There are many measurement related limitations with the established scales. SRHI studied in communication and IS research is inadequate as it does not include self-realisation parallel. UTAUT2 measured habit with scale suffering from similar inadequacies though it focuses on automaticity and repeated behaviour. However, operational definition of habit is limited to automaticity and past behaviour in the UTAUT2 model. Context element has not been studied from the point of view of environmental setting and therefore, a clear understanding of the triggering events have not been taken into account. Lack of inclusive measurement of habit fails to generate the knowledge on how the tech habit mechanism processes in a virtual environment. RFMMH index however concentrates on goal dependent behaviour. Even though it was suitable for media preferences, RFMMH was found to be a weak scale for context stability (Naab & Schnauber, 2016). The findings coincide with Verplanken & Orbell (2003, p. 1324) who suggested to "consider habit as psychological construct" and not merely restrict it to the behavioural frequency.

There has been an overwhelming research in tech addiction however the measurements suffer from the drawbacks of conceptualisation of "habits" as the operationalisation is from the pathological approach namely problematic use or frequency for instance overuse (Bayer & LaRose, 2018). Problematic use of technology should not be passed off loosely as addiction but should be studied in context of bad habits if there are any harmful effects the user is facing due to over indulgence in a particular behaviour related to technology use. Every technology may have a few advantages as well which are completely ignored when the term addiction is used to connote habitual behaviour. For example, smartphones have benefits like convenience, portability etc, online gaming is used for recreational and entertainment purposes and internet provides information and connection to global network. Misuse or over use of technologies may prove to be dysfunctional but it shall not be confused with the clinical term like addictions which implies a neuropsychological context and demands similar level of interventions by psychological experts (Panova & Carbonell, 2018).

Habit is expressed as a mental process being a product of repetition however it is not an unconscious effort but are experienced under the state of consciousness. Thus habitual behaviours shall be studied as conscious process which an individual experiences both mentally and physically (Andrews, 1903). Another shortcoming of research in tech habits is lack of model or theory generalised to all technologies explaining key habit mechanisms. Instead, the studies focus on researching key attributes specific to underlying technology or device or medium being studied. Therefore, a generalised theory or model should be developed to examine tech habits.

Self-reported measurement of habits are widely used and feasible in terms of academic research. However, other methods of research are highly recommended to be applied in order to explore the realistic picture of context, cues and other mechanisms in tech habits. Rieder, Lehrer, & Jung (2019) advocated the use of narratives for identifying elements and understand the participants' viewpoints towards habitual use of wearable technology. They highly suggest the use of qualitative method like narratives to study the behavioural perception of the individuals as they are free of prejudices and biases when the individual respondents are given freedom to choose the discourse and direction in the interviews. Most of the studies have been conducted from positivist approach. Thus, scientific research methods have been followed to study the phenomenon through quantitative data. Scientific inquiry, although is one of the most viable approaches suffers from the shortcomings of positivism. Although the approach has been contributing in identifying various causal relationships, it fails to take into account the complexities of social phenomenon.

Habitual behaviour is a physical, psychological and affective process which changes the course of formation, creation, continuation and disruption in a virtual environment. The process also consists of plethora of individual experiences. Taking an interpretivist approach to understand the user experiences may facilitate in comprehending the meanings individuals ascribe to "tech habits" and their relationships with the virtual settings. It was discovered that habit, both directly and through the sensitization process, favourably influences dependency on social media use. In addition, it was observed that perceived sensitization rose as habit strength did. Additionally, perceived dependency rose as sensitization did (Soror, Steelman, & Turel, 2022).

Implications and Recommendations

The study's findings are consistent with earlier studies, showing a relationship between self-reported frequency of use and habit (Venkatesh, Davis, & Zhu, 2023). Management must therefore concentrate on researching habit as a powerful behavioural predictor. While it is necessary to improve internet technological assistance in order to provide more favourable conditions for online behaviours, programmes that emphasise the development of habits should also be given priority, thus suggesting continually monitoring the usage habits and patterns (Paiman & Fauzi, 2023). It has been observed that consumers' acceptance of roughly similar technologies is influenced by their habit of using them, hence it is crucial for management to determine how familiar their users are with similar technologies so that future product development can be based on that knowledge (Phibbs & Rahman, 2022). In the history of habit research, ontological paradigm was followed initially. Lately, epistemological paradigm was followed with positivist approach. However, a methodological paradigm might change the discourse of tech habits and mixed method research study will unlock the doors to generalised theories.

Conclusion

The six-item scale can be used extensively for measuring the habitual use of different technologies. It is not limited to any specific media and hence can be generalised over multiple technology behaviours. This study evaluates the various paradigms and suggests that habit research will evolve rapidly in the technology marketing. This study is limited to resources available on Scopus only and therefore it can be expanded to other databases as well. Cluster one has the most important implications as it recognises the various constructs which must be studied further to develop model in human computer interaction and decision making in technology marketing. Perceptions, motivation, anxiety, attention and learning. This analysis also reveals major theoretical gaps in habit research in technology. There are theoretical implications of the study making contribution in the field of neuro-science and digital psychology. tech habits will contribute in future studies on – intense experiences, technical affordances, flow, immersive engagement (Verplanken B. , 2018, p. 124). Many other variables can be explored in technology habits which are revealed through UTAUT, IS habit formation theory and Technology Threat Avoidance Theory (TTAT).

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Annexures

Summary Item Statistics					
	Mean	Minimum	Maximum	Variance	N of Items
Item Means	2.945	2.464	3.247	.072	6
Inter-Item Correlations	.472	.216	.630	.013	6

Table 3: Item Means, Correlations

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
hab1	14.42	21.688	.524	.382	.833
hab2	14.54	20.149	.652	.511	.810
hab3	14.72	19.278	.702	.519	.799
hab4	14.69	19.462	.697	.509	.800
hab5	14.78	19.881	.648	.471	.810
hab6	15.20	20.490	.509	.322	.840

Table 4: Item-Total Statistics

Construct	Root Constructs	Code	Scales	Source
Habitual Use	Frequent Use	Hab 1	I frequently use the Voice Assistant (s).	Ayaburi, Wairimu, & Andoh-Baidoo (2019)
	Routine Use	Hab 2	I regularly connect to the Voice Assistant (s)	
		Hab 3	Using Voice Assistant (s) belongs to my daily routine	Verplanken & Orbell (2003)
	Automatic Use	Hab 4	I use Voice Assistant (s) without having to consciously remember	
		Hab 5	I use Voice Assistant (s) automatically.	
		Hab 6	That makes me feel weired if I do not use Voice Assistant (S)	

Table 5: Six-Item Scale for Habitual Use

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