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Correspondence : All the correspondence regarding publications should be addressed to Sr.Prof.D.Chennappa, Department of Commerce, Osmania University, Hyderabad, Telangana - 500 007. E-mail : ica.indianjournalofcommerce@gmail.com

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Capital Market Movements and Industrial Growth in India – A Study on Linkages

Arun Lawrence, Gabriel Simon Thattil and Tom Antony

Abstract : *This study investigates the relationship between industrial growth and movement in the capital market in India from 2016 to 2024. Utilizing secondary data, including the Index of Industrial Production (IIP) and various stock market indices (Nifty 50, Nifty 500, and BSE 500), the research employs trend analysis and Pearson correlation coefficients to discern patterns and gauge the strength of associations. The findings reveal substantial growth in both industrial production (37.60%) and stock market indices (Nifty 50 by 184.43%, BSE 500 by 207.93%, and Nifty 500 by 207.43%). Strong positive correlations are identified between the IIP and the stock indices, particularly with the electricity sector, highlighting the significant influence of industrial productivity on market dynamics. The study also examines the impact of key economic events, such as the introduction of the long-term capital gains tax, the re-election of the NDA government, the COVID-19 pandemic, and the Russian invasion of Ukraine. Despite these challenges, the resilience of the markets is evident as they reached their highest points by March 2024. The analysis underscores the critical role of policy decisions, economic reforms, and global events in shaping the interplay between industrial growth and capital market investments, offering valuable insights for policymakers, investors, and stakeholders.*

I. Introduction

The relationship between industrial growth and movement in the capital market in India has been a focal point of research, demonstrating significant interplay

Dr.Arun Lawrence, Assistant Professor, PG and Research Department of Commerce, Mar Ivanios College (Autonomous), Trivandrum. Email: arun.al2451@gmail.com

Prof.Gabriel Simon Thattil, Dean, Faculty of Commerce, University of Kerala, Professor and Head (Rtd), Department of Commerce, University of Kerala.

Dr.Tom Antony, Assistant Professor, PG and Research Department of Commerce, SB College, Changanacherry.

over recent decades. Historical trends show that the Indian capital market, post-economic liberalization, evolved with the establishment of regulatory bodies and electronic trading platforms, enhancing market efficiency (Shah & Thomas, 2003). Concurrently, industrial production, particularly from 2016 to 2024, benefitted from initiatives like Make in India (Kumar & Ahmed, 2015). Theoretical frameworks, such as those by Levine (1997), underscore that financial development boosts capital accumulation and innovation, vital for industrial growth. Empirical studies, like those by Reddy (2012), reveal a positive correlation between stock market indices and industrial production, while causality analyses by Mukherjee and Naka (1995) suggest that stock prices can predict industrial output. Factors such as economic reforms, including GST and IBC, significantly impact both sectors (Bhattacharya & Patel, 2017). Additionally, FDI, attracted by robust capital markets, contributes to industrial growth by providing essential capital and technology (Agrawal & Khan, 2011). This body of literature underscores the intricate linkages between capital markets and industrial growth in India, influenced by policy, investment, and financial development.

The Indian economy has undergone significant transformations in its industrial and capital market sectors over the past few years. The Index of Industrial Production (IIP) has surged from 115.7 in April 2016 to 159.2 in March 2024, marking a substantial growth of 37.60%. In parallel, the Nifty 50 index rose by 184.43%, climbing from 7,849.80 points in April 2016 to 22,326.90 points in March 2024. The BSE 500 index experienced an impressive increase of 207.93%, rising from 10,406.12 points to 32,043.20 points over the same period. Similarly, the Nifty 500 index grew by 207.43%, advancing from 6,588.55 points to 20,255.15 points. This simultaneous growth in both industrial production and stock market indices highlights a potential correlation between stock market investments and industrial growth in India, warranting further examination into their interrelationship.

II. Objectives

This study aims to achieve the following objectives:

1. Ascertain the association between industrial growth and movement in the capital market.

2. Identify factors contributing to the association between industrial growth and movement in the capital market.

III. Data and Methodology

Secondary data encompassing the period from April 2016 to March 2024 is utilized for this study. Key data sources include the Index of Industrial Production (IIP) and its constituent sectors (mining, manufacturing and electricity), Nifty 50, Nifty 500 and BSE 500 indices. Trend analysis is employed to discern patterns, while Pearson correlation coefficients are computed to gauge the strength and direction of the relationship between industrial growth and movement in the capital market.

IV. Analysis and Discussion

a) Association between Industrial Growth and Movement in the Capital Market

The correlation analyses of the Nifty 50, BSE 500, and Nifty 500 indices with Index of Industrial Production (IIP) and its constituent sectors provide valuable insights into the Indian market's dynamics.

The Nifty 50 index exhibits a strong positive correlation with several economic sectors, indicating its close ties to industrial activities. Its correlation with the Index of Industrial Production (IIP) is 0.66177, signifying a substantial link between industrial productivity and market performance. The mining and manufacturing sectors show moderately strong correlations of 0.57974 and 0.57683, respectively, highlighting their significant, though slightly lesser, impact on the Nifty 50. Notably, the electricity sector stands out with the highest correlation of 0.81873, underscoring its critical role in driving market movements. These correlations collectively suggest that improvements in industrial production, especially in electricity, are likely to be reflected in the Nifty 50's performance.

The BSE 500 index also demonstrates significant correlations with various economic sectors, revealing important interdependencies within the Indian market. The BSE 500 shows a strong positive correlation with the IIP, at 0.66599, indicating that increases in industrial productivity are closely mirrored in its performance. The mining sector exhibits a moderate positive correlation of 0.58576, suggesting that while mining activities significantly influence the index, other sectors also contribute to its movements. The manufacturing sector's correlation with the BSE 500 is 0.58151, reflecting a similar moderate positive impact. The electricity sector displays a very strong correlation of 0.81185, highlighting its critical role in the index's performance. These correlations collectively underscore that the BSE 500 is highly responsive to changes in industrial

production, particularly in the electricity sector, while mining and manufacturing also play substantial, though comparatively lesser, roles in driving its fluctuations.

The Nifty 500 index provides a comprehensive understanding of market dynamics through its correlation with various economic sectors. The Nifty 500 demonstrates a strong positive correlation with the IIP, with a coefficient of 0.66704, indicating that improvements in industrial productivity are closely associated with its performance. The mining sector shows a moderately strong correlation of 0.58724, suggesting that while mining activities significantly impact the index, other factors also play a role. The manufacturing sector's correlation with the Nifty 500 is 0.58266, reflecting a similar moderate positive influence. The electricity sector stands out with a very strong correlation of 0.81091, highlighting its critical importance in driving the Nifty 500's movements. These correlations collectively indicate that the Nifty 500 is highly responsive to changes in industrial production, particularly in the electricity sector, with mining and manufacturing also contributing significantly to its performance.

In summary, all three indices—Nifty 50, BSE 500, and Nifty 500—show strong positive correlations with the IIP and particularly high correlations with the electricity sector, underscoring the significant impact of industrial productivity and energy production on market performance. Mining and manufacturing also play crucial roles, though their impact is moderately less pronounced. For more details see Table-1.

Table-1 : Correlation between Stock Market Indices and IIP

	Nifty	BSE 500	Nifty 500
IIP	0.66177	0.66599	0.66704
Mining	0.57974	0.58576	0.58724
Manufacturing	0.57683	0.58151	0.58266
Electricity	0.81873	0.81185	0.81091

Source : Researchers computation.

The above table represents the Pearsons correlation coefficient between Stock market indices (BSE 500 and Nifty) and Index of Industrial Production (in general and its constituent sectors)

b) Trend and Pattern of Indices

The three indices are moving on the same line. It is noteworthy to note that the BSE 500 was leading through the period. From April 2016 to January 2018, the BSE 500 index exhibited an upward trend, rising from an index value of 10,406.12 to 15,347.19, with some minor corrections along the way. However, following the Finance Minister's proposal to introduce a 10% long-term capital gains tax on equity shares in the budget, the index experienced a decline, reaching 14,125.53 in March 2018. Similarly, the Nifty 50 index dropped to 10,113.70 in March 2018 from 11,027.70 in January 2018. The NSE 500 index mirrored this trend, decreasing to 8,912.10 in March 2018 from 9,697.90 in January 2018.Post this correction, the indices resumed an upward trajectory until August 2018, after which they experienced a two-month decline. This downward movement can be attributed to the depreciating rupee, rising crude oil prices, and higher US yields.

From November 2018 onwards, the indices showed an upward movement till May 2019, with some minor corrections. This period coincided with the Union elections held in April and May 2019, resulting in the re-election of the NDA-led government for a second consecutive term. The indices demonstrated a noticeable upward movement in May 2019. However, in July 2019, the BSE 500 index dropped sharply to 14,324.12 from 15,291.70 in June 2019. Similarly, the Nifty 50 index declined to 11,118.00 in July 2019 from 11,788.85 in June 2019, and the NSE 500 followed the same pattern, falling to 9,044.95 in July 2019 from 9,657.95 in June 2019. This downturn occurred after Finance Minister Nirmala Sitharaman dashed hopes for any amendments in the Finance Bill to protect foreign portfolio investors (FPIs) from the impact of the 'super-rich' tax proposed in the Union Budget 2019.

From September 2019 onwards, the indices exhibited an upward trend until December 2019. However, starting in early 2020, the indices began to decline sharply due to the onset of the COVID-19 pandemic. By March 2020, the BSE 500 index had fallen to 11,098.23 points, the Nifty 50 index had decreased to 8,597.75 points, and the Nifty 500 index had dropped to 6,996.75 points. The pandemic-induced economic uncertainty and disruptions significantly impacted market performance during this period.

Following the sharp decline due to the COVID-19 pandemic in March 2020, the indices gradually recovered, reaching pre-pandemic levels by December 2021. However, 2022 proved to be a challenging year for stock market investors globally. The year was marked by a significant decline in stock markets worldwide, exacerbated by the Russian invasion of Ukraine in February 2022,

which triggered a widespread sell-off across financial markets. Consequently, the Nifty 50, BSE 500, and Nifty 500 indices also experienced a downward trend during this period.After mid-2022, the indices began to recover, displaying upward movements with some corrections until March 2024. By March 2024, the indices reached their highest points, with the BSE 500 peaking at 32,043.20 points, the Nifty 50 at 22,326.90 points, and the Nifty 500 at 20,255.15 points. This recovery phase highlights the resilience and eventual rebound of the markets following the global economic disruptions of the previous years. Details are given in Figure-1 and Appendix 'A'.

Figure-1 : Trends and Pattern of Indices of BSE 500, Nifty 50 and Nifty 500
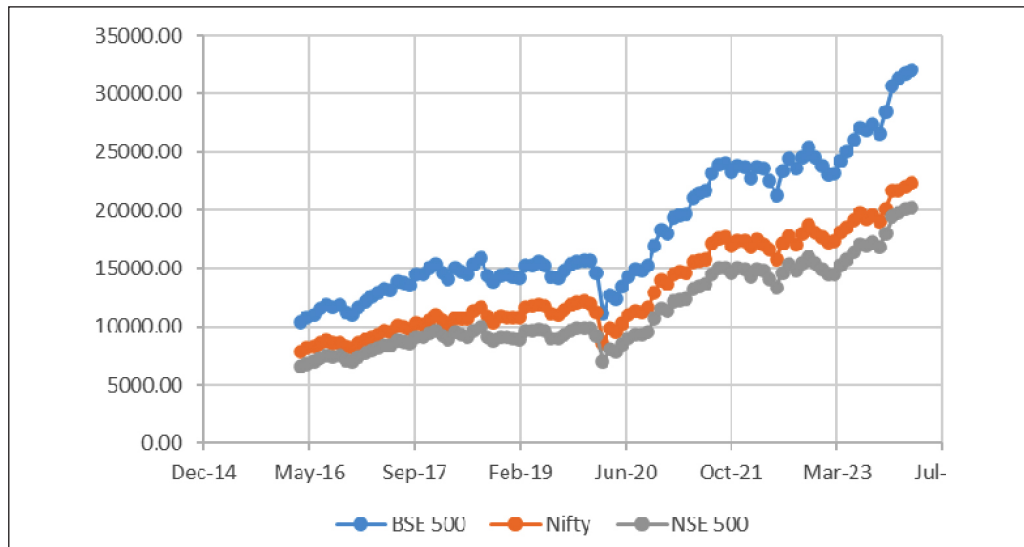
This figure represents the trend pattern of monthlyindices of BSE 500, Nifty 50 and Nifty 500during the period from April 2016 to March 2024.

V. Conclusion

There is a well-established association between industrial growth and movement in the capital market, which shows that whenever industrial growth occurs, there is a demand for financial product in the capital market. The comprehensive analysis of the Indian economy's industrial and capital market sectors from 2016 to 2024 underscores a substantial interplay between these domains, with the Index of Industrial Production (IIP) rising by 37.60% and the Nifty 50, BSE 500,

and Nifty 500 indices increasing by 184.43%, 207.93%, and 207.43%, respectively. The strong positive correlations between these stock market indices and the IIP, particularly high with the electricity sector, indicate that industrial productivity significantly influences market dynamics. Key economic events, such as the introduction of the long-term capital gains tax in 2018, the re-election of the NDA government in 2019, the COVID-19 pandemic, and the Russian invasion of Ukraine in 2022, had distinct impacts on the indices. Despite these challenges, the markets demonstrated resilience, ultimately reaching their highest points in March 2024. This study highlights the critical role of policy decisions, economic reforms, and global events in shaping the relationship between industrial growth and capital market investments in India, providing valuable insights for policymakers, investors, and stakeholders.

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Appendix 'A'

Month	BSE 500	Nifty	NSE 500	IIP	Mining	Manufacturing	Electricity
Apr-16	10406.12	7,849.80	6,588.55	115.7	95.9	114.9	142.9
May-16	10761.49	8,160.10	6,804.00	122	101.4	123.6	146
Jun-16	11029.45	8,287.75	6,980.80	120.5	98.4	122.4	144.3
Jul-16	11585.96	8,638.50	7,330.00	117	88.4	120.6	142.5
Aug-16	11834.89	8,786.20	7,490.65	117.8	84.7	120.9	143.5
Sep-16	11700.65	8,611.15	7,394.85	116.5	87.7	122.1	145.6
Oct-16	11878.89	8,625.70	7,501.45	122.5	101	122.5	145.1
Nov-16	11195.09	8,224.50	7,079.40	116.1	106.2	116.6	134.9
Dec-16	11036.44	8,185.80	6,982.80	124.1	114.1	122.5	137.8
Jan-17	11659.94	8,561.30	7,379.30	124.8	114.4	123.1	138.9
Feb-17	12176.95	8,879.60	7,709.10	117	110.5	119.7	130.2
Mar-17	12631.90	9,173.75	7,995.05	132.6	127.7	132.2	147.9
Apr-17	12979.24	9,304.05	8,214.30	117.3	98.8	117.3	150.6
May-17	13199.15	9,621.25	8,350.95	124.8	101.7	125.6	158.1
Jun-17	13178.45	9,520.90	8,331.60	119.3	98.5	120.3	147.4
Jul-17	13897.23	10,077.10	8,793.30	118	92.4	119.3	151.9
Aug-17	13762.13	9,917.90	8,694.95	122.1	92.6	124.1	155.4
Sep-17	13610.70	9,788.60	8,600.00	123.1	94.4	125.6	150.5
Oct-17	14485.57	10,335.30	9,153.60	122.5	100.8	123.7	149.8
Nov-17	14493.58	10,226.55	9,154.50	125.8	107.7	127.7	140.1
Dec-17	15002.73	10,530.70	9,490.65	130.6	115.5	132	143.9
Jan-18	15347.19	11,027.70	9,697.90	132.3	114.6	133.7	149.5
Feb-18	14670.49	10,492.85	9,261.90	127.4	110.1	129.9	136.1
Mar-18	14125.53	10,113.70	8,912.10	140.3	131.3	138.6	156.7
Apr-18	15047.73	10,739.35	9,496.50	122.6	102.6	123.1	153.7
May-18	14765.69	10,736.15	9,315.35	129.6	107.6	130.1	164.7
Jun-18	14528.54	10,714.30	9,162.45	127.7	104.9	128.6	159.9
Jul-18	15314.81	11,356.50	9,650.60	125.7	95.5	127.6	162
Aug-18	15846.20	11,680.50	9,992.00	128	92	130.6	167.2
Sep-18	14445.89	10,930.45	9,116.00	128.8	94.5	131.6	162.9
Oct-18	13881.71	10,386.60	8,753.45	132.8	108.2	133.9	166
Nov-18	14429.00	10,876.75	9,109.15	126.1	110.6	126.8	147.3

Dec-18	14540.39	10,862.55	9,170.00	133.9	114.4	135.8	150.4
Jan-19	14285.11	10,830.95	9,003.85	134.2	119.1	135.5	150.9
Feb-19	14196.80	10,792.50	8,955.95	127.5	112.5	129.3	137.9
Mar-19	15304.57	11,623.90	9,663.70	140.2	132.7	144.6	160.1
Apr-19	15293.75	11,748.15	9,664.30	126.5	107.8	126.2	162.9
May-19	15517.90	11,922.80	9,805.05	135.4	110.1	135.8	176.9
Jun-19	15291.70	11,788.85	9,657.95	129.3	106.5	129	173.6
Jul-19	14324.12	11,118.00	9,044.95	131.8	100.2	133.7	170.5
Aug-19	14234.07	11,023.25	8,977.55	126.2	92	128.4	165.7
Sep-19	14810.02	11,474.45	9,340.90	122.9	86.4	126	158.7
Oct-19	15387.13	11,877.45	9,689.65	124	99.5	126.3	145.8
Nov-19	15567.67	12,056.05	9,813.65	128.8	112.7	130.6	139.9
Dec-19	15667.44	12,168.45	9,872.55	134.5	120.9	135.4	150.3
Jan-20	15649.81	11,962.10	9,861.45	137.4	124.3	137.9	155.6
Feb-20	14627.62	11,201.75	9,236.05	133.5	123.4	133.3	153.8
Mar-20	11098.23	8,597.75	6,996.75	117.7	130.4	112.2	146.9
Apr-20	12721.00	9,859.90	8,012.90	54	78.8	42.1	125.6
May-20	12414.85	9,580.30	7,822.40	90.2	87.6	84.4	150.6
Jun-20	13438.14	10,302.10	8,474.80	107.9	85.7	107.1	156.2
Jul-20	14346.18	11,073.45	9,035.75	117.9	87.5	118.5	166.3
Aug-20	14890.06	11,387.50	9,372.05	117.2	84	118.7	162.7
Sep-20	14851.00	11,247.55	9,341.75	124.1	87.6	126.5	166.4
Oct-20	15215.01	11,642.40	9,581.65	129.6	98.5	132	162.2
Nov-20	16995.01	12,968.95	10,719.05	126.7	106.6	128.5	144.8
Dec-20	18300.10	13,981.75	11,518.30	137.4	117.3	139	158
Jan-21	17975.30	13,634.60	11,302.40	136.6	121.3	136.6	164.2
Feb-21	19371.25	14,529.15	12,181.40	129.9	117.9	129.7	153.9
Mar-21	19601.95	14,690.70	12,313.70	145.6	139	143.3	180
Apr-21	19689.52	14,631.10	12,364.35	126.1	107.6	124.6	174
May-21	21055.18	15,582.80	13,226.35	115.1	108.3	111.5	161.9
Jun-21	21463.09	15,721.50	13,473.55	122.8	105.5	121.2	169.1
Jul-21	21753.68	15,763.05	13,664.25	131.5	104.6	131	184.7
Aug-21	23174.23	17,132.20	14,555.90	132.4	103.6	131.9	188.7
Sep-21	23937.54	17,618.15	15,052.65	129.5	95.1	131.9	167.9

Oct-21	**23990.09**	17,671.65	15,086.90	135	109.8	136.4	167.3
Nov-21	**23276.88**	16,983.20	14,648.35	128	111.8	128.9	147.9
Dec-21	**23811.00**	17,354.05	14,996.20	138	120.4	139.8	162.5
Jan-22	**23715.29**	17,339.85	14,921.45	139.3	124.9	139.2	165.6
Feb-22	**22741.64**	16,793.90	14,307.95	131.8	123.2	130.4	160.8
Mar-22	**23695.01**	17,464.75	14,894.50	148.8	144.4	145.3	191
Apr-22	**23551.65**	17,102.55	14,783.35	134.5	116.6	131.6	194.5
May-22	**22497.64**	16,584.55	14,119.60	137.8	120.4	134.6	199.9
Jun-22	**21324.54**	15,780.25	13,387.55	138.3	113.7	136.8	196.9
Jul-22	**23359.64**	17,158.25	14,665.65	134.4	101.1	135	188.9
Aug-22	**24437.22**	17,759.30	15,325.05	131.5	99.6	131.3	191.3
Sep-22	**23642.46**	17,094.35	14,829.35	133.8	100	134.6	187.4
Oct-22	**24589.55**	18,012.20	15,424.00	129.5	112.6	128.5	169.3
Nov-22	**25406.76**	18,758.35	15,946.15	137.7	122.7	137.5	166.7
Dec-22	**24605.78**	18,105.30	15,448.85	145.9	132.6	144.9	179.4
Jan-23	**23778.46**	17,662.15	14,935.50	147.4	136.1	145.5	186.6
Feb-23	**23084.79**	17,303.95	14,518.75	139.3	129.2	137.6	174
Mar-23	**23160.01**	17,359.75	14,557.85	151.7	154.2	147.5	188
Apr-23	**24209.37**	18,065.00	15,219.55	140.7	122.6	138.8	192.3
May-23	**25059.67**	18,534.40	15,766.40	145.6	128.1	143.1	201.6
Jun-23	**26078.65**	19,189.05	16,430.00	143.9	122.3	141.6	205.2
Jul-23	**27069.01**	19,753.80	17,059.00	142.7	111.9	142.1	204
Aug-23	**26848.76**	19,253.80	16,924.30	145.8	111.9	144.4	220.5
Sep-23	**27407.75**	19,638.30	17,292.60	142.3	111.5	141.5	205.9
Oct-23	**26605.19**	19,079.60	16,801.10	144.9	127.4	142.1	203.8
Nov-23	**28442.43**	20,133.15	17,987.95	141.1	131.3	139.3	176.3
Dec-23	**30720.28**	21,731.40	19,429.15	152.3	139.4	151.6	181.6
Jan-24	**31303.35**	21,725.70	19,802.10	153.5	144.1	150.7	197.1
Feb-24	**31777.02**	21,982.80	20,090.05	147.1	139.7	144.3	187.1
Mar-24	**32043.20**	22,326.90	20,255.15	159.2	156.1	155.1	204.2

Source: Data were collected from different websites i.e., www.pib.gov.in, www.investing.com, www.bseindia.com, www.nseindia.com

Examining the Impact of Employee Relations on Employee Retention in the Context of Higher Education Institutes (HEI)

AKANKSHA SAXENA AND MANISH DHINGRA

Abstract : *Employee relations are one of the critical essential components of hierarchical execution, success, and maintainability. Enviable employee relations result in profoundly dedicated, propelled, and steadfast workers in the associations. Keeping up with and encouraging great relations between employers and employees can make an amicable air. Invariability at work not only aids in protecting the interests of employers and employees but also advances the dynamic improvement of the association. The adverse consequences of employer-employee relations, an employer who neglects to comprehend issues concerning his employees probably won't make long-term progress in his undertaking.*

In light of the fact that employees are the most important resource for any organization, this study aims to investigate and analyze a literature review on employee retention strategies of higher education institutions. It aims to determine the factors influencing and attempting to quantify employee retention. In this review, the sample was gathered from different employees of various higher education institutes situated in Lucknow, by a self-regulated questionnaire based on the random sampling method (RSM). The assessment was done by quantifiable assessments in SPSS. The study's findings confirm that higher education institutions (HEI) need to foster areas of strength between management and employees, establish a decent open climate, and urge representatives to fill in collectively without segregation. Additionally, this paper gives bits of knowledge into the difficulties faced by institutes in retaining their academic employees and the need to carry out methodologies to further improve retention. Besides, this study likewise gives different suggestions to the top administration of the colleges to give

Akanksha Saxena, Research Scholar, Faculty of Commerce and Management, Rama University, Kanpur, UttarPradesh, India.

Prof. (Dr) Manish Dhingra, Professor & Dean, R&D, Faculty of Commerce and Management, Rama University, Kanpur, Uttar Pradesh, India.

regard alongside worth and appreciation, give a sound workplace and occupation configuration, place employees as per their abilities, and give vocation valuable learning experiences to retain a quality workforce by making them committed and secured. Accordingly, higher education institutions can lessen the expenses related to employee turnover and affirm that they have experienced and talented employees to convey high-quality education and research. Additionally, future recommendations have been made for researchers who are interested in the subject.

1. Introduction

Employees are among an organization's most valuable assets and are reckoned as one of its most valuable assets. An organization's productivity is directly influenced by its nature and volume of work.

Academic employee turnover has transformed into a pertinent predicament all over the world. Retention of employees is a perplexity for Higher Education Institutions (HEI). The high turnover rate of academic staff can extensively affect understudies and remaining staff individuals when void positions exist considering a shortfall of accessible qualified faculty (Sepesho and Naile, 2014).

2. Employee Relations and Employee Retention

The term 'employee relations' alludes to an organization's endeavors to regulate associations between employers and employees. Employee relations are conventionally oriented with regulating dealing with the business relationship and fostering a positive mental understanding. Employee relations incorporate the assortment of work concerned with nurturing employer-employee relationships that add efficiency, inspiration, and confidence.

3. Review of Literature

1. As per a review led by Alshamrani et al., 2023, it was exhibited that there exists a positive connection between employee retention and six key variables. These variables incorporate compensation and benefits, workplace environment, relationship with accomplices, corporate culture, employee encouragement and motivation, and leadership inside the association.

2. According to **Justice Solomon Kolantwi Barimah (2017)**, leadership and institutional culture, growth opportunities, valuable learning experiences, the institution's mission and vision, reasonable work, and collegiality influence the retention of the university's teaching employees. These formal retention strategies support the intrinsic needs of employees and furthermore leverage the qualities and strengths of their institutional culture.

3. In their article, **Mohammed Sahedur Rahman and Rabeya Khatun Taniya (2017)** emphasized that Employee Relationship Management (ERM) emphasizes novel means of communication. Both the employer and employee gain from maintaining positive employee relations. The purpose of the study was to determine how Employee Relationship Management (ERM) affects the performance of banking sector employees. The authors used HR Practices, Trust, Communication, Leadership Style, Shared Goals, and Values were used in the study by the authors. This study confirmed that Employee Relationship Management (ERM) components have a positive effect on performance. They argued that recognizing Employee Relationship Management (ERM) practices in all aspects of an organization's employees' lives would directly boost its performance.

4. **Pamuditha and Harshani Samarasinghe (2017)** in an article concentrated on three factors, including, correspondence, grievance handling, and guiding as the variables deceiving Employee Relationship Management (ERM), and figured out its effect on the inspiration of associate-level employees in a hotel in Columbo. They discovered that relations between employers and employees are poor, so they proposed some suggestions in their article to improve relations between employers and employees, focusing on the aforementioned factors.

5. As stated by **R. Anbu Ranjith Kumar (2016)** colleges employ inadequate retention policies to retain faculty members. There is a divergent workforce populace, whose solicitations effectual retention measures enhance work satisfaction, which subsequently augments work execution.

6. **Rowland Worlu et al.'s (2016)** research aims to determine whether employee relations strategies influence employee performance at a Nigerian educational institution. Factors such as versatile progressive techniques, affirmation, value, progress, and instruction influence definitive execution with the mediating elements of delegate affiliation and support. It was found

that techniques for employee relations affected representatives' performance. They suggested to policymakers that a more supportive employee relations strategy would lead to increased job performance and employee retention. They called managers to focus on various versatile leveled procedures.

7. According to **Dr.Mita Mehta, Aarti Kurbetti, Ravneeta Dhankhar (2014),** employee retention and commitment are affected by career development opportunities, compelling talent management methodologies, enrollment, on boarding and orientation, compensatory benefits, training & development, equilibrium in work and life, authoritative culture, direction, corporate altruism, independence and emancipation, audits, individual causes, business-related techniques and leisure time, valuating performance and career developmental opportunities show the magnitude and significance on exerting influence on retention and stimulate employee obligation in the association.

4. Objectives of the Study

1. To investigate the existing academic staff retention strategies of higher education institutions in Lucknow.

2. To concentrate on the significance of retaining talented and experienced academic staff members.

3. To determine the issues and difficulties that institutes face when implementing and maintaining employee relations.

4. To proffer admonishment to overcome various obstacles and implement employee relations in institutions.

5. Statement of the Problem

Employees are regarded as the company's assets because they contribute in numerous ways to the organization's success. As a result, positive employee relations must be maintained within the organization by management. Employee relations are vital and assume a significant part in this way today the association contributes both time and money for a decent relationship in the association. The company currently faces difficulties in long-term employee retention. In this way, examining employee relation management is significant.

Stemmed from the literature review, numerous studies on employee retention have been conducted from both the employee's and employer's perspectives.

There is a lack of research on the association between the reasons employees want to stay with an organization and the employer's retention strategies. The majority of studies on staff retention in the IT sector, secondary and high schools, nursing, and other fields were conducted in established businesses. As a result, there is much room for research into employee retention strategies in higher education institutions. Few studies examined the relationship between employee relations factors and strategy and employee retention.

6. Need / Significance of the Study

Employees are the quintessence of any association. Employee retention refers to an organization's strategies for maintaining employees on the staff for a long time. Employee retention strategies help employees perform their jobs well and stay with the company for a long time. To ensure that employees enjoy their work and gain knowledge, certain beneficial actions must be taken. Employee turnover is expensive for associations. It is difficult to find key employees suitable replacements. An organization's outstanding performance is correlated with low employee turnover. Thus, hiring is a challenging task. It is plausible that he will join the rivals after resigning. An employee who stays with the company for a long time is more likely to be honest with management and the organization.

The fact that employees and management play such a significant role in an organization makes this study unique. The study is expected to be beneficial to institute management, employees, staff, and future researcher management.

1. It will assist the institute in determining ways to improve employee relations. It gives useful information about employee relations that can be used in future scientific studies.

2. To the researcher, it can add to developing the researcher's information and comprehension of the part of employee relations by giving attention to the higher education institutes (HEI) about employee relations and how it exerts influence on employee retention.

3. For the employees, it will help them learn how to communicate with one another within the institute, which will make their work less stressful and teach them how to complete it more effectively and efficiently.

7. Employee Turnover in Higher Education Institutes (HEI)

In higher education institutions (HEI), administrators, academic employees, and faculty are now considered social norms (Figueroa, 2015). According to Takawira,

Coetzee, and Schreuder (2014), employee turnover also significantly affected their physical, mental, and emotional well-being. Employee turnover also had an impact on higher education institution (HEI) university presidents. University presidents are powerless against instinctive and intentional turnovers. Eckel and Kezar (2016) conjectured that university presidents assume critical roles in raising money, budget management, strategic premeditation, working with the local community, state, and administering sheets, and working with executives in a tight spot. According to Figueroa (2015), employee turnover in higher education institutions (HEI) can have a negative impact on staff, faculty, and institution operations. According to Abubakar et al., 7.7% of full-time faculty members from various colleges and universities are transferred to other institutions. More than 20,000 specialists, including medical personnel and academic employees from various universities and colleges, consistently pass on to the African central area to look for work in different countries (Abubakar et al., 2015).

8. Factors of Employee Relation to Embolden Employee Retention

In light of the preceding literature review, several factors have been identified that have the potential to encourage academic employee retention. Rewards and compensation, training, working conditions, recognition, promotion, job security, support from supervisors, job autonomy, and job satisfaction are all examples of these factors.

8.1. Rewards and Remuneration

8.2. Continuing Professional Development (CPD)

8.3. Transparency in Communication

8.4. Gratifying a Healthy Work-Life Balance

8.5. Appealing Management and Leadership

9. Research Methodology

9.1. Research Design

This study aimed to ascertain how employee relations influence employee retention in the academic sector of Lucknow. To empirically speculate on the

research objective, a quantitative approach to a descriptive research design will be utilized for this study. Relevant data and information were gathered, evaluated, and analyzed using a variety of statistical tools. The study constructs—salary, promotion, recognition, and working environment—were assessed using a five-point Likert scale, with 1 representing strongly disagree and 5 representing strongly agree. The validity and reliability of this scale are very high.

9.2. Sample and Sample Size

The study is descriptive owing to the fact that the review forages for the variables that impact employee retention in an institute. Additionally, it intends to investigate the implications of these variables for the academic staff to remain in the same foundation. The academic staff will be asked for their input through a synoptic and well-organized questionnaire. According to Wellman and Kruger (2004), a sample has the accompanying components:

- Representivity: The populace should be addressed by the sample.

- If the researcher can present their findings to that populace, the sample needs to be of a size that makes sense.

- The acceptable sample size should generally be 33% of the designated population, though sometimes 25% is sufficient. T

- The sample's randomness: Any member of the population can be part of the sample.

According to Blaikie (2018), researchers frequently choose their sample sizes by referring to sample sizes from previous research review evidence. Using a case study approach, Amena (2017) interviewed five banking managers to investigate strategies for reducing employee turnover.To ascertain how employee relationships affect employee retention in Lucknow's academic sector, 110 respondents were surveyed.

9.3. Participants

According to DeJonckheere and Vaughn (2019), participants in a review ought to have encountered or participated in the peculiarity. Therefore, to accomplish the objectives of a study, it is essential to establish selection criteria for participants (Saxena, 2017). To be eligible, participants had to be employed in higher education and have worked for more than five years. The researcher can get in touch with

the institution gatekeeper at the research site to find out if participants are available and how to contact them (Fusch & Ness, 2015). To ascertain how employee relationships affect employee retention in Lucknow's academic sector, 110 respondents were surveyed.

9.4. Data Collection

A) **Primary Data** : A structured questionnaire-based survey has been adapted for data collection.

B) **Secondary Data** : Diversified national international journals on Staff support, maintenance and retention Frameworks, Human resource praxis to retain talented and experienced employees, retention of employees and staff in divergent areas such as the academic sector, IT areas, hospitals, enterprises, analyzing the effect of the workplace, incentives, and fringe benefits, positions of authority, research papers, proposal, and different auxiliary information sources has been utilized for the review.

Table-1 : Factor Measurement

Variables	No of items	Source
Rewards and Remuneration	6	Frye *et al.*, 2020
Professional development	5	Presbitero *et al.*, 2016
Communication	3	Kundu and Lata, 2017
Work-Life Balance	4	Fletcher *et al.*, 2018
Leadership	6	Kundu and Lata, 2017
Employee retention	6	Haldorai, *et al.*, 2019

9.5 Data Analysis Tool

First, the responses are placed into the Statistical Package for Social Sciences (SPSS) version 23 to analyze the data. Then, SPSS and Microsoft Excel were utilized to sort, dissect, and decipher the information. The reliability of data has been attempted through Cronbach Alpha. It has additionally been analyzed through descriptive statistics. Descriptive statistics like frequencies, percentages, cross tabs, and correlation were used in the adopted statistical methods.

10. Analysis and Discussion of Result

The study had targeted a sample of 110 respondents out of 165. The examination assembled data from 110 individuals, with a reaction pace of 66.7 percent. Table-1 summarizes the respondents' demographic profiles for the study.

Table-2 : Demographical Profile of the Respondents

Demographical Profile		Frequency	Percentage
Gender	Male	76	69.09
	Female	34	30.91
Age (In Years)	20-30	32	29.09
	30-40	41	37.27
	40-50	23	20.91
	Above 50	14	12.73
Academic Experience (In Years)	5-10	42	38.18
	10-20	31	28.18
	20-30	26	23.64
	Above 30	11	10.00
Highest Qualification	Ph.D.	45	40.91
	Post Graduate	39	35.45
	Graduate	26	23.64
Academic Position	Professor	14	12.73
	Associate Professor	41	37.27
	Assistant Professor	32	29.09
	Others	23	20.91

Source : Filed Study.

10.2. Reliability Analysis

The reliability test was applied to the collected data. Are liability analysis test is done with the stipulation that the variable is supposed to be reliable and can be considered for study if the value of Cronbach alpha (á) is greater than 0.60. The corollary of the reliability analysis test demonstrated the way that all the questions of the questionnaire could be supposed to genuinely deserve being research instruments and in this manner appropriate to be utilized as measuring instruments.

Table-3 : Reliability Analysis

Variable	No of items	Cronbach alpha (α)	Information
Reward and remuneration	6	0.918	Reliable
Professional Development	5	0.938	Reliable
Communication	3	0.843	Reliable
Work-Life Balance	4	0.891	Reliable
Leadership	6	0.935	Reliable
Employee Retention	6	0.907	Reliable

Source : Author's Compilation.

The corollary of the reliability analysis test utilizing SPSS above shows that every one of these variables of the questionnaire instruments has are liability value that serves the purpose and is asserted reliable because Cronbach's Alpha sign is more than 0.60.

Correlation Analysis

If the coefficient of correlation between two variables is greater than 0.5, it is said that they are correlated. One of the independent predictor variables must be excluded from the analysis if there is a correlation shows the mean scores based on the weighted average method.

Among all the factors, leadership behavior has got highest mean value of 4.0545 (S.D. =0.88656). This implies representatives are profoundly happy and satisfied with the factor practices by the college and all the employees acknowledge it. From the characteristics of the data, it is observed that the data of continuing professional development (Mean = 3.9000, S. D. = 1.01322) and open communication (Mean = 3.9182, S. D. = 0.97803) are highly deviated from the mean among all other factors. This statistical evidence implies that these two factors involved in the practice of the college are not appropriate for all employees of the institutions. As a result, the college should reevaluate its communication and practices for professional development. In contrast, the data of workload (Mean = 4.1182, S. D. = 0.82096) and reward and remuneration (Mean = 4.0455, S.D. = 0.88189) have been found less deviated from the mean. These statistics indicate that the college has been successfully distributing equivalent burdens and providing fair rewards and remuneration, which are appreciated and valued by all levels of the employees.

Table-4 : Mean, Standard Deviation, and Correlation Coefficient

Variables	Mean	Std Dev.	ER	RR	CPP	C	WL	L
Employee Retention (ER)	4.0545	.87615	1	.911**	.823**	.883**	.897**	.894**
Reward and remuneration (RR)	4.0455	.88189	.911**	1	.796**	.866**	.880**	.877**
Continuous Professional Development (CPP)	3.9000	1.01322	.823**	.796**	1	.871**	.808**	.915**
Communication (C)	3.9182	.97803	.883**	.866**	.871**	1	.812**	.883**
Work-Life Balance (WL)	4.1182	.82096	.897**	.880**	.808**	.812**	1	.886**
Leadership (L)	4.0545	.88656	.894**	.877**	.915**	.883**	.886**	1
**. Correlation is significant at the 0.01 level (2-tailed).								
Source : Filed Study.								

In the table, a significant positive and strong correlation was found for employee retention in relationship with reward and remuneration policy (r = 0.911, p <0.01), with continuous professional development (r = 0.823, p <0.01), with open and clear communication (r = 0.883, p <0.01), with Work-Life Balance (r = 0.897, p <0.01), and with leadership (r = 0.894, p <0.01). This significant correlation indicates that these factors have a strong influence on the employee retention policy of the college. Moreover, a positive and strong correlation was found between reward and remuneration policy, continuous professional development, open and clear communication, Work-Life Balance, and leadership which implies the college should develop and adopt a policy that has complete synchronization among those factors.

This significant correlation demonstrates that these variables influence the college's employee retention strategy. In addition, a positive and strong correlation was found between the institute's reward and remuneration policy, ongoing professional development, open and transparent communication, Work-Life Balance, and leadership. This indicates that the college ought to develop and implement a policy that synchronizes all of these aspects completely.

Regression Model

Multiple regression is a statistical approach used to obtain the value of a measure of various predictor variables on an explanatory variable. It is the instantaneous amalgamation of numerous factors to evaluate how and to what level the dependent variable is affected by various predictor variables. Regression is used to determine the value of a dependent variable based on the value of two or more predictor variables. In this study, we checked the impact of selected variables on the dependent variable.

The statistical method known as multiple regression is used to determine the effect of various predictor variables on an explanatory variable. It is the instantaneous fusion of numerous factors to determine how and to what extent the dependent variable is affected by various predictor variables. Based on the value of two or more predictor variables, regression is used to calculate the value of a dependent variable. In this study, we checked the impact of selected variables (reward and remuneration policy, ongoing professional development, open and transparent communication, Work-Life Balance, and leadership on the dependent variable (employee retention).

Table-5 : Regression Analysis

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.946[a]	.895	.890	.29068	.895	177.251	5	104	.000

a. Predictors: (Constant), L, RR, C, WL, CPP

b. Dependent Variable: ER

Source : Ibid.

Table-6 : Anova Table

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.885	5	14.977	177.251	.000[b]
	Residual	8.788	104	.084		
	Total	83.673	109			

a. Dependent Variable: ER

b. Predictors: (Constant), L, RR, C, WL, CPP

Source : Ibid.

Table-7 : Coefficient

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.053	.145		.370	.712		
	RR	.304	.082	.306	3.710	.000	.149	6.717
	CPP	-.052	.074	-.061	-.710	.479	.139	7.198
	C	.247	.072	.276	3.438	.001	.156	6.394
	WL	.323	.083	.303	3.910	.000	.169	5.932
	L	.167	.106	.169	1.573	.119	.087	11.444

a. Dependent Variable: ER

Source : Ibid.

Table shows that 89.0% of employee retention is explained by all independent variables, such as reward and remuneration policy, ongoing professional

development, open and transparent communication, work-life balance, and leadership. However, the model's significance is demonstrated in the ANOVA table. According to Table 10.2.3.3 regression equation of employee retention satisfaction is:

Employee Retention = 0.53 + 0.304 (Reward and remuneration) -0.052 (Continuous professional development) +0.247 (Open and transparent communication) + 0.323 (Work-Life Balance) + 0.167 (leadership).

The results from the analysis showed there is a positive relationship between all the Employee Relationship practices and employee retention of employees except one i.e. opportunity for Continuous professional development.

11. Strategies for Building Positive Employee Relationships in the Education Sector

11.1. **Initiatives to Increase Employee Engagement**

11.2. **Collaboration in Decision-Making**

11.3. **Initiatives for Professional Development**

11.4. **Policies that improve and encourage a better work-life balance**

11.5. **Adopt Comprehensive Communication Strategies**

11.6. **Continuous Feedback and Acknowledgment :** Implementing robust feedback mechanisms and recognition programs can further enhance employee morale and engagement. Higher education institutions (HEI) can cultivate a culture of appreciation and a continuous environment by improving their performance appraisal systems, reward mechanisms, and employee recognition initiatives by benchmarking them against peers in the industry who are known for their focus on employees.

12. Strategies for Retaining Employees at Various Levels of Management

The possible retention strategies are depicted in Figure-1 below and used to keep workers at all three levels of management, namely the Top, Middle, and Lower levels, as each level calls for a unique treatment due to the difference in designation and hierarchical status and an assortment of pay scales.

Figure-1 : Strategies for the Treading Employees

Lower Level	Middle Level	Top Level
• Acknowledging and increasing a work well accomplished • Acclaiming professionals and personal achievements • Offering benefits • Offering incentives and perks • Providing workplace amenities	• Acknowledging and increasing a work well accomplished • Providing various benefit programs for family • Giving satisfactory workplace • Facilitating opportunities for self-improvement and career advancement	• Increasing Work-Life Efficiency • Recognize the needs of employees • Promoting Professional and Personal Growth and Development • Create a trusting environment • Hiring the right people

Source : Author's Compilation.

13. Conclusion and Recommendations

In conclusion, there is strong evidence that employee relationships positively impact employee retention and job satisfaction. Employee retention is correlated with the strength of interpersonal relationships. There are numerous approaches to improving the representatives' relationship in this review. The best method for further developing representative relations is open and transparent correspondence. In an association, there should be a correspondence between one another. Consequently, they can achieve the same objective. There will continuously be a contention between the colleagues or among managers and workers in the association. Because employers can better understand their employees' strengths and weaknesses, the work becomes easier after communication. Based on their knowledge and skills, employees can be assigned jobs that are right for them. Employees place a high value on top management because it is essential to promote human values and maintain positive relationships with them. An organization can benefit from the efforts of skilled leaders and professionals in human resources to foster and maintain a spirit of cooperation. At the point when the pioneers generally continue upholding and executing this soul in the whole association, then the whole association will systematically assimilate a similar soul. Subsequently, it will end up being the association's perspective.

When they are satisfied with their work, representatives are motivated to work. Large portions of the representatives are persuaded to work when their top administration has valued their work. Additionally, the institute offers excellent benefits or rewards to its employees. Institutes will soon use gain sharing to reward productive teams. To reap the rewards, employees will do their best to

complete all tasks. Fortunately, this strategy has helped improve relationships with employees. Motivated employees will drive the institute's growth. Assuming that an institute has positive employee relations, the battles will be less because the differentiations between the employer and employee have not increased any expansive openings. While employee relations have been improved, the way of life in the work environment will turn out to be better, and individuals need to work in a work environment that has a decent culture. Employees will naturally comply with the institute's guidelines and standards when there is a good relationship in the group.

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Understanding Experience and Anxiety on Behavioral Intention B1 : Insight using GETAMEL and IPMA Model

Neha Goyal, Jitendra Singh Rathore and Rashmi Goel

Abstract : This study looks into variables predicting learners' behavioral intentions toward the usage of Edtech platforms. The background model of e-learning namely the "Technology Acceptance Model" is extended with "The General Extended Technology Acceptance Model for E-Learning" with the addition of experience and computer anxiety as moderator constructs used for this purpose. This study aims to identify whether independent constructs predict the intention to use ed tech platforms furthermore to determine the function of moderators on BI. This study analyzes the relationship of constructs and the BI with education-technology platform users, analyzing through the "Importance-Performance Matrix/Map Analysis" (IPMA) what the constructs need to improve. The analyzed data were gathered from 427 student respondents and analyzed by using SEM-PLS (version 4). The result suggests (1) "Subjective Norms", "Perceived Usefulness", "Perceived Ease of Use", and "Experience" are positively associated with BI and (2) PEOU, SN, enjoyment, and SE are strongly influenced by BI (3) No moderation effect of experience and computer anxiety on BI. The study ends with enlightening comments of the results, recognizing the substantial contributions and outlining potential directions for additional research to deepen our comprehension of students' intention towards ed tech platforms in the context of GETAMEL with experience and anxiety moderation.

Keywords : E-learning, GETAMEL, IPMA, Anxiety, Experience and Education
Technology (Edtech).

Ms.Neha Goyal (First Author), Research Scholar, Department of Commerce, Banasthali Vidyapith (Rajasthan), India. neha.goyal2311@gmail.com, 9717867972.

Dr.Jitendra Singh Rathore (Second Author), Assistant Professor, Department of Commerce and Management-Wisdom, Banasthali Vidyapith (Rajasthan), India. access.jitendra@gmail.com, 9772916023.

Dr.Rashmi Goel (Third Author), Assistant Professor, Department of Commerce, Shyama Prasad Mukherji College For Women, University of Delhi, India. rashmigoel@spm.du.ac.in, 9250873439.

1. Introduction

The emergence and development of technology in the education sector as a teaching-learning platform i.e. Edtech platform (ED Tech)has presented numerous advantages and even challenges for society. Ed-tech has the possibility to completely transform the way that instruction is provided as it can improve student participation, customize learning materials to meet each student's specific needs, facilitate online and distance learning, improve evaluation and feedback, streamline classroom communication, and create a central repository of new resources for educators. Through the use of simulated virtual reality, students can get a deeper comprehension of complicated subjects by experiencing situations from real life in a secure environment. The main advantage of edtech is its ability to provide individualized learning environments for each student, which can boost their sense of self-worth and SE and encourage a more enthusiastic approach to learning. For students of all ages and skill levels, edtech can play a noteworthy role in improving academic performance. Teachers may design dynamic, interesting learning experiences, provide students with tailored instructions, and give them feedback in real-time by incorporating technology into the classroom.

A study conducted by Durak, 2017; and Yunkul & Cankaya, 2017 demonstrated that Edmodo is a free educational platform teachers use to construct and arrange classes, distribute study materials, make notices, and initiate dialogues. Edmodo is also used by parents and guardians. It covers individualized learning resources and a secure environment. Gan, Menkhoff, and Smith (2015) state that the Edmodo online learning platform provides a safe and social learning environment-based platform for organizing assignments, group projects, and other learning activities. According to Venkatesh, Morris, Davis & Davis (2003), analyzing users' BI, access, and rejection of a certain online system is a crucial task in the realm of information technology. It is unquestionably true that a tech platform's ability to succeed depends on how users embrace and utilize it, as well as their BIs. Numerous research studies have examined users' BI toward technology-based platforms For example, Social media platform adoption (Basak & Calisir, 2015; Chang, Hung, Cheng, & Wu, 2015; Arteaga Sanchez et al., 2019) or intentions toward multiple learning systems (Joo, Kim, & Kim, 2016; Saroia & Gao, 2019). Numerous elements that influence students' intentions toward ed tech platforms have been investigated. However, further research is required to assess students' intentions to use ed tech platforms by exploring some independent variables and also determine the impact of moderators i.e. experience and computer anxiety on BIs with the presence of PU and PEOU. To

that aim, the GETAMEL model was employed as a theoretical framework. This study's aims to identify the contribution that impacts the BI of students toward ed tech platforms. The following inquiries are addressed by this study:

2. Research Questions

RQ1 : What Independent variables explain the students' "behavioral intention" to use ed tech platforms for academic motives?

RQ2 : Do computer anxiety and experience on BI, have a moderating responsibility to increase the users' intentions for ed tech platforms?

RQ3 : To evaluate whether the "GETAMEL Model" is active to offer a comprehensive online ed-tech platform to users.

3. Theoretical Background

3.1. Edtech (Ed Tech) Platforms

Information technology has revolutionized and raised accessibility and affordability, how education is provided and received by society. In this sense, information technology spawned the Edtech (Ed Tech) industry, which combined technology and education to provide teachers and students with an interactive teaching-learning environment. Serving users worldwide is made possible by the ed tech industry. In his well-known book "A Handbook of Programmed Learning," G.O.M. Leith, a professor at Birmingham University, coined the term "Edtech" in 1964. According to him, it is the application of scientific knowledge and learning environments to improve training and instruction's effectiveness and efficiency.

Edtech (Ed Tech) has performed well in India and is expected to grow much more in the future. The growing use of technology in education is dependent on society's level of digital literacy, and educational technology has the potential to attract investors in addition to students and teachers. India's ed-tech market is predicted to expand in the upcoming years due to its ability to transform education and provide easier self-paced learning. The industry is now expanding at a rapid pace. Indian edtech platforms offer self-paced learning environments, virtual classrooms, and high-quality instruction. India has a large number of Edtech platforms that provide quality education, innovative solutions, online tutoring, and learning resources. Dunleavy et al. 2019; Ozga, 2016; Jena, 2013 stated that Digital education encompasses more than just providing instruction online; it also involves integrating digital technologies into teaching and other

related fields including educational leadership and administration. It means digital education is more than online education and it is multidisciplinary in nature.

According to Paechter, Maier, and Macher (2010), online learning platforms are now a crucial component of delivering modern education-based curricula. If users do not utilize an Edtech platform, its advantages will not be fully realized (Pituch & Lee, 2006; Alenezi, 2012; Lai, Wang & Lei, 2012; Tarhini, Hone & Liu, 2014). Consequently, it is imperative to ascertain the constructs that contribute to learners' "BI" to utilize edtech platforms.

3.2. GETAMEL Model (General extended TAM for e-learning)

Researchers have employed the "TAM" (TAM) to ascertain how people adopt technology and track how external circumstances affect two crucial variables: PU and ease of use. The theory of technology acceptance (TAM) has been demonstrated to be a valid and robust model. Several analyses, including those conducted by Hsieh & Chen, 2013; Al-Gahtani, 2014; Chang & Tseng, 2014; Lee, Hsiao and Purnomo, 2014; Persada & Nadlifatin, 2014; Tarhini, Hone and Liu, 2014; Wu & Zhang, 2014 have explained that "TAM" model has good explanatory power to explain technology acceptance behavior. Therefore, an extended model called "The General Extended TAM for E-Learning (GETAMEL) was developed using the proven TAM as a foundation theory which makes use of the common external variables of the TAM.

A previous assessment of the literature identified several factors that are highly correlated with users' BI toward technology use. According to a study conducted in 2014 by Hosseini, Bathaei, and Mohammadzadeh, SE has a significant role in shaping online learning systems. Many studies have also revealed that a variety of factors, including SE (Chow, Herold, Choo & Chan, 2012), "Enjoyment Perception" (Wu & Gao, 2011, p. 47), "Computer Anxiety" (Alenezi, Abdul Karim & Veloo, 2010, p. 29), and "Experience" (Martin, 2012, p. 501), influence the decision-making process of learners when it comes to online learning systems.

In this study, the external factors i.e. SNs, perceived enjoyment, and SE have been used to determine the relationship between external factors and two common factors of the TAM model i.e. "PEOU and PU", to propose an extended model "General extended TAM". There are two moderating factors i.e. experience and computer anxiety are also used in this study to analyze the impact on users' BI towards acceptance of online educational platforms.

3.3. Previous Literature of Experience and Anxiety as Moderators

This table shows the previous articles with experience and anxiety as moderators. It shows the name of the moderator, article, year of article published and the author/s conducted a study on related articles by using different statistical tools.

Table-1 : Articles with Experience and Computer Anxiety as Moderators

Moderator	Article	Year	Author/s
Experience	"Web Acceptance Model (WAM): Moderating effects of user experience"	2007	"J.Alberto Castaneda, Francisco Munoz-Leiva, and Teodoro Luque"
Experience	"Application of TAM model to the use of information technology"	2019	"Muchriana Muchran, Ansari Saleh Ahmar"
Experience	"The moderating effect of experience on the intention to adopt mobile social network sites for pedagogical purposes: An extension of the TAM"	2018	"Lam Wai Leong, Othman Ibrahim, Mohammad Dalvi-Esfahani, Hamed Shahbazi & Mehrabaksh Nilashi"
Experience	"Understanding usage of Internet of Things (IOT) systems in China: Cognitive experience and affect experience as moderator"	2017	"Xuebing Dong, Yaping Chang, Yawei Wang, Jun Yan"
Anxiety	"Examine the moderating role of mobile technology anxiety in mobile learning: a modified model of goal-directed behavior"	2022	"Rui-Ting Huang, Mohd Khata Jabor, Tzy-Wen Tang, Sheng-Chun Chang"
Anxiety	"Antecedents for older adults' intention to use smart health wearable devices-technology anxiety as a moderator"	2022	"Mei-Yuan Jeng, Fan-Yun Pai, Tsu-Ming Yeh"
Anxiety	"PMT and mobile payment continuance intention: the moderating influence of digitalization anxiety"	2023	"Rawa Hijazi, Ajayeb Abudaabes"

(Sources of Table : Experience and Anxiety references given below)

4. Conceptual Model Framework and Hypotheses development

Since 2020, numerous studies have been carried out with the GETAMEL model, an expanded version of the TAM. Before 2020, the GETAMEL model was thought to have irrelevant factors, making it an inadequate model for understanding the behavior of technology adoption. Humida et al.'s study from 2021 assesses students' BIs when utilizing online learning platforms at Bangladeshi colleges

that have been chosen for study. Likewise, Jiang et al., 2021 study on the technological acceptability of online foreign language learning. Matarirano et al., 2021 conducted a study to assess students' technological acceptance of learning management systems. Similarly, other studies were performed based on technology acceptance and came to the conclusion that there is a constant need to make technology more pleasurable and to mandate training for technology learning. This will likely positively impact students' experiences with technology and boost their SE. As a result, based on the specified outcome, the conceptual model that follows has been framed with relevant external components.

This figure shows the base model of the research which contains external factors i.e. SNs, perceived enjoyment, SE, two common factors based on the TAM model i.e. PU and PEOU, and Moderators i.e. experience and anxiety with outcome construct i.e. BI.

Figure-1 : Conceptual Model of the Study
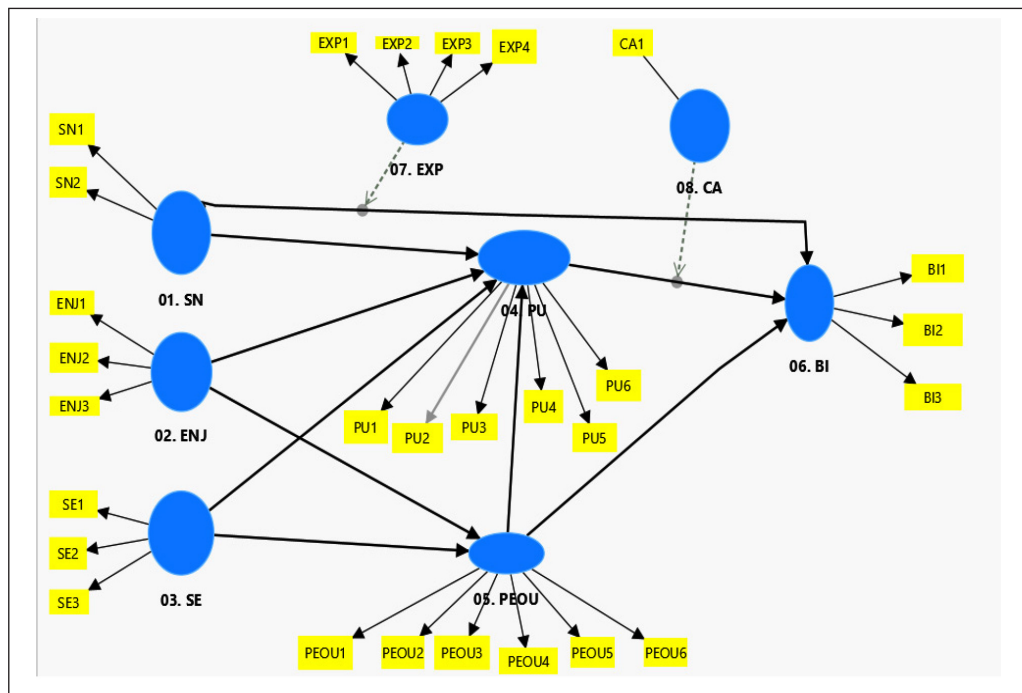
Source : Author created using Smart-PLS v.4.1.0.3.

"Subjective Norms"

A TRA construct called as "SN" (Fishbein & Ajzein,1975) describes the driving force behind our beliefs about what we believe our significant persons want us to do. Venkatesh & Davis (2000) discovered that when technology use was required, SNs significantly impacted both BI and PU. SNs continued to impact perceived utility even in cases when technology use was a choice, but they had no direct impact on BI. We suggest that the current study's anticipated result was expected based on these findings in voluntary settings. According to Hasbullah et al. (2016) shows that subject norms are positively influenced and have a positive and direct effect on BI. A study explained by Lian and Wuan (2014) on university students in Malaysia proves that the most significant and predicting factor impacting BI is the SN.

SNs show how the customers' behavior is perceived by important referents like family, neighbors, friends, and co-workers and how this influences the consumer (Schofield, 1975). SNs are a significant predictor of BI and PU, according to many psychological studies (Taylor & Todd, 1995; Yi, Jackson, Park & Probst, 2006; Yi et al.,2006; Lin 2007; Herrerocrespo & Rodriguez Del Bosque Rodriguez, 2008).

H1 : SNs positively affect PU.

H2 : SNs positively affect BI towards the ed tech platform.

Enjoyment

Researchers have discovered that the utilization of technology is influenced by both intrinsic (i.e. enjoyment) and extrinsic (i.e utility). A study conducted by Davis and Wiedenbeck (2001) says "Perceived enjoyment" can be described as the extent in respect to which computer use activity is seen as enjoyable in and of itself, regardless of any potential adverse effects on performance.

It has been established that users' intentions to use technology are significantly influenced by their perceived enjoyment (Van der Heijden, 2004).Many studies have shown that when it comes to technologies (Childers et al., 2017) and "social-networking sites" (Chuang et al., 2017) , "enjoyment" is a particularly powerful estimator of utilization decisions with these "technologies". However there is an idea of future research on the contribution of ed tech platforms in terms of perceived enjoyment, this is a topic that has been studied in the past for other technologies but not for ed tech platforms.

According to several theoretical stances, perhaps the most fundamental reason to use any kind of communication media is enjoyment (Griffin et al.,2015; Sherry, 2004). A study based on TAM (Lu and Xu, 2006) introduced three new constructs: Perceived enjoyment, privacy, and experience which concluded that BI is directly impacted by perceived enjoyment. The link between PEOU, PU, and enjoyment is another significant problem. According to the TAM Model, PU rather than PEOU was found to have a stronger influence on BI and PU mediated the impact of "PEU" on user acceptability (Davis, 1989).

Research has demonstrated that the linked variables of PU and PEOU can be significantly predicted by perceived enjoyment (eg. Venkatesh, 2000; Teo and Nuyes, 2011). Other studies, Van der Heijden (2004) & Liao et al. (2008) prove that PEOU and PU have a greater impact on enjoyment. Sun and Zhang (2006) concluded that the PEU is more affected by the perceived enjoyment direction than by the opposite direction ofthe utilitarian system. However, some researchers eliminated the PEU constructs and supported the idea that perceived enjoyment has greater predictive power over PU when it comes to BI (Verkasalo et al.,2010; Lin and LU,2011) So, this study will find the effects of perceived enjoyment on PU and PEOU.

H3 : Enjoyment positively affects PU.

H4 : Enjoyment positively affects PEOU.

"Self-Efficacy"

One's objective-mentioned, comparatively contextual, and further-focused ideas about one's competence are known as SE. Because these beliefs depend on tasks, they are pliable (Schunk & Pajares, 2009). Numerous studies have demonstrated the relationship between SE and students' interest and performance (Jiang, Sang, Lee & Bong, 2014; Pajares, 1996; Schunk, 1995). SE can improve the interest & scholarly accomplishment of students by affecting their efforts, tenacity, preservance, and use of methods (Pajares,1996).

A study conducted in 2005 by Luarn & Lin reported that "PEOU" is resulted to account for a strong attribute to SE. There is a strong connectivity between "SE" and "PEOU".A study was conducted in 2017 in Nigerian federal hospitals on the influence on users' intention to use e-collection systems and found that SE might be combined with PU and PEOU to investigate the impact of SE.

H5 : SE positively affects PU.

H6 : SE positively affects PEOU.

"PEOU&PU"

A study Moon. J.W & Kim (2000) concluded that to mitigate the risk of under-utilization or no-utilization, an online system must be single to understand and operate as if they are simple to use, users will be less afraid to use such technology. This study suggests that, in furthermore to its significant impact on users' intention to utilize online systems, the PEOU construct is likely to have a favorable effect on users' perceptions of their contact with online systems being useful. Honafizadeh et al. (2014) conducted a study to determine the factors influencing BI to use an online system based on the "TAM" and this study shows that there is a favorable effect of "PEOU and PU" on "BI".

Previous studies have generally demonstrated that PEOU has a good impact on a person's BI, although the impact is typically not as significant as other variables, namely "PU" (Cho & sagynov, 2015).The BI to use is strongly influenced by perceived utility, which includes time savings, assistance in job completion, tangible & intangible benefits, and effective financial management.

Several researches have demonstrated that users of online systems have a favorable effect on their intentions to use (Kaufaris & Sosa, 2004; Renny & Siringoringo, 2013). Positive perception leads one to believe that positive intention toward the system. Indeed, a study found that BI is more strongly influenced by perceived utility than by PEOU (Shaskam, Kavianpour, Honarbaksh & Hooi, 2013). So, this is the research gap that needs to be determined in this study.

H7 : "PEOU" positively affects "PU".

H8 : "PEOU" positively affects the BI of learners towards the "ed tech platforms".

H9 : "PU" positively affects the BI of learners in respect of the ed tech platforms.

Moderators (Experience and Computer Anxiety)

Kidwell & Jewell (2008) stated that "experience" has an important part in enhancing the impact of "SN" on "BI" of users. According to Purani & Sahadev (2008); Ling, Chai & Piew (2010) and Shi & Chow (2015), "experience" functions as a moderating element in the link of the "independent and dependent variables". Experience has a considerable moderating effect on the adoption of technology, according to early research by Lee and Hanson (1990); Bennett et al. (2005),& Shi and Chow (2015). It is obvious innovators and early adopters make adoption decisions based on their innate inventiveness; high-level experienced people don't always behave in the same way, therefore less persuasion is required

to get them to adopt. Additional research demonstrates that more seasoned computer users have favorable attitudes on the adoption of technology (NE Frye, MM Dornisch, 2010). According to Venkatesh et al. (2003), users who have greater technology experience are less affected by outside factors because these users are more adept at practical approaches given by Venkatesh et al. (2012).

Numerous research has shown that anxiety is a significant factor that influences how people perceive the use of technology. Other studies discovered that anxiety negatively affected dimensions that resemble perceived utility. The likelihood of interacting with technology is significantly higher for those who are less technology phrenics than for those who are more anxious or technology-phobics. Davis et al. (1989) recommended that future research look at the variables influencing anxiety. Thus, the study's suggested hypotheses is as follows:

H10 : Experience will moderate the relationship between SN and BI towards the ed tech platforms.

H11 : Computer anxiety will moderate the relationship between PU and BI towards the ed tech platforms.

5. RESEARCH METHODOLOGY

5.1. Instrument Development and Sample

This research used quantitative research in which the questionnaire was developed based on GETAMEL in addition to experience and anxiety as moderator constructs. The questionnaire consists of two parts: (1) Demographic information and (2) Thirty-one items related to eight constructs: SN, enjoyment, SE, PU, PEOU, BI, experience, and anxiety. In this research, SN, enjoyment, and SE reflect independent constructs and experience & anxiety as moderators.

The questionnaire items were measured using a five-point Likert scale in which 1 showed "Strongly Disagree" and 5 showed "Strongly Agree" and the scale items demonstrated high consistent reliability. A total of 28 items were taken from Davis (1989); Venkatesh & Davis (2000); Venkatesh & Bala (2008); Abdullah et al. (2016) & Chang, C. T., Hajiyev, J., & Su, C. R. (2017).Subsequently, the questionnaire was distributed using Google form electronically to the targeted respondents. The data collected from respondents was 427 responses which was sufficient as the predicted value using G Power (Effect size=0.5, alpha value=0.05 and Beta value = 0.80 and ratio is 1 given by Cohen, 1988) was 128 indicated at responses.

5.2. Data Collection:

In this investigation, 427 respondents' replies were gathered, and the researcher used a multivariate statistical tool called partial least square structural equation modeling (PLS-SEM) to evaluate the data. A non-parametric method called PLS-SEM was used to explain the variance in latent dimensions. Here, the complex model generated in this work was analyzed using the PLS-SEM technique (version 4), which captures both direct and indirect effects.

6. Results and Discussion:

6.1. Demographic Profiles

This study shows the demographic characteristics of 427 respondents. Most (75.4%) of the users were female, and 24.6% were male. 73.8% were aged between 18-21 years old. 85.2% of the respondents were undergraduate and 14.8% were postgraduate. The data analysis was done based on model evaluation in two ways : The Outer "Measurement Model (Outer Model)", to measure the reliableness & validation of the related factors, and the "Structural (Inner) model" to test hypotheses given by Ramayah et al. (2018)& Hair et al. (2019).

6.2. "Outer Measurement Model"

Hair et al. (2019) explained various statistical measures to calculate the reliability and validity of the related constructs in the study. Various statistical measures like "Convergent validity (CV), discriminant validity (DV), composite reliability (CR), and internal consistency reliability (Cronbach's alpha)" help in determining the reliability and validity. Additionally, all factors had minimal threshold values according to this study, and It is recommended that each item's standardized factor loadings exceed 0.7. These findings provide evidence that all study dimensions are at a satisfactory and dependable level. The AVE value which is the minimal level of acceptability deemed sufficient for convergent validity, must thus be greater than 0.5 to ascertain the convergent validity.

A study conducted by Leguina (2015) suggested the three main criteria to calculate whether a scale has threshold discriminant validity which includes the "cross-loading matrix", the "Fornell-Larcker criterion" and the "Heterotrait-Monotrait ratio (HTMT)".To ascertain the "Discriminant validity", each latent unobserved construct's outer loading should exceed than the cross-loading, as indicated in Table-3. The table demonstrates that high "discriminant validity" is present because the diagonal value of "AVE" (bold) is bigger than the

Table-2 : Analysis of the "Outer Measurement Model"

Items	Outer loadings	Cronbach's alpha	Composite reliability (rho_c)	AVE
SNs				
1. SN1 <- 01 SN	0.946	0.878	0.942	0.891
SN2 <- 01 SN	0.942			
Enjoyment				
2. ENJ 1 <- 02 ENJ	0.922	0.921	0.95	0.863
ENJ2 <- 02 ENJ	0.936			
ENJ3 <- 02 ENJ	0.929			
SE				
3. SE1 <- 03 SE	0.877	0.851	0.91	0.771
SE2 <- 03 SE	0.881			
SE3 <- 03 SE	0.876			
PU				
4. PU1 <- 04 PU	0.915	0.965	0.972	0.852
PU2 <- 04 PU	0.919			
PU3 <- 04 PU	0.928			
PU4 <- 04 PU	0.936			
PU5 <- 04 PU	0.929			
PU6 <- 04 PU	0.911			
PEOU				
5. PEOU1 <- 05 PEOU	0.889	0.956	0.965	0.821
PEOU2 <- 05 PEOU	0.918			
PEOU3 <- 05 PEOU	0.907			
PEOU4 <- 05 PEOU	0.909			
PEOU5 <- 05 PEOU	0.914			
PEOU6 <- 05 PEOU	0.899			
Experience				
6. EXP1 <- 06 EXP	0.91	0.932	0.951	0.831
EXP2 <- 06 EXP	0.914			
EXP3 <- 06 EXP	0.921			
EXP4 <- 06 EXP	0.9			
Computer anxiety				
7. CA1 <- 08 CA	1			
BI				
8. BI1 <- 06 BI	0.909	0.89	0.932	0.819
BI2 <- 06 BI	0.905			
BI3 <- 06 BI	0.902			
Moderators				
08 CA x 04 PU -> 08 CA x 04 PU	1			
07 EXP x 01 SN -> 07 EXP x 01 SN	1			

Source : Author created using Smart PLS v.4.1.0.3.

Table-3 : Factor Cross Loadings

	01. SN	02. ENJ	03. SE	04. PU	05. PEOU	06. BI	07. EXP	08. CA	07. EXP x 01. SN	08. CA x 04. PU
BI1	.653	.649	.574	.694	.673	**.909**	.652	.513	-.267	-.327
BI2	.638	.641	.525	.68	.671	**.905**	.603	.451	-.278	-.338
BI3	.589	.631	.487	.711	.666	**.902**	.635	.437	-.294	-.263
CA1	.437	.488	.505	.508	.558	.516	.602	**1**	-.318	-.249
ENJ1	.592	**.922**	.574	.683	.711	.664	.697	.493	-.33	-.332
ENJ2	.644	**.936**	.533	.684	.7	.658	.684	.466	-.308	-.305
ENJ3	.605	**.929**	.517	.668	.67	.649	.663	.4	-.306	-.3
EXP1	.535	.69	.501	.629	.631	.637	**.91**	.592	-.466	-.409
EXP2	.519	.634	.487	.63	.641	.628	**.914**	.58	-.499	-.423
EXP 3	.504	.661	.518	.642	7	.645	**.921**	.534	-.45	-.381
EXP4	.539	.69	.515	.635	.648	.627	**.9**	.489	-.417	-.357
PEOU1	.593	.642	.545	.68	**.889**	.652	.646	.536	-.299	-.298
PEOU2	.606	.686	.545	.705	**.918**	.691	.646	.517	-.312	-.313
PEOU3	.601	.689	.538	.667	**.907**	.662	.642	.459	-.338	-.27
PEOU4	.619	.664	.548	.664	**.909**	.668	.622	.482	-.283	-.236
PEOU5	.614	.69	.525	.689	**.914**	.683	.653	.548	-.329	-.315
PEOU6	.611	.69	.559	.694	**.899**	.668	.636	.495	-.352	-.28
PU1	.614	.691	.541	**.915**	.727	.724	.662	.488	-.291	-.336
PU2	.571	.672	.472	**.919**	.71	.687	.647	.465	-.319	-.363
PU3	.584	.656	.498	**.928**	.709	.704	.606	.467	-.289	-.329
PU4	.602	.683	.514	**.936**	.676	.706	.64	.459	-.347	-.357
PU5	.613	.669	.522	**.929**	.685	.718	.637	.459	-.307	-.351
PU6	.586	.673	.518	**.911**	.667	.71	.659	.476	-.347	-.388
SE1	.469	.528	**.877**	.465	.517	.522	.492	.455	-.199	-.224
SE2	.451	.504	**.881**	.502	.521	.498	.503	.42	-.194	-.243
SE3	.473	.504	**.876**	.49	.539	.521	.466	.455	-.212	-.283
SN1	**.946**	.626	.515	.61	.615	.673	.558	.417	-.184	-.282
SN2	**.942**	.621	.484	.607	.651	.634	.527	.408	-.187	-.256
07. EXP x 01. SN	-.196	-.34	-.23	-.343	-0.352	-.309	-.502	-.318	**1**	.576
08. CA x 04. PU	-.285	-.34	-.285	-.383	-0.315	-.342	-.431	-.249	.576	**1**

Source : Author created using SMART PLS v.4.1.0.3.

inter-variable correlation coefficient.According to Fornell and Larcker (1981), all of the constructs in Table-4 demonstrate sufficient or satisfactory discriminating validity, provided that the root-squared of "AVE" (diagonal) is higher than the correlations of every reflective construct. Thus, the "Fornell-Larcker criterion" is satisfied by this study. Next, researchers must compare with a threshold of either 0.85 or 0.90 to evaluate discriminant validity using HTMT (Henseler et al., 2015). HTMT should have a value less than 0.85 or 0.90. The HTMT result value displays a satisfactory value, as indicated in Table 5. Thus, this study validates the model.

Table-4 : Fornell-Larcker Criterion

	01. SN	02. ENJ	03. SE	04. PU	05. PEOU	06. BI	07. EXP	08. CA
01. SN	**0.944**							
02. ENJ	0.66	**0.929**						
03. SE	0.529	0.583	**0.878**					
04. PU	0.645	0.73	0.554	**0.923**				
05. PEOU	0.67	0.747	0.599	0.754	**0.906**			
06. BI	0.693	0.707	0.585	0.767	0.74	**0.905**		
07. EXP	0.575	0.734	0.555	0.696	0.707	0.696	**0.911**	
08. CA	0.437	0.488	0.505	0.508	0.558	0.516	0.602	**1**

Source : Author created using SMART PLSv.4.1.0.3.

Table-5 : HTMT Results

	01. SN	02. ENJ	03. SE	04. PU	05. PEOU	06. BI	07. EXP	08. CA	07. EXP x 01. SN	08. CA x 04. PU
01. SN										
02. ENJ	0.734									
03. SE	0.612	0.658								
04. PU	0.7	0.774	0.61							
05. PEOU	0.732	0.795	0.664	0.785						
06. BI	0.783	0.781	0.671	0.828	0.802					
07. EXP	0.636	0.792	0.623	0.733	0.749	0.764				
08. CA	0.466	0.508	0.547	0.517	0.571	0.547	0.624			
07. EXP x 01. SN	0.21	0.353	0.249	0.349	0.36	0.327	0.521	0.318		
08. CA x 04. PU	0.304	0.35	0.309	0.39	0.322	0.362	0.446	0.249	0.576	

Source : Author created using SMART PLS v.4.1.0.3.

6.3. Structural Inner Model

This work used the bootstrapping analysis approach to find the path coefficients of the structural equation model for statistical significance assessment. The conclusion of the analysis, which are displayed in Table 6, indicates that anxiety has an insignificant relationship with BI, while SNs, PU, PEOU, and experience were found to have a significant relationship with BI of using ed tech platforms (beta values: 0.23, 0.334, 0.19, and 0.185). Similarly, it was discovered that three variables—subject norm, enjoyment, and PEOU—were highly correlated with PU, whereas SE was the only variable that showed no correlation with PU. Next, there is a strong correlation between PEOU and enjoyment and SE. Furthermore, there is no moderating effect of anxiety between PU and BI, similarly, no moderating effect of experience on the relationship between SNs and BI.

Table-6 : Study Testes Hypotheses

	Original sample	Sample mean	Standard deviation	T statistics (|O/STDEV|)	P values	Results
SN -> 04 PU	0.15	0.152	0.041	3.624	0.000	Accepted
SN -> 06 BI	0.23	0.228	0.05	4.578	0.000	Accepted
ENJ -> 04 PU	0.303	0.303	0.06	5.022	0.000	Accepted
ENJ -> 05 PEOU	0.602	0.603	0.048	12.678	0.000	Accepted
SE -> 04 PU	0.065	0.064	0.045	1.435	0.151	Not Accepted
SE -> 05 PEOU	0.248	0.248	0.049	5.045	0.000	Accepted
PU -> 06 BI	0.334	0.334	0.057	5.904	0.000	Accepted
PEOU -> 04 PU	0.388	0.387	0.059	6.591	0.000	Accepted
PEOU -> 06 BI	0.19	0.192	0.063	2.99	0.003	Accepted
EXP -> 06 BI	0.185	0.183	0.05	3.684	0.000	Accepted
CA -> 06 BI	0.035	0.035	0.037	0.924	0.356	Not Accepted
EXP x 01 SN -> 06 BI	0.025	0.026	0.032	0.777	0.437	Not Accepted
CA x 04 PU -> 06 BI	-0.017	-0.017	0.035	0.471	0.637	Not Accepted

Source : Author created using SMART PLS v.4.1.0.3.

Figure-2 : MM (Outer) Model Result

Figure-3 : Structural (Inner) Model Result
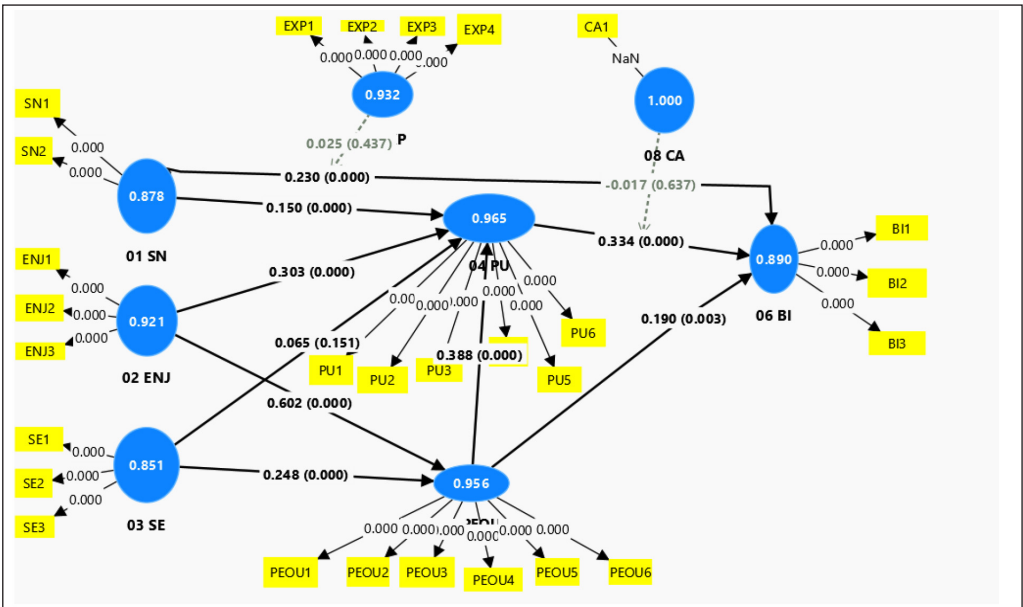
6.4. Importance-Performance Map Analysis (IPMA)

IPMA is a development of the outcomes or discoveries of Smart PLS, which works with scores of latent variables. IPMA is a two-dimensional, four-quadrant matrix that has two axes: performance (index value) on the y-axis, which ranges from 0 to 100, and importance/total effect on the X-axis, whose values are 0 to 100. According to IPMA, if the plotted result indicates low performance and high importance, significant areas for improvement must be determined. Ramayah et al. (2018) state that IPMA is divided into four quadrants. "High importance-high performance (Keep up the good job)" is displayed in Quadrant 1, Quadrant 2 says "High importance-low performance (Concentrate here)", which outlines the essential components for improvements, and "low importance-low performance (Low priority)" in Quadrant 3. Quadrant 4 advises investing in another field since it states "low importance-high performance (Possible overkill)". The data set of students who use Edtech platforms was employed in this study to illustrate IPMA. The primary construct in this case is BI and all other constructs are latent variables which uses IPMA to ascertain how other latent constructs will respond to BI. Table-7 presents the IPMA assessment, whereas Figure-5 shows the IPMA analysis for the major latent constructs. The latent constructs of anxiety, experience, and SE performed well but were not significant important variables for BI, as shown by Figure-5, which illustrates the IPMA of BI. Therefore, Edtech platforms shouldn't concentrate on these constructs because they may be overkill in the market when examining their impact on BI. Improve the influence on BI by concentrating on the SNs construct, which is significant in the business. Furthermore, there was a high degree of significance (importance) and high performance for the other three latent constructs, which are perceived utility, enjoyment, and ease of use. Therefore, Edtech businesses should so concentrate on this sector as "Keep up the good work" area.

Figure-4 : Importance-Performance Matrix Analysis (IPMA)
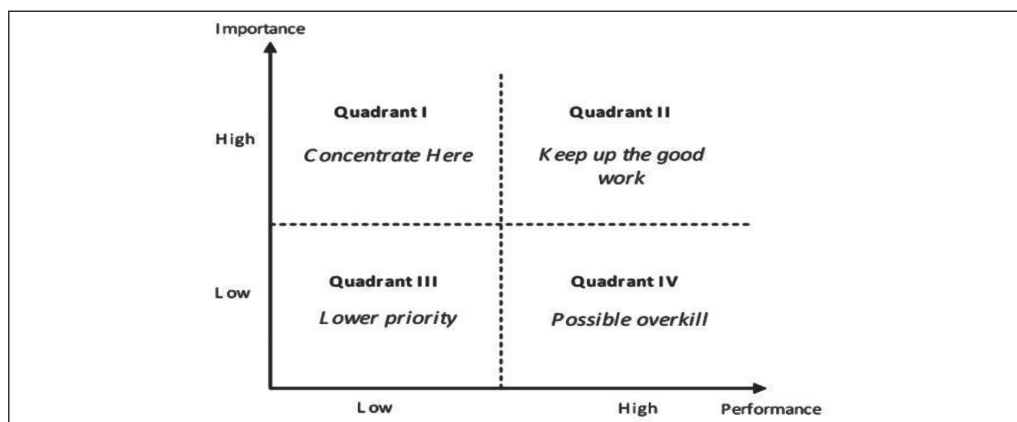
Source : IPMA Grid (Martilla and James, 1977).

Figure-5 : Importance-Performance Map Analysis Full Data Set
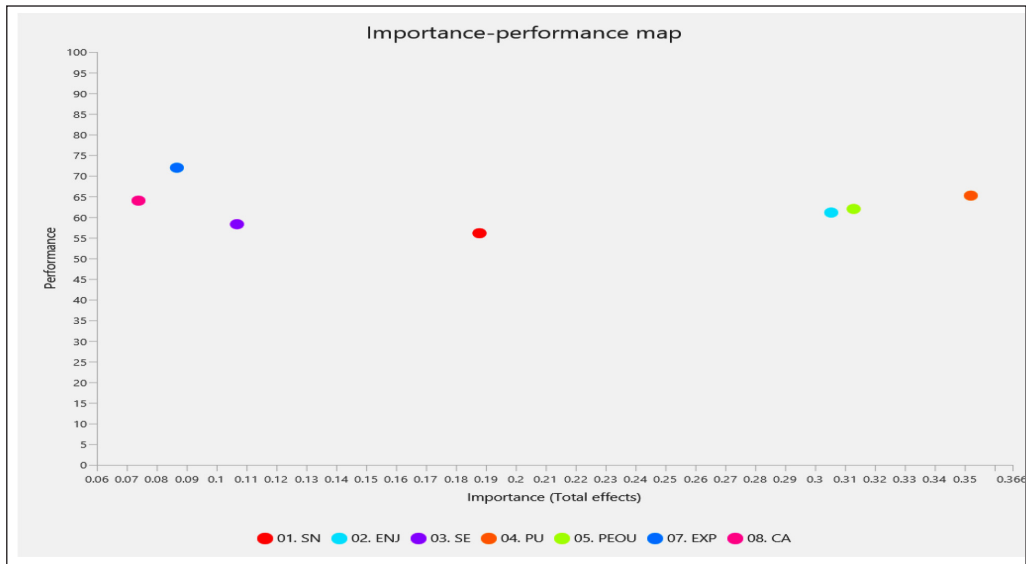
Source : Author created using SMART PLS v.4.1.0.3.

Note : Red: SNs; sky blue: enjoyment; purple: SE; orange: PU; green: PEOU; blue: experience; and pink: computer anxiety.

Table-7 : Importance -Performance Map Analysis Results Full Data Set

Latent Variable	BI	
	Importance (Total Effect)	**Performance (Index Value)**
SN	0.188	56.107
ENJ	0.305	61.108
SE	0.106	58.286
PU	0.352	65.209
PEOU	0.313	61.983
EXP	0.086	71.966
CA	0.074	63.993

Source : Author created using SMART PLS v.4.1.0.3.

7. Conclusion

This research was performed to explore the impact of the five constructs on BI to adopt Edtech platforms among online learning students in Delhi-NCR and to determine the moderating effect of experience and computer anxiety. This study used "Structural equation modeling using Smart PLS 4" i.e. version 4 analysis which demonstrated that there was a direct favorable impact of SNs, PU, PEOU, and experience on their BI towards adoption of online Edtech platforms (H1; H2; H3; H4; H6; H7; H8; H9; H10 are supported). However, the hypotheses H5, H12, H13, and H11 were not in line respectively. This means that SE had no favorable impact on PU and computer anxiety had no favorable impact on BI to adopt Edtech platforms. Additionally, the results confirmed that the moderator effect were found to be insignificant. So, the findings supported the hypotheses H1; H2; H3; H4; H6; H7; H8; H9; H10 respectively. This means that experience and anxiety has inability to change the effect of other constructs in the study on BI of students towards Edtech platform adoption. Furthermore, the IPMA findings indicated that three constructs—PU, PEOU, and enjoyment—fall into the high importance-high performance category. As a result, Edtech platforms should continue to perform well on these three constructs in order to encourage positive BI toward Edtech platform adoption. However, in order to increase platform acceptance, Edtech companies need to make improvements in the areas of experience, anxiety, SNs, and SE. The Importance-Performance Map Analysis results make it abundantly evident that Edtech platforms must take the required actions to satisfy social expectations that users would engage in a specific behavior. IPMA states that while the performance index values for these constructions are good, the importance values are poor. As a result, Edtech platforms must strengthen their position by refining their approaches to these concepts.

Limitations and Implications

There are some limitations to this research that the researcher has noted. This investigation was completed in a short amount of time. This study is intended to address the diversity of platform users; that is, it is based on the responses of a combination of users from all three generation groups (Gen Y, Gen Z, and Gen Alpha). If, on the other hand, the researcher were to obtain responses solely from tech-savvy members of Generation Z and Gen Alpha, the conclusions would differ from the current findings. Therefore, the study's outcome is dependent on how proficient people are with computers.

The findings carry significant implications for researchers, particularly with regard to SNs, enjoyment, and SE, and their correlation with BI to embrace Edtech

platforms, PU, and PEU. This research adds to the corpus of research on experience, anxiety, and how it affects BI. It has been shown that there is a paucity of research on the moderating role that anxiety and experience have on BI toward the adoption of Edtech platforms. The study's conclusion demonstrates that the moderators have little bearing on BI. Researchers can use this moderator and other moderators to examine their moderating effect on BI towards adoption of Edtech platforms. This study closes a critical research gap by extending the GETAMEL model. The findings also suggest to educators that additional work has to be done to strengthen the sections on experience, anxiety, and SE in order to improve the outcomes.

This study examines the relationship between a number of independent variables and students' BI to adopt Edtech platforms. It finds that SNs, PU, and PEOU are significantly correlated with BI, indicating that Edtech platforms will influence users' BI if they meet their social expectations and offer a simple, effort-free system that will improve performance. Experience and anxiety have little bearing on BI in terms of moderation analysis. This indicates that user experience has no moderating effect between SNs and BI, i.e., user behavior toward Edtech adoption is influenced by social expectations, while user experience has no moderating effect on user behavior toward Edtech platform adoption. The perception of a user that believes using a system will improve their job productivity or performance is strongly correlated with their BI for Edtech adoption, but computer or technology anxiety has no moderating influence on users' adoption behavior. Similarly, anxiety of students towards computer or technology access has no moderating influence between PU and BI of users for the adoption of Edtech platforms. Anxiety, experience and SE have low important values with high performance values in the importance-performance map analysis; hence, Edtech platforms should focus on these components to enhance their performance.

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Annexure : List of Abbreviations

S. No.	Abbreviated Form	Full Form
1.	TAM	Technology Acceptance Model
2.	GETAMEL	General Extended Technology Acceptance Model for electronic-Learning
3.	IPMA	Importance -Performance Matrix Analysis
4.	Edtech	Education-Technology
5.	BI	"Behavioral Intention"
6.	SN	"Subjective Norm"
7.	PU	"Perceived Usefulness"
8.	P EOU	"Perceived Ease of Use"
9.	SE	Self-Efficacy
10.	AVE	Average Variance extracted

Assessing the Adoption Behavior of Consumers towards Online Pharmacy Applications Role of E-Health Literacy

RASHMI GOEL AND SHWETA

Abstract : *Several businesses have resorted to the Internet market in response to the recent global epidemic. In India, one such vital sector is the pharmaceutical business. Online pharmacies are gaining popularity due to their convenient doorstep delivery and significant medication discounts. Therefore, the purpose of this study is to evaluate the variables affecting internet pharmacies in India.A model was presented for the study based on the factors of the Technology Acceptance Model (TAM), expanded by including e-health literacy and self-efficacy. A sample of 274 respondents was used to verify the model by examining the connections between the several identified components using structural equation modelling.The finding shows that e-health literacy is a significant factor in influencing the perceived ease to use, self-efficacy, and usage behavior of online pharmacies. Self-efficacy and perceived usefulness are significant partial mediators influencing the association between e-health literacy and intention to use. There is an insignificant correlation between perceived ease of use and intention to use. The originality of the paper lies in the inclusion of e-heath literacy to explore the adoption behavior of online pharmacy in India, which is rarely explored in the existing literature. The study offered insightful information about online pharmacy-related consumer behavior. Managers, policymakers, etc might use these insights to design strategies that would increase the adoption of online pharmacies.*

Keywords :   Online Pharmacy, Internet Pharmacy, Mobile Health, Digital Health, Technology Adoption Model (TAM), Perceived Ease to Use, Perceived Usefulness, E-health Literacy, Self-efficacy, Adoption behavior, Intention to use.

Dr.Rashmi Goel, Assistant Professor, Department of Commerce, Shyama Prasad Mukherji College (For Women), University of Delhi. Email : rashmigoel@spm.du.ac.in

Shweta, Corresponding Author, Research Scholar, Amity College of Commerce and Finance, Amity University. Email : shwetasharma1375@gmail.com.

1. Introduction

The rise of information technology ande-commerce has impacted several facets of business and society (Metia 2024; Ngai and Gunasekaran 2007). Over 90% of internet users have made an online purchase (Ageron, Bentahar, and Gunasekaran 2020). E-commerce is being used in many commercial and social domains, and the healthcare industry is one of them. Entrepreneurs are experimenting and exploring new prospects in the healthcare industry, such as telemedicine, online pharmacies, e-prescriptions, and e-health(Crawford 2003).An online pharmacy is an online platform that enables consumers to buy prescription medications and electronic services online and receive them quickly in the convenience of their own homes(Desai 2016).Online pharmacies sell generic and non-generic medications through a website and postal delivery (Fatima, Malpani, and Sodhi 2019). People who live in rural places or have mobility impairments can benefit greatly from online pharmacies, which offer 24/7 access to pharmaceuticals and enable customers to buy from the comfort of their homes(S et al. 2024).E-pharmacies frequently provide competitive prices and numerous discounts, making medicine more reasonable for customers. Even if customers are hesitant to make transactions online, internet pharmacies are still attractive since they provide time-saving convenience, a larger selection of products, and speedy home delivery (Prashanti et al., 2017; Yang and He, 2023).

The use of E-commerce in medicine resulted in the emergence of online pharmacies in the United States in 1999. This includes selling both non-prescription and prescription-only drugs. In India, e-pharmacies like Tata 1mg and Pharm Easy have been increasingly popular, particularly after COVID-19, because of their accessibility, ease of use, and important aspects of service quality(Kumar and Patil 2024). In 2021, the pharmaceutical market in India was valued at around US$41 billion,ranking third in volume and quantity and thirteenth in value. By 2024, it is anticipated to reach US$65 billion because of several variables, including an aging population, a rise in chronic diseases, an increase in disposable income, and more awareness. (Dcruz et al. 2022). COVID-19 has had a detrimental influence on people's physical and subjective well-being (Sepúlveda-Loyola et al. 2020; Chauhan et al. 2024). It has restricted the people's mobility (Siddhey, Rubel, and Kaur 2023). At that time, online pharmacies assisted in meeting the prescription demands of patients with COVID-19 and other physical and medical diseases, led to an increase in the usage of internet pharmacies (Fittler et al. 2022). However previous studies highlighted that inadequate technology infrastructure, and a lack of public awareness hinder the adoption of any technology (Kayum and Mamgain 2024; Gunasekaran and Ngai 2004).

The importance of e-health literacy was highlighted by (Norman and Skinner 2006b). E-health literacy is the ability to find, understand, and evaluate health-related information from online sources and utilize it to identify or manage a medical issue. This literacy focuses on helping consumers use IT to enhance health and medical treatment. One of the major concerns and difficulties of the twenty-first century is thought to be health literacy. In light of this, the World Health Organization recently declared it as one of the key determinants of health. According to this organization, health literacy is the set of social and cognitive abilities required to comprehend and use information topromote and preserve health(Chang et al. 2021).Individuals with high health literacy are more likely to utilize technology, such as smartphones and the Internet, to research issues related to health and are better able to understand and evaluate the information they learn and use to improve their well-being (Rahdar et al. 2023).Governments throughout the world have been aggressively promoting e-health literacy (Chang et al. 2021). Numerous research has investigated how e-health literacy affects adoption behavior in various settings, including mobile health apps(X. Zhang et al. 2018), personalized online health services (Griebel et al. 2013), e-health services (Ramtohul 2015), electronic personal health record (Alsahafi, Gay, and Khwaji 2022), telemedicine (Alviani et al. 2023), online health communities (Q. Zhang et al. 2023). There is a scarcity of research that assesses the influence of e-health literacy on the adoption of online pharmacy services. Given the significance of eHealth literacy and to fill the existing research gap. This study aims to assess the factors associated with the adoption of online pharmacy services by extending the TAM model with e-health literacy and self-efficacy.

The format of this article is as follows: After reviewing the context and existing research on online pharmacy, and e-health literacy, the technology adoption model is discussed, and hypotheses are formulated to build the conceptual model. The review of methodology is examined in the next part, and thenthe study's findings. The Discussion part includes a detailed analysis of the findings, theoretical contributions, and their practical and policy consequences. Lastly, a separate Conclusion section wraps up the article and presents the study's shortcomings and scope for future research.

2. Literature Review

2.1. Technology Acceptance Model (TAM)

The Technology Adoption Model (TAM) is a model used to forecast user adoption of new technologies. The TAM model was established by(Fred D. Davis, Bagozzi, and Warshaw 1989), is commonly used to ensure study validity. TAM is based on Fishbein's theory, namely the "Theory of Reasoned Action". According to

TAM, a user's attitude towards utilizing technology might indicate their willingness to adopt technology(F D Davis 1985). Two major predictors for usage have been proposed: Perceived usefulness and ease to use(F D Davis 1985; Fred D. Davis 1989).

Perceived utility (PU) evaluates how technology makes desired services more accessible to users. It is the extent to which a person's faith in technology may grow and improve its effectiveness and functionality (Limna, Kraiwanit, and Jangjarat 2023). Perceived ease of use refers to a user's readiness to use a system that requires no effort on their part. The phrase "easy to use" describes the degree of comprehension difficulty and usage time (Sitthipon et al. 2022). A technology is more likely to be used if it is viewed as being simple to use (Prastiawan, Aisjah, and Rofiaty 2021). According to(Woodeson 2022)., both usefulness and convenience of use have a positive influence and are significant determinants of a user's behavioral intention.

TAM can successfully explain variations in how people use technology in various contexts, encompasses mobile services (Muflih 2023), eHealth records (EHRs) (Khor et al. 2023), mobile banking (Suhartanto et al. 2020), telemedicine (Jang 2023), AI-based teacher bots (Pillai et al. 2024), telemonitoring tools (Asua et al. 2012), digital payments (Srivastava, Mohta, and Shunmugasundaram 2024), electric vehicles (Adu-Gyamfi et al. 2024), and assistive technology (Shore, de Eyto, and O'Sullivan 2022; Opoku et al. 2023)

TAM also has the same drawbacks as other models of technology adoption, the first of which is that it relies on other variables to gauge people's attitudes. TAM has often been used extensively to look at internal motives as opposed to external ones because it focuses on the results of IT use. Since the use process has been mainly disregarded, it is imperative that the model incorporate external factors. Thus, the adoption of online pharmacy might be explained by a TAM extension that includes additional variables. To expand TAM, this study took E-health literacy and self-efficacy into consideration.

Figure-1 : Tam's Original Model
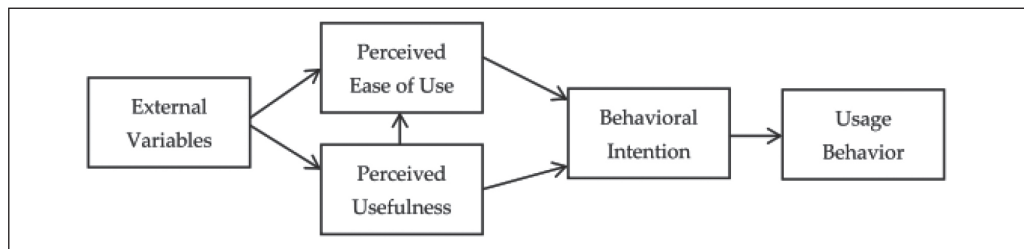
Source : (Fred D. Davis 1989).

3. Hypothesis Formation

3.1. Perceived Usefulness

Perceived usefulness (PU) demonstrates how someone feels that utilizing technology will enhance their capacity to complete their work. According to this concept, perceived usefulness refers to an individual's conviction while choosing choices (Putri, Widagdo, and Setiawan2023). PU is one of the primary factors influencing technology adoption, according to TAM research (Chen 2019; Guo et al. 2023). Therefore, it is anticipated that a major factor in determining whether systems are adopted would be their perceived utility. Previous research of this caliber has validated the crucial function of perceived usefulness in predicting the adoption of wearable devices (Noor, Katheeth, and Noor 2024), mhealth (To et al. 2019), online traveling services (T. Li and Zhu 2023), AI-based chatbots (B. Li et al. 2023). Perceived usefulness has also been found as significant mediator affecting the relationship between external variables and intention (Panergayo and Aliazas 2021). The following hypotheses are presented in this regard:

H1a : The usage intention of online pharmacy is significantly influenced by PU

H1b : PU mediates the connection between usage intention and e-health literacy.

3.2. Perceived Ease to Use

Perceived ease of use (PEOU) indicates a people's belief that utilizing technology would be trouble-free and user-friendly (Putri, Widagdo, and Setiawan 2023). According to this study, PEOU implies to a user's perception that using online pharmacy apps requires no mental or physical effort. In general, studies in the literature on the association between PEOU and the desire to use any technology supported it (Alanazi and Alenazi 2023; Putu and Wijaya 2021; Rumangkit, Surjandy, and Billman 2023; Anam and Haque 2023). PEOU was also found to have a substantial impact on PU and the desire to use online personal health record systems. (C. F. Liu, Tsai, and Jang 2013). PEOU has also been found a significant mediator affecting the relationship between external variables and intention (C. Kim, Hwang, and Cho 2015; Panergayo and Aliazas 2021). Regarding this, the following possibilities are presented.

H2a : The usage intention online pharmacy is significantly influenced by PEOU.

H2b : PEOU significantly influenced PU

H2c : Perceived ease to use mediates the relationship between e-health literacy and usage intention.

3.3. Self-Efficacy

Self-efficacy is a user's subjective assessment of their own abilities or self-perception, and it may have a big impact on their desire to adopt (Shiferaw and Mehari 2019). According to research by (De Veer et al. 2015) elders' inclination to utilize eHealth applications is significantly predicted by their level of self-efficacy. Numerous research have demonstrated the strong influence of self-efficacy on perceived usability, which in turn affects use intention (Shiau et al. 2020; Usman et al. 2021). People who have poor self-efficacy are less likely to use mHealth services because they believe that they are more difficult to use. Users will see online healthcare services favorably and think that using these services has made their lives more convenient if they believe they are capable of using them (Y. Liu et al. 2022). A study by (Soetanto, Proboyo, and Putri 2020) found that self-efficacy significantly influences adoption intention through perceived ease to use but not with perceived usefulness in the context of e-commerce, while (Khan et al. 2023) perceived ease to use is the insignificant mediator between self-efficacy and intention to use e-learning (Khan et al. 2023). Self-efficacy also serves as a significant mediator affecting the association between various factors and intention (J. W. Wang et al. 2011; Hou et al. 2022). A study by (Shang and Zuo 2020) states that Self-efficacy, which has a favorable impact on older persons' desire to study health information on social media, is strongly predicted by e-health literacy. Consequently, this study proposes the following hypothesis.

H3a : Intention to utilize is significantly impacted by self-efficacy.

H3b : The influence of self-efficacy on PEOU is substantial.

H3c : The relationship between usage intention and e-health literacy is mediated by self-efficacy.

3.4. E-health Literacy

EHealth literacy is the ability to find, understand, and evaluate health-related information obtained from electronic sources and use this knowledge to solve

physical health issues (M. Zhang et al. 2023; Norman and Skinner 2006b). It has been suggested that eHealth literacy has a positive impact on people's motivation to utilize mHealth (Sun et al. 2022). According to (Schrauben et al. 2021)'s study, e-health literacy has a significant influence on perceived ease to use and perceived usefulness. Additionally, (M. Zhang et al. 2023) has also confirmed this relationship in the context of digital disease management applications. Research has also indicated a potential correlation between eHealth literacy and self-efficacy. A person with lower levels of eHealth literacy had a harder time finding, evaluating, and using online health information, which might impact their confidence and motivation to adopt healthier habits (Pourrazavi et al. 2020). According to (K. A. Kim, Kim, and Choi 2018), who examined how type 2 diabetes patients comprehended and applied online health information for health promotion behavior, eHealth literacy had a significant impact on self-efficacy. We proposed the following hypothesis based on the above arguments.

H4a : eHealth literacy significantly influences the perceived usefulness

H4b : eHealth literacy significantly influences the perceived ease of use

H4c : eHealth literacy significantly influences the self-efficacy.

H4d : eHealth literacy significantly influences the intention to use

Figure-2 : Conceptual Model of the Study
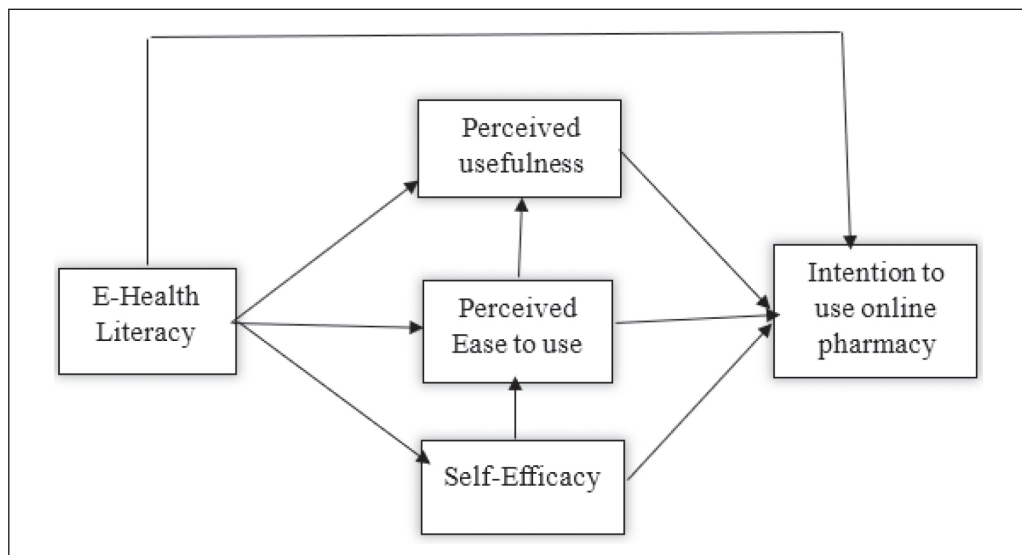
4. Methodology

This study is cross-sectional, and the samples were quantified and analyzed using a structured questionnaire.For the scale development for the questionnaire, prior pertinent research was used. The items used to evaluate PU, PEOU, and use intention were provided by (Kamal, Shafiq, and Kakria 2020). Scales created by (Norman and Skinner 2006a) and (Alam et al. 2020) were used to assess e-health literacy and self-efficacy respectively. A five-point rating system (ranging from "strongly disagree" to "strongly agree") was used to gauge the results of our survey, which was designed in the English language. We employed purposive sampling. The survey form was floated to different social media platforms such as WhatsApp, Instagram, LinkedIn, Facebook, etc. to ensure the familiarity of respondents with internet and smartphone usage. We used the Partial Least Squares (PLS) approach and the Structural Equation Modeling (SEM) framework to analyze data collected from 274 individuals. This method allowed to investigate and comprehend the connections suggested by the proposed model of this study.

5. Data Analysis

5.1. Measurement Model

For each construct, the reliability of the measurement model was evaluated using Cronbach's alpha (CA) and composite reliability (CR). It is necessary for the CA and CR values to surpass the 0.70 threshold (Rahi, Khan, and Alghizzawi 2021). The scale's internal dependability is satisfied as Table-I demonstrates that both the CA and CR values are higher than the suggested value. According to (Joseph F Hair et al. 2010) factor loading levels ought to be more than 0.60. The loading values in the table are more than 0.6 which satisfies indicator reliability. Convergent and discriminant validity have been used to assess the validity. To indicate sound convergent validity, the Average Variance Extracted (AVE) value must be more than 0.5 (Fornell and Larcker 1981). Strong convergent validity is demonstrated by the model since the AVE value varies from 0.608 to 0.764.

"Fornell and Larcker criteria" and HTMT (Heterotrait-Monotrait) technique are used to evaluate the discriminant validity of the construct. According to the Fornell-Larcker criterion, as shown in Table-II, the square root of Average Variance Extracted (AVE) values must be greater than the corresponding correlation values (Fornell and Larcker 1981). The method used by Fornell and Larcker to evaluate discriminant validity has several shortcomings. The results

Table-I : Measurement Model Results

Latent Variables	Factors	Loadings	CA	CR	AVE
Perceived Usefulness	PU1	0.864			
	PU2	0.889			
	PU3	0.853	0.808	0.886	0.722
Perceived Easy to use	PEOU1	0.719			
	PEOU2	0.868			
	PEOU3	0.879	0.711	0.866	0.764
Self-Efficacy Trust	SE1	0.771			
	SE2.	0.854			
	SE3	0.788			
	SE4	0.697	0.784	0.861	0.608
E-health Literacy	EHL1	0.865			
	EHL2	0.873			
	EHL3	0.864	0.835	0.901	0.752
	UI1	0.833			
Usage	UI2	0.880			
Intention	UI3	0.845	0.812	0.889	0.727

Source : Author's computation.

of the study thus highlight the importance of using the HTMT (Heterotrait-Monotrait) technique along with the Fornell and Larcker criteria, which is the most reliable method to assess discriminant validity. It is advised that the HTMT value stays below 0.85 to provide reliable results.This threshold minimizes the possibility of arbitrary violations or false positives while maintaining a high degree of accuracy (Voorhees et al. 2016). Table-III demonstrates that every HTMT ratio value is less than 0.85, as advised by earlier researchers. Therefore, the measurement model validated the scale's validity and reliability. Consequently, the model's construct may be used to test the hypotheses and assess the structural model.

Table-II : Fornell-Larcker Criteria

Constructs	EHL	IU	PEOU	PU	SE
EHL	0.867				
IU	0.580	0.853			
PEOU	0.480	0.418	0.874		
PU	0.431	0.526	0.526	0.850	
SE	0.550	0.605	0.550	0.545	0.780

Table-III : Heterotrait-Monotrait

Constructs	EHL	IU	PEOU	PU	SE
EHL					
IU	0.703				
PEOU	0.630	0.559			
PU	0.524	0.645	0.706		
SE	0.677	0.756	0.733	0.676	

Source : Ibid.

5.2. Structural Model

The structural model is primarily used to evaluate the model's explanatory power, path coefficients, correlations between variables, and lateral multicollinearity. One useful metric for assessing if lateral multicollinearity exists within the concept is the Variance Inflation Factor (VIF). VIF needs to be below 3.3, as specified by (Hadji and Degoulet 2016). Multicollinearity is not a serious issue, in this study as shown by the VIF values in Table-IV.

Table-IV : Assessing the Internal Multicollinearity of the Constructs (VIF)

Constructs	UI	PEOU	PU	SE
EHL	1.554	1.435	1.000	1.000
PEOU	1.673			
PU	1.611			
SE	1.858	1.435		

Source : Ibid.

To identify the relationships between the key elements of our model, we performed a bootstrapping analysis at a significance level of 0.05. The test's result is illustrated in Table-V. The findings make it clear that perceived usefulness, self-efficacy, and e-health literacysignificantly influencethe intention to use online pharmacy. As a result, we have verified H1, H3a, and H4d. Additionally, by examining the relationship of E-health literacy with perceived usefulness, perceived ease to use, and self-efficacy, our findings support the validation of Hypothesis H4a, H4b, and H4c. Furthermore, the impact of Self-efficacy on PEOU and PEOU on PU was found to be significant. Therefore, supporting H2b and H3b. The association between PEOU and usage intention was insignificant. Thus, H2a is not supported.

We conducted mediation analysis using bootstrapping, adhering to the concepts of (Baron and Kenny 1986). The results corroborate hypotheses H1b and H3c by highlighting the critical role that perceived usefulness and self-efficacyplay as major mediators in the relationship between eHealth literacy and intention to use. While H2c was not supported implies a perceived ease to use does not mediate the relationship between eHealth literacy and usage intention (Table-VI).

Table-V : Test Results of Hypothesis

Hypothesis	Connections	Path coefficient	Standard deviation	T-value	p-values	Findings
H1	PU -> IU	0.231	0.062	3.676	0.000	Accepted
H2a	PEOU -> IU	0.031	0.067	0.483	0.629	Not Accepted
H2b	PEOU -> PU	0.417	0.069	6.038	0.000	Accepted
H3a	SE -> IU	0.320	0.074	4.328	0.000	Accepted
H3b	SE -> PEOU	0.410	0.067	6.090	0.000	Accepted
H4a	EHL -> PEOU	0.256	0.073	3.468	0.001	Accepted
H4b	EHL -> PU	0.232	0.071	3.247	0.001	Accepted
H4c	EHL -> SE	0.551	0.052	10.558	0.000	Accepted
H4d	EHL -> IU	0.318	0.072	4.441	0.000	Accepted

Table-VI : Mediation Analysis

Hypotheses	Relationship	Path coefficient	Lower Bound	Upper bound	P values	Decision
H1b	EHL -> SE -> IU	0.176	0.045	3.915	0.000	Partial Mediation
H2c	EHL -> PEOU -> IU	-0.007	0.018	0.462	0.644	No Mediation
H3c	EHL -> PU -> IU	0.054	0.023	2.263	0.024	Partial Mediation

Source : Ibid.

The coefficient of determination (R2) shows how well our research model explains the relationships between the variables. According to our research, all the factors of this study account for 52.5% of the variance in usage intention prediction. According to the evaluation by (Joe F. Hair et al. 2014) these outcomes demonstrate the robust explanatory capacity of our suggested model. In addition to this evaluation, the model's prediction power was thoroughly tested using the blindfolding procedure Q^2. As stated by (Joseph F. Hair et al. 2019). A score higher than 0.35 indicates considerable predictive relevance. The results (Table-VII) show that the suggested model predicts usage intention effectively. Model fit was evaluated using NFI, which should be more than 0.8 (Sleimi and Emeagwali 2017). The results show that 0.802 is the NFI value.

Table-VII : Displays the Coefficient of Determination and Predictive Relevance

Constructs	R^2	Adjusted R^2	Q^2
Usage Intention	0.487	0.479	0.358

Source : Ibid.

6. Discussion

This study explores the tendency to use online pharmacies in India. Technology Acceptance methodology (TAM) is a proven and trustworthy research methodology to predict consumer acceptance and uptake of health-related

technologies (Holden and Karsh 2010). In this study, the TAM model is used to predict the acceptance of online pharmacy. The results have confirmed all the anticipated relationships among various variables except H2a and H2c. Notably, the inclination to adopt is directly and favourably impacted by perceived usefulness toward usage.These findings align with those of previous research in a different context (Z. Zhang, Xia, and Huang 2022; Noor, Katheeth, and Noor 2024), mhealth (Y. Li et al. 2022), online traveling services (T. Li and Zhu 2023), AI-based chatbots (B. Li et al. 2023). This implies that patients are more inclined to use online pharmacy apps if they think that these applications can help them manage their health condition. This emphasizes the need for online pharmacy app developers to carefully improve application functionalities and match them with patients' needs for efficient illness management. Whereas perceived ease of use insignificantly influences the desire to use online pharmacies. (Jewer 2018) supports the finding of an insignificant relationship between EE and behavioral intention towards online health services. One potential explanation for this discrepancy could be attributed to the demographic composition of our sample, primarily consisting of well-educated and young people. This group possesses a strong familiarity with digital devices and their applications in healthcare (Alam and Khanam 2022; Hsieh 2016). As a result, they did not encounter significant challenges in using online pharmaceutical services. Another plausible reason could be that when users perceive substantial benefits in using these services, they are more willing to invest effort in acquiring new technological skills and embracing change

Additionally, e-health literacy is a significant factor affecting the intention to online health services (Song et al. 2021). In this study, the influence of e-health literacy on the desire to use manifests directly as well as indirectly through perceived usefulness and self-efficacyE-health literacy has a significant effect on PU, PEOU, and self-efficacy, which in turn affects the intention to use online pharmacies. E-health literacy has a more considerable effect on SE, though, as seen by the path coefficient between it and SE is significantly larger (0.55) followed by PEOU (0.256) and PU (0.232). This indicates that highere-health literacy makes people more proficient at using online pharmacy apps to manage their medical needs.Thus, this increased eHealth literacy leads to a more positive view about their ability to use online pharmacies, their usefulness, and the ease of use (Nie et al. 2023).

In this study, the perceived usefulnesssignificantly mediates the association between e-health literacy and the tendency to adopt these apps aligning with previous research (Schrauben et al. 2021). This aligned with the previous studies

(Panergayo and Aliazas 2021; M. Wang, Sun, and Hou 2021). It becomes significantly important to improve consumers' e-health literacy to expedite their online access to necessary health information when they are presented with new web-based products. The introduction of the internet has made it easier for patients with higher levels of electronic health literacy to obtain relevant health information and management services, which in turn has facilitated their adoption of e-health services (Smith and Magnani 2019). Thus, patient electronic health literacy becomes a critical issue that necessitates the adoption of measures to improve patients' electronic health literacy. This also shows how important it is for the appropriate authorities to significantly prioritize giving technical educational help to people. Self-efficacy is also found to be a significant mediator in the relationship between eHealth literacy and the adoption intention of online pharmacy. One reason is that self-efficacy is a person's assessment and judgment of the abilities they possess, and knowledge may be a valuable tool for determining one's worth. An individual may be more confident in altering existing behavior if they possess greater information. These findings are aligned with previous research (Y. Wang et al. 2022; Huang, Chiang, and Yang 2021). These findings also imply that raising persons' self-efficacy contributes to better health outcomes.

A broad range of health information is more accessible to people who possess strong digital literacy. Our results indicated that by increasing the eHealth literacy of the user, community health professionals and other pertinent staff can encourage them to adopt active health habits. A few eHealth literacy-focused treatments are beginning to appear, however they are scarce. Improving each person's eHealth literacy requires tailored advice based on their unique circumstances. According to a study of cancer survivors in rural areas, they preferred individualized assistance over conventional computer sessions (Ivankova et al. 2021). Additionally, it is feasible to fully utilize media technologies. A professionally created solution that included interactive games, films, web pages, and an online video course on how to access health websites all helped users become more eHealth literate (Lyles et al. 2019; Zaim et al. 2021).

7. Theoretical Implications

This study has used the TAM model to examine the direct and indirect impact of e-health literacy on the intention to adopt online pharmacy through self-efficacy perceived usefulness and perceived ease to use.By including e-health literacy and self-efficacy in the TAM model, this study innovatively constructs an adoption model that offers a more thorough prediction and explanation of users' adoption behavior of online pharmacy services.

8. Managerial Implications

This study thoroughly examines users' intentions to utilize online pharmacy services, which aids both domestic and international service providers and developers in improving the design of online pharmacy services and increasing users' adoption intentions.This study's findings indicate that improving website or app design can boost consumers' self-efficacy. Users are more likely to be confident utilizing online pharmacy services and have a stronger inclination to embrace them if they have a higher level of self-efficacy. Service providers should improve the user experience and product design by offering one-click functional services, streamlining the functioning of various parts, and making it more useful for users. The resources for information should be updated regularly, and the platform functions should be optimized. Users should receive prompt responses to their questions, registration requests, and queuing information This will increase consumers' trust in utilizing mHealth services. Simultaneously, consumers should receive the proper training on online pharmacy services to enhance their capacity to access, retrieve, and utilize medical data or services. If healthcare officials take the required steps to inform and educate people, they can enhance the use of online pharmacy apps in the prevention and management of illnesses.

9. Limitations and Future Work

Even though this study makes a substantial addition to our understanding of online pharmacy adoption, it is important to recognize several limitations. First, the results generalizability can be limited by the particular sample and setting in which they were obtained. This study should be repeated in future research using diverse samples from various periods, locations, and cultural backgrounds to increase the findings' generalizability. Second, this study employed a cross-sectional design, that provides a brief depiction of the relationships between constructs at a certain point in time. The causal relationships across time may be better understood using experimental or longitudinal approaches. Third, the study has relied on surveys, which are prone to response biases. Future research should think about including objective measurements or a variety of data sources to improve the accuracy of the findings. We have used only one adoption model TAM in our study, future studies can integrate various such as UTAUT, SOR, TTF, etc to get more comprehensive results. This study extended the TAM model only with two variables e-health literacy and self-efficacy, other relevant factors can be considered for further investigation.

10. Conclusion

This study extended the TAM model by adding two prediction variables self-efficacy and eHealth literacy to explain the factors influencing users' desire to embrace utilizing online pharmacy services.Data was gathered from 274 Indian customers who had previously used online pharmacy services. The findings show that consumers' propensity to use online pharmacy services was highly impacted by, self-efficacy, and e-health literacy. This study also showed that users' inclination to adopt was favorably impacted by perceived usefulness. Interestingly, perceived ease to use was found to be an insignificant factor as well as a mediator of usage intention. This study has shown its worth to online pharmacy service providers by elucidating how consumer perceptions play a part in adoption decision-making. Marketers should enhance the e-health literacy and self-efficacy of the users to increase the adoption of online pharmaceutical services.

11. Conflicts of interest

"All authors declare that they have no conflicts of interest".

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Exploring the Mediating Role of Communication Flow in the Relationship between Agile HRM Practices and Organisational Resilience in the VUCA World

HANEE SUNIL VINCHU AND AJAH WAGH

Abstract : Purpose : This study examines the impact of Agile Human Resource Management (HRM) practices on organisational resilience in a Volatile, Uncertain, Complex, Ambiguous (VUCA) environment. It explores how Agile HRM drivers—Organisational Culture and Structure (OCS), Leadership Style and Management Practices (LSMP), Technological Infrastructure (TI), and Change Management (CM)—influence Organisational Performance (OP) and Adaptation (A), with Communication Flow (CF) as a key mediator.

Research Methodology : This study used a survey of 67 HR professionals across 3 sectors, 5 domains and 15 states in India, analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). Grounded in theories such as the Agile Manifesto for HR and Lewin's Change Management Model, it explores relationships among OCS, LSMP, TI, CM, and CF.

Results : The findings show that Communication Flow significantly mediates the positive effects of Agile HRM drivers on Organizational Performance and Adaptation, highlighting the role of communication in enhancing organisational resilience and adaptability.

Keywords : Agile HRM, Change Management, Leadership Style, Organizational Culture, Organizational Resilience, Technological Infrastructure, VUCA.

Dr.Hanee Sunil Vinchu, Dept. of Commerce, IGNTU, Amarkantak, Madhya Pradesh, Mob : 9890476254, E-mail : hanee.vinchu@igntu.ac.in

Prof.Ajah Wagh, IGNTU, Amarkantak, Madhya Pradesh.

1. Introduction

In the context of the VUCA world, the role of Human Resources (HR) is changing to address the challenges posed by volatility, uncertainty, complexity, and ambiguity (Shet, 2024). Literature suggests that HR needs to concentrate on developing specific competencies within the workforce, such as cognitive flexibility, an agility mindset, and personal resilience, to navigate the unpredictable nature of the VUCA environment. Furthermore, organizational agility has become an essential condition for effective management, necessitating that HR adopts Agile HRM practices, including leadership models and agile mindsets, to enhance human capital management (Juchnowicz & Woliñska-Skuza, 2021). Contradictions arise in the context of strategic error management, where traditional stability is no longer sufficient and HR must manage errors as part of the innovation and learning process (Giolito et al., 2017). This shift is part of a broader transformation from transactional HR tasks to strategic HRM, emphasising talent acquisition, development, and retention as key drivers of organizational success (Wani, 2023).

The evolving role of HR in the VUCA world entails a strategic approach to human capital management that focuses on agility, competency development, and embracing errors as learning opportunities. HR practices must align with organizational objectives to foster a culture of innovation, adaptability, and resilience, ensuring that employees thrive in a rapidly changing environment.

1.1. Rationale

The dynamic and unpredictable nature of the VUCA (Volatility, Uncertainty, Complexity, Ambiguity) world necessitates organisations to adopt Agile HRM practices to enhance adaptability and performance. Despite its practical significance, Agile HRM lacks a comprehensive theoretical framework and academic consensus, resulting in fragmented and diverse research premises to build upon (Moh'D et al., 2024). This study aims to bridge this gap by providing a thorough examination of Agile HRM practices and their impact on organisational performance. Existing literature underscores the need for more empirical research to delineate Agile HRM as a distinct theoretical construct and to elucidate its full impact on organisational performance and adaptability (Huzooree & Ramdoo, 2015; Moh'D et al., 2024). Furthermore, the role of mediators within Agile HRM frameworks remains underexplored, suggesting potential areas for further investigation (Cruz et al., 2011; Zhou et al., 2021).

This study examines key variables such as organisational culture and structure, leadership styles, technological infrastructure, and change management, and

their influence on communication flows and decision-making processes. By addressing these aspects, this study aims to develop a robust theoretical foundation for Agile HRM, contributing to its academic legitimacy and practical application. This research seeks to provide valuable insights that will guide organisations in effectively designing and implementing Agile HRM practices, thereby enhancing their ability to thrive in a VUCA environment.

1.2. Objectives

1. To study the variables contributing to defining the Agile HRM Framework.

2. To explore and evaluate the effects of Agile HRM Practices – Organizational Culture and Structure, Leadership Style and Management Practices, Technological Infrastructure and Change Management) on organizational resilience outcomes – Organizational Performance, and Adaptation Capabilities).

3. To examine the mediating properties of Organizational Communication Flow between Agile HRM Practices and resilient organizational outcomes Organizational Performance, and Adaptation Capabilities.

1.3. Conceptual Model

Figure 1: Proposed model of the study variables

Source : Designed by Authors.
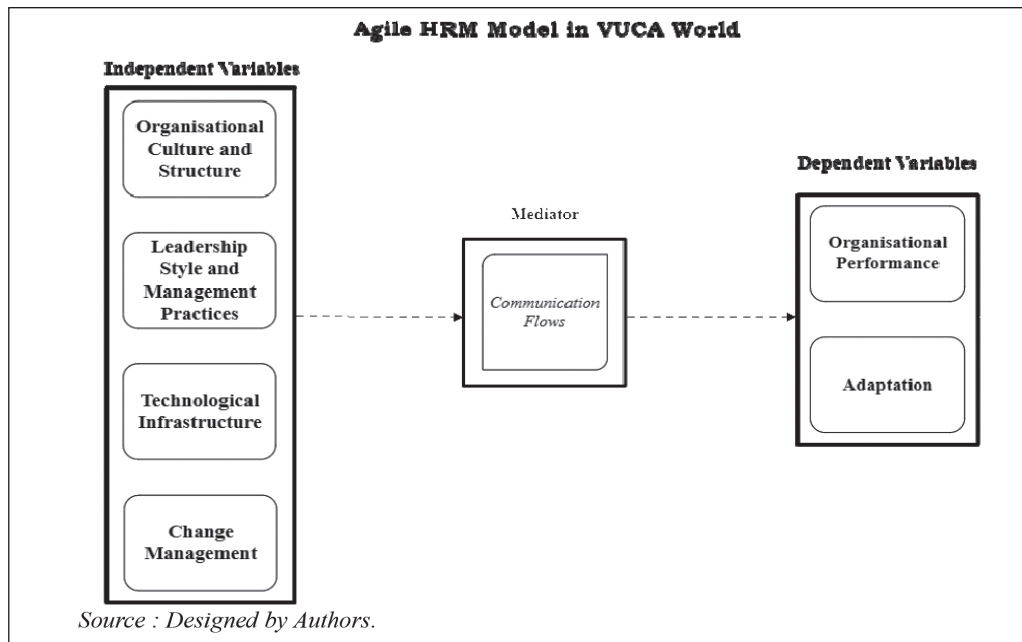
2. Review of Literature

In light of the Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) world, the implementation of agile Human Resource Management (HRM) practices is crucial for organisations to maintain a competitive edge and adapt to rapid changes in the business environment. Agile HRM refers to HR's flexibility, responsiveness, and adaptability to fluctuating market conditions (Hamid, 2019). The strategic significance of HRM in fostering sustainable competitive advantage is underscored, with a particular emphasis on the importance of diverse employees and innovative talent management strategies (Hamid, 2019).

Whilst Hamid (2019) delves into the strategic role of Human Resource Management (HRM) in the VUCA world, other studies have concentrated on various aspects of HRM practices. For example, Javaid et al. (2016) scrutinised the influence of HRM practices on organisational performance in developing countries, positing that traditional HR models are insufficient and require more capable systems. Lili et al. (2012) contend that commitment-based HRM practices have a greater impact on organisational performance compared to control-type practices. Paeno and Ramdani's (2023) comparative analysis revealed the cultural and regulatory factors shaping HRM practices in Indonesia and Malaysia. Madhavkumar (2023) and Mb et al. (2022) discuss the favourable effects of HRM practices on organisational performance and employee engagement, respectively. Fajana et al. (2011) highlights the debated nature of HRM definitions and underscores the significance of comprehending HRM issues for effective policy and practice implementation. Qureshi et al. (2023) identifies the impact of COVID-19 on HRM practices and organisational sustainability, while Al-Jabari (2011) and Zahrani (2022) examine the application of HRM practices in family businesses and the role of green HRM in organisational sustainability. Furthermore, the literature suggests that the agile approach is not only applicable to HR but also aligns with the preferences of Generation Y in the workplace, signifying a broader cultural shift towards agile principles (Revutska & Maršíková, 2021). Moreover, the integration of Agile HR practices in healthcare, as observed in the context of the COVID-19 pandemic, underscores the versatility and pertinence of these practices across different sectors (Cd & Balasundaram, 2024).

Agile HRM is characterised by its emphasis on adaptability, responsiveness, and collaboration, aligning HR practices with the rapid pace of change in today's business environment (Smith, 2023; Johnson et al., 2024).

2.1. Research Gap

The literature reviewed does not explicitly provide specific questionnaires, measurement tools, or instruments designed to evaluate the evolving role of Human Resources (HR) in a VUCA world. However, insights can be inferred from broader studies to determine the types of competencies and frameworks that may be relevant to HR in such an environment. The resilience approach advocated by Martynova (2020) and the BEVUCA framework by Saleh and Watson (2017) suggest that HR tools should evaluate organizational resilience, critical success factors, and the integration of quality and risk management. The need for the emphasis on business resilience and agile leadership in maritime business (Valionienë & Kalvaitienë, 2023), and the dynamic capabilities required for innovation management during disruptive times (Patterson et al., 2022) underscore the need for HR instruments that measure adaptability, leadership agility, and innovation capabilities.

Therefore, the literature reveals a need for more academic work to improve conceptual clarity and theory development in this area (Moh'D et al., 2024). Furthermore, the benefits of agile HRM are recognised across different organizational sizes and sectors, indicating its broad applicability and potential to contribute to organizational success (Heilmann et al., 2020; Marler & Parry, 2015).

The literature suggests a need for further research to develop and refine the theories underpinning Agile HRM, with an emphasis on understanding its benefits, challenges, and value to organisations (Huzooree & Ramdoo, 2015; Moh'D et al., 2024). Future research should aim to provide a more robust theoretical foundation for Agile HRM, contributing to its academic legitimacy and practical application.

In conclusion, the literature suggests a need for further empirical research to fully elucidate the mediators and moderators within Agile HRM frameworks (Taj, 2023).

2.2. Hypotheses

H_{01} : Communication Flow does not mediate the relationship between Organisational Culture, Structure and Organisational Performance and Adaptation (Indirect Effect).

H_{02} : Communication Flow does not mediate the relationship between Leadership Style, Management and Organisational Performance and Adaptation (Indirect Effect).

H$_{03}$: Communication Flow does not mediate the relationship between Technological Infrastructure and Organisational Performance and Adaptation (Indirect Effect).

H$_{04}$: Communication Flow does not mediate the relationship between Change Management and Organisational Performance and Adaptation (Indirect Effect).

H$_{05}$: Communication Flow does not significantly impact Organisational Performance (Direct Effect).

H$_{06}$: Communication Flow does not significantly impact Adaptation (Direct Effect).

3. Research Methodology

In a comprehensive survey aimed at understanding the evolving role of HR in the VUCA (Volatility, Uncertainty, Complexity, Ambiguity) world and the implementation of Agile HRM practices, a purposive and convenient sampling method was employed. HR professionals across various sectors in India, including public, private, and non-profit organisations, were targeted. Domains such as manufacturing, trading, services, ICT, ICT-enabled services (BPOs and call centres), and infrastructure are represented. The survey, which was conducted using Google Forms, was disseminated through WhatsApp groups to ensure a broad and diverse range of participants. Each respondent represented their respective organisation, providing insights directly from the field.

The significance of these responses cannot be overstated as they offer valuable perspectives from professionals who actively shape and implement Agile HRM practices. These responses are critical for understanding the practical challenges and successes of adapting HR strategies to a rapidly changing environment. Moreover, the literature review for this study incorporated popular secondary sources such as academic journals, industry reports, and case studies. These sources provide a robust foundation for contextualising primary data and understanding broader trends and theories in Agile HRM practices. This comprehensive approach ensured that the findings of this survey were both relevant and insightful for advancing HR practices in the VUCA world.

Descriptive Statistics, Path Analysis and Structural Equation Modelling were performed to test the hypotheses. Microsoft 365 Excel and SmartPLS 4.1.0.6 were deployed for data analysis.

3.1. Data Collection Methods and Sample Specifications

Primary data gathered for the study came from online questionnaire surveys sent to practising HRM Professionals working at PAN India. The approach to

the professionals was made through various WhatsApp groups, including the Alumni Network, and Professional groups.

A total of 67 responses were collected using a 5-point Likert scale. The responses were analysed using PLS4 software for both measurement analysis and structural equation analysis. Measurement model assessment (Hair, Matthews, Matthews, & Sarstedt, 2017) was performed for the reflective construct based on calculating outer loadings, reliability, and validity. Measurement Model assessment is the first necessary condition which must be satisfied before proceeding to evaluate and establish the predictive causal abilities of the conceptual (measurement) model through the assessment of the structural model in the second phase.

3.2. Measurement Instruments Deployed

The academic literature does not explicitly mention the existence of standardised questionnaires or instruments specifically designed to measure VUCA (Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) world conditions and agile Human Resource Management (HRM) practices. However, the reviewed papers provide insights into the strategic role of HRM in the VUCA environment and the need for organisations to adapt their strategies to maintain a competitive advantage (Hamid, 2019). Additionally, there is an emphasis on the development of diagnostic tools to assess VUCA dimensions in projects that can potentially be adapted for HRM purposes (Fridgeirsson et al., 2020). Interestingly, while these studies discuss various aspects of VUCA and its implications across different fields, such as healthcare (Cernega et al., 2024), law enforcement (Watt et al., 2016), and education (Lemoine et al., 2017), they do not provide a standardised approach for measuring the impact of VUCA on HRM practices. Instead, they highlight the importance of agility, adaptability, and competence in organisations to perform effectively in a VUCA world (Adam et al., 2024; Kiesel & Hammer, 2018).

Thus, the reviewed papers suggest that while the concept of VUCA is widely recognised and its impact on organisations is acknowledged, there is a gap in the literature regarding standardised questionnaires or instruments to measure VUCA conditions and Agile HRM practices. Future research could focus on developing such tools to help organizations better understand and navigate the complexities of the VUCA world (Adam et al., 2024; Cernega et al., 2024; Fridgeirsson et al., 2020; Hamid, 2019; Kiesel & Hammer, 2018).

An examination of the existing literature reveals that Agile Human Resource Management methodologies have gained significant importance in present-day dynamic business environments. Researchers have acknowledged the necessity

of a comprehensive measurement instrument to evaluate the efficacy of these methodologies in various organizational contexts. Consequently, they developed reliable and valid scales that encompass several dimensions to capture the essential aspects of Agile Human Resource Management. These scales have been subjected to various studies and expert reviews by a diverse group of HR professionals, and the outcomes have demonstrated their capacity to provide valuable insights into the consequences of Agile HRM practices on organizational performance. The objective of these scales is to offer a comprehensive evaluation of the pivotal Agile HRM study variables, thereby fostering a deeper understanding of the subject and guiding future research endeavours.

Sevenself-developed and modified scales consisting of items related to measuring Organisational Culture and Structure (OCS), Leadership Style and Management Practices (LSMP), Technological Infrastructure (TI), Change Management (CM), Communication Flows (CF), Organisational Performance (OP) and Adaptation (A) were appended using Five-pointLikert scales ranging from 1 to 5 (Strongly Agree 05-Strongly Disagree 01). All five scales were weighed for their reliability by applying Cronbach's alpha reliability test. All five scales showed reliability coefficient values of .7, above the accepted value.

4. Data Analysis

4.1. Assessment of Measurement Model

A measurement model assessment is required to check assumptions regarding reliability and validity (Ali et al., 2018; Hair et al., 2020). Reliability was calculated using Cronbach's alpha and composite reliability. The threshold limit for Cronbach's alpha should be greater than 0.7, and the validity measure in PLS models was suggested by Hair et al. (2019). AVE scores were evaluated for convergent validity. Discriminant validity was used to evaluate the construct's discriminant analysis. AVE score limit is 0.5 (threshold limit), the outer loading scores must be higher than their loading on other study variables.

4.2. Reliability of all the Constructs used in the Study

Traditionally Cronbach's alpha has been used as a measure for internal consistency. It provides an estimate of reliability by using the intercorrelations of the observed indicator variables. For internal consistency to be considered reliable, Cronbach's alpha must have a correlation value of at least 0 among a variable's items (Nunnally & Bernstein, 1994). Cronbach's alpha coefficients range from 0 to 1, where alpha values above.70 imply acceptable scores that represent solid result consistency within oneself (Hatcher, 1994; Nunnally and Bernstein, 1994). As

Figure 2: Measurement Model Indicating Factor Loadings

Source : Output generated by Smart PLS software.
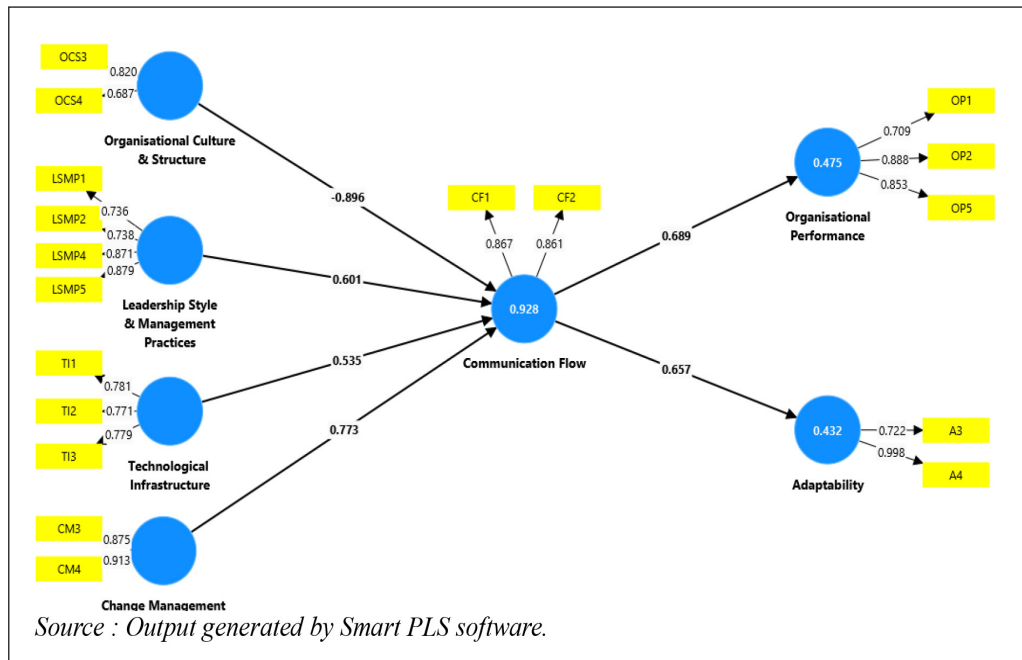
the threshold value of the limit of Cronbach's alpha is .07, and in the table, Cronbach's alpha values of all seven constructs of the study wereOrganisational Culture and Structure (0.720), Leadership Style and Management Practices (0.883), Technological Infrastructure (.821), Change Management (.888), Communication Flow (.855), Organizational Performance (.860), and Adaptation (.837) are well above the threshold value of Cronbach's alpha which means that all seven constructs in the study fulfilled the criteria for reliability of the scales.

4.3. Composite Reliability of all the variables

Composite reliability ranges between 0 and 1, where a higher value indicates a higher level of reliability. Composite reliability values should be 0.70 or higher (Bagozzi & Yi, 1988). Since the composite reliability values were higher than 0.70, the condition of internal consistency was met with respect to the study variables, namely,Organisational Culture & Structure, Leadership Style & Management Practices, Technological Infrastructure, Change Management, Communication Flow, Organizational Performance and Adaptation. The figure indicates that the composite reliability of the variables exceeded their Cronbach's alpha value, indicating that composite reliability is a better measurement scale

than normal reliability. The rho_c reliability indicated in the table is considered to explain the internal consistency of the constructs, whereas the rho_a value normally lies between the Cronbach's alpha value and rho_c value, and is therefore considered to be an acceptable compromise value of the composite reliability between these two reliabilities. In this study, the reliability values were well above the established values for all the three reliability measures.

Table-1 : Composite Reliability of the Constructs with Cronbach's Alpha Value

Constructs	Cronbach's alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)
Organisational Culture & Structure	0.720	0.736	0.726
Leadership Style & Management Practices	0.883	0.889	0.883
Technological Infrastructure	0.821	0.82	0.82
Change Management	0.888	0.889	0.888
Communication Flow	0.855	0.855	0.855
Organisational Performance	0.860	0.869	0.859
Adaptation	0.837	0.900	0.859

Source : Compiled by Authors.

4.4. Reliability of Individual Indicator

A construct's high outer loadings signify that on a construct indicate that its linked indicators have a lot in common. This is known as indicator reliability. The statistical significance of the outer loadings of the indicators is a necessary condition. For this, the outer loading of an indicator must be greater than 0.708, as $(0.708)^2$ equals 0.50. However, for practical purposes, 0.70 is acceptable (Hair et al., 2014). The results obtained in the table indicate that the outer loading values of the items in the construct are well above the suggested range, confirming the outer loading criteria. The outer loading values for the seven constructs were within the acceptable range.

4.5. Analysis of Convergent Validity with Average Variance Extracted (AVE)

A common measure for establishing convergent validity at the construct level is the average variance extracted (AVE). AVE is defined as "the grand mean value of the squared loadings of the indicators associated with the construct (i.e. the sum of the squared loadings divided by the number of indicators) (Hair et al., 2014). An AVE value of 0.50 or higher means that more than half of the variance of the measures is explained by the construct (Bagozzi & Yi, 1988). All the seven

study variables – Organisational Culture & Structure, Leadership Style & Management Practices, Technological Infrastructure, Change Management, Communication Flow, Organizational Performance and Adaptation have AVE values greater than 0.50 which means that the criteria of convergent validity are met.

Table-3 : Convergent Validity of the Constructs with Average Variance Extracted

Items	Organisational Culture & Structure	Leadership Style & Management Practices	Technological Infrastructure	Change Management	Communication Flow	Organisational Performance	Adaptation
OCS3	0.820						
OCS4	0.687						
LSMP1		0.736					
LSMP2		0.738					
LSMP4		0.871					
LSMP5		0.879					
TL1			0.781				
TL2			0.771				
TL3			0.779				
CM1				0.875			
CM4				0.913			
CF1					0.867		
CF2					0.861		
OP1						0.709	
OP2						0.888	
OP5						0.853	
A3							0.722
A4							0.998

Source : Compiled by Authors.

Discriminant validity assesses whether the two constructs are unrelated, even if they should not be. This demonstrates how accurately a test captures the idea that it was intended to capture. This is a sign of how drastically different the two structures are from one another. Campbell and Fiske (1959) introduced the notion of discriminant validity as a criterion for assessing validity which evaluates the overall measurement of concepts that cannot be linked to others as a criterion for such a reliability analysis. HTMT analysis values lower than 0.9 is considered ideal for establishing discriminant validity of the construct (Franke and Sarstedt, 2019). All Seven (07) Study variables –Organisational Culture & Structure, Leadership Style & Management Practices, Technological Infrastructure, Change

Table-4 : Discriminant Validity

Constructs	Adaptation	Change Management	Communication Flow	Leadership Style & Management Practices	Organisational Culture & Structure	Organisational Performance	Technological Infrastructure
Adaptation	0.634	0.666	0.634	0.718	0.709	0.808	
Change Management		0.809	0.777	0.896	0.734	0.693	
Communication Flow			0.818	0.735	0.686	0.869	
Leadership Style& Management Practices				0.896	0.844	0.774	
Organisational Culture & Structure					0.868	0.749	
Organisational Performance						0.750	
Technological Infrastructure							

Source : Compiled by Authors.

Management, Communication Flow, Organizational Performance, and Adaptation–suggested that discriminant values (HTMT Values) are well below 0.9 acceptable values and establish discriminant validity for the stated constructs.

4.6. SRMR – Goodness of Fit Indices

The standardised root mean square residual (SRMR) value less than .08 is considered good, and in our case, the reported SRMR Value is 0.058, and a Normed Fit Index (NFI) value above 0.9 is considered a good fit; however, the value of NFI ranges from 1 to 9, and it is also suggested that if the value lies closer to 9, it will be considered a very good fit; therefore, our NFI Value obtained is 0.807, which is considered a Good Fit.

Table-5 : Goodness of Fit Indices

Fit Indices	Estimated Model
SRMR	0.058
NFI	0.807

Source : Compiled by Authors

4.7. Structural Model Assessment

The Structural Model was assessed to scale the linkage among variables and their relevance by considering VIF values, Beta Coefficients, P-Values, R^2 values, and SRMR values. To obtain confirmation of various hypothesised relationships, the bootstrap method was adopted with a sample size of 5000 samples, so that the desired standard values for statistical significance may be obtained (Hair et al., 2019). As a pre-condition, the VIF test is run to find multicollinearity among the constructs which helps in improving the model fitness. The VIF values should be lower than 3.33 (Diamantopoulos et al., 2008) for all constructs so that the studied model is free from multicollinearity issues. The R-squared values were calculated to determine the variance measured by independent variables on the dependent variables. R square values should be greater than 20% (Rasoolimanesh et al., 2017).

Moreover, the assessment of a structural model is performed based on the coefficient of determination (R^2) and the statistical relevance of the path coefficients based on t-values and beta coefficient values, as reported after running the bootstrap methodology.

4.8. VIF Values of the Constructs

Hair et al. (2011) recommended that the VIF value should be lower than 5 to rule out a potential collinearity problem. The VIF Values for all seven variables – Organisational Culture & Structure, Leadership Style & Management Practices, Technological Infrastructure, Change Management, Communication Flow, Organizational Performance, and Adaptation – were within the prescribed range. The VIF values for the constructs were as follows:

Table-6 : VIF Values

Constructs	VIF	Constructs	VIF
OCS3	1.464	CM3	2.760
OCS4	1.464	CM4	2.760
LSMP1	2.391	CF1	2.261
LSMP2	2.211	CF2	2.261
LSMP4	2.4	A3	2.078
LSMP5	2.181	A4	2.078
TI1	1.499	OP1	2.687
TI2	2.295	OP2	2.731
TI3	2.487	OP5	1.775

Source: Compiled by Authors.

Hypothesis testing was conducted using the bootstrapping technique in Smart PLS 4.0. To achieve this objective, 5,000 random subsamples of the structural model were created, as depicted inFigure 3.

4.9. Partial Least Square Structural Equation Modelling (PLS-SEM) Analysis using Bootstrapping Methodology

Partial Least Square equation modelling using a smart PLS application was utilised to calculate the t-value and beta coefficient values for all the variables – Independent variables, Organisational Culture & Structure, Leadership Style & Management Practices,Technological Infrastructure, Change Management, and mediating variable Communication Flow– and simultaneously for Dependent Variables Organizational Performance and Adaptation through bootstrap measure towards establishing validity and strength of association and impact among constructs (Hair, Ringle, and Sarstedt, 2011), which helped in confirming the hypothesised relationships among the constructs.

Figure-3 : Structural Equation Model with Measurement & Structural Model with p-values and t-values
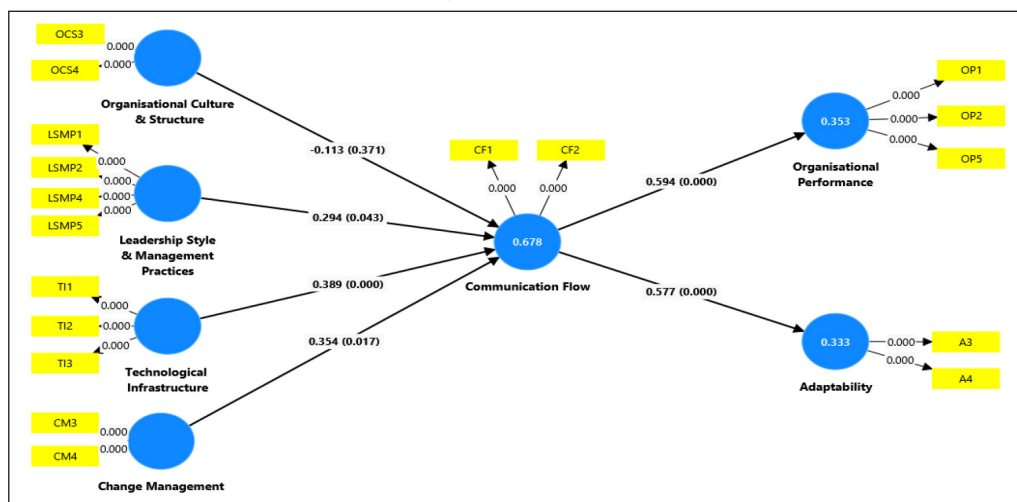
Source : Output generated by SmartPLS software.

Figure-3 illustrates the various constructs (Independent, Dependent & Moderating Variables) used in the hypothesised model with actual loadings, along with various deterministic values. P-values, t-values, Outer Loadings, R^2Values. The structural model shown above is a complete structural test model with a measurement model, along with its proprietary values.

4.10. Testing Hypotheses Using Bootstrapping Methodology

The researcher used the bootstrapping method to validate the six hypotheses framed in the study with the established procedure and a sample size of 5000 samples. The results obtained are presented for both direct and indirect effects, as calculated in the table below.

a. Testing of Hypotheses and Outcomes

Beta Coefficient	T-Value	P-Value	Status
H_01 : *Communication Flow will not mediate the relationship between Organisational Culture, Structure and Organisational Performance and Adaptation (Indirect Effect).*			
-0.113	0.895	0.371	***Supported***
H02 : Communication Flow will not mediate the relationship between Leadership Style, Management and Organisational Performance and Adaptation (Indirect Effect).			
0.294	2.022	0.043	***Not Supported***
H03 : Communication Flow will not mediate the relationship between Technological Infrastructure and Organisational Performance and Adaptation (Indirect Effect).			
0.389	4.596	0.000	***Not Supported***
H04 : Communication Flow will not mediate the relationship between Change Management and Organisational Performance and Adaptation (Indirect Effect).			
0.354	2.381	0.017	***Not Supported***
H05: Communication Flow will not be significantly impacting Organisational Performance (Direct Effect).			
0.594	7.813	0.000	***Not Supported***
H06 : Communication Flow will not be significantly impacting Adaptation (Direct Effect).			
0.577	8.355	0.000	***Not Supported***

Source : Compiled by Authors.

b. The R Square Value Interpretation

The R Square values are obtained after running bootstrap conveys that all four independent variables together – Organisational Culture & Structure-Leadership Style & Management Practices-Technological Infrastructure-Change Managementcan predict 67% variation in the mediated/dependent variable Communication Flow, which is able to predict both theDependent Variables, namely Organisational Performance by 35% and Adaptation by 33%.

5. Discussions

5.1. Interpretation of Bootstrapping Results

The data analysis revealed a negative impact of Organizational Cultureand Structure on Communication Flow, Organizational Performance and Adaptation,

Table-7 : R Square values

Causal Relationship among Constructs	R Square
Organisational Culture & Structure-Leadership Style & Management Practices-Technological Infrastructure-Change Management-Communication Flow	0.678
Communication Flow-Organisational Performance	0.353
Communication Flow-Adaptation	0.333

Source : Compiled by Authors.

with a beta coefficient of -0.113 and a t-value of 0.895. These results show that **H_01 : Communication Flow does not mediate the relationship between Organisational culture, structure, and Organisational Performance, and Adaptation (*Indirect Effect) is supported.***

Further, the Leadership Style and Management Practices are shown to have a significant impact on Communication Flow and consequently on Organizational Performance and Adaptation (β = 0.294, t = 2.022), providing evidence that Communication Flow significantlymediates the relationship between Leadership Style &Management Practices, Organizational Performance and Adaptation Thus, the results show that **H_02 : Communication Flow does not mediate the relationship between Leadership Style, Management, and Organisational Performance and Adaptation (*Indirect Effect) is Not Supported.***

The mediating effect of Communication Flow between Technological Infrastructure, Organisational Performance, and Adaptation was further checked, and based on the beta value and t-values (β = 0.389, t = 4.596), it was confirmed that our **H_03 : Communication Flow does not mediate the relationship between Technological Infrastructure and Organisational Performance and Adaptation (*Indirect Effect) is Not Supported.***

Results related to **H_04 : Communication Flow does not mediate the relationship between Change Management and Organisational Performance and Adaptation (*Indirect Effect), confirms that* Communication Flow moderates the** relationship between Change Management, Organisational Performance, and Adaptation(β= 0.354, t = 2.381).

The direct relationship between Communication flow and Organizational Performance and Adaptation – **H_05 Communication Flow does not significantly impact Organisational Performance (Direct *Effect)* (β = 0.595, t = 7.813), and**

H_06 **Communication Flow will nothave a significant impact on Adaptation (Direct** *Effect)* **($\beta = 0.577$, t = 8.355)does not supportH$_0$5 and H$_0$6, respectively.**

The structural model incorporates mediated relations established using literature. Literature has also used the term "inconsistent mediation" to describe this phenomenon (Zhao et al., 2010). Indirect-only mediation is the third form of mediation. This type exhibits an indirect influence but lacks adirectone. Baron and Kenny (1986) and Zhao et al. (2010) used the term "full mediation" to describe this phenomenon. Indirect-only mediation implies that the mediator fully clarifies the relationship between the variable under consideration and conclusion. The analysis clearly shows that Communication Flowfully mediates the association between Agile HRM drivers and organizational resilience efforts.

6. Conclusion

This study offers a thorough examination of how Communication Flow (CF) influences the connections between Agile HRM Drivers (OPS,LSMP,TI,CM) and Organizational Resilient Efforts(OP & A)among sampled HR Professionals The emphasising the intricate relationship between Agile Drivers and Resilient Efforts and the significance of support systems in reducing the negative consequences of Agile Framework adoption without consultation, communication, and feedback from stakeholders. The mediation study demonstrates that communication flow and support serve as strong mediators in the connection between organisations' agile efforts and the consequent performance and adaptability in the organisation. This suggests that Communication, Networking within peer teams across organizational hierarchies may lead to efficient outcomes which support the agile framework and the strategic intent of the organisation. This study highlights the importance of organisations in addressing the challenges raised by the VUCA environment and attaining a competitive edge by being resilient and responsive towards the management of change.

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Investigating Fintech Adoption among Commerce and Management Students : An Extended UTAUT Model Study

VINUTHA T.N AND K. NIRMALA

Abstract : *As the fintech industry continues to expand, it has become increasingly vital for educational institutions, particularly those specializing in commerce and management, to adapt their curricula to equip students with the necessary skills to thrive in this digital era. In this regard, the current study attempts to understand the determinants influencing the adoption of fintech among students of higher education institutions and its impact on commerce and management education. Modified UTAUT2 Model has been adopted to understand the determinants. Five variables from UTAUT2 Model have been included along with curriculum and financial literacy. The study employed judge mental sampling technique and data has been collected from 206 respondents through online survey. To analyze the causal relationship b/w variables, SEM model was applied. 63% of the changes in the intention to adopt FinTech is explained by variables adopted in the study and 44% of variation in educational impact.*

Keywords : FinTech; Commerce and Management Education; Digital Era; Modified UTAUT2; Educational Impact.

1. Introduction

The 4th Industrial Revolution has significantly impacted various business sectors, with financial services which are having a vital role in its advancement through rise of FinTech. (Pizzi, Corbo, & Caputo, 2021) Fintech is the integration of modern technological advancements in the finance industry (Rabbani, Khan, & Thalassinos, 2020). It is an IT-driven solution that stimulates the financial industry. Like traditional financial firms like banks and insurance companies,

Vinutha T.N, Research Scholar, Department of Commerce, Bangalore University, Mobile: 8050009513 Email : vinu15gowda@gmail.com

Dr.K.Nirmala, Professor, Department of Commerce, Bangalore University. Mobile: 9845415304. Email : knirmalareddy@gmail.com

it provides financial services. FinTech is characterized by its innovative technology and unique, customized products that are focused on the needs of the consumer and exhibit exceptional competence, transparency, and flexibility. These elements result in great efficacy, cost savings, adaptability, and automation. (Siddiqui & Rivera, 2022). Fintech can be viewed set of innovative instruments that leverage emerging information technologies, like cloud computing, big data, and the IoT, to expand the capabilities of financial services. (Nakashima, 2018).

1.1. Background and Theoretical Foundation Fintech

1.2. Changing Landscape of Higher Education

1.3. Importance of FinTech in Commerce and Management Education

As fintech endures to redesign the financial setting, its importance in commerce and management education becomes increasingly evident. The integration of fintech into academic programs offers several benefits, including the improvement of critical thinking abilities, skills to apply technology in business contexts, and the promotion of an entrepreneurial mindset (Gai, Qiu, & Sun, 2018). By exposing students to fintech, educational institutions can prepare them for the challenges and opportunities presented by a rapidly changing industry, ultimately enhancing their employability and readiness to contribute to the economy (Philippon, 2016). Fintech acceptance in higher education is also aligned with broader trends in business education that emphasize experiential learning and the practical application of academic knowledge (Datar, Garvin, & Cullen, 2010).

1.4. Student Adoption of FinTech

Student adoption of fintech is crucial for the successful integration of these technologies into higher education. Engaging students with fintech tools and platforms not only enhances their learning experience but also prepares them for the technological demands of the modern workforce. Research indicates that students who engage with fintech during their studies are more likely to develop innovative solutions, pursue careers in fintech, or apply their knowledge in traditional business settings (Haddad & Hornuf, 2019). However, the fintech adoption by students is prejudiced by several aspects, including their familiarity

with technology, the accessibility of resource & the support provided by educational institutions (Venkatesh, Thong, & Xu, 2012). To encourage widespread adoption, institutions must provide adequate training, resources, and opportunities for students to experiment with fintech in a supportive learning environment. This approach not only enhances student engagement but also ensures that they are well-prepared to navigate and lead in a fintech-driven economy.

1.5. UTAUT Model

The UTAUT model offers a strong outline to comprehend the elements persuading acceptance of technology and it may be used to analyze the integration of fintech into higher education. According to (Venkatesh, Morris, Davis, & Davis, 2003). UTAUT highlights four major factors that influence users' intentions and behaviors when it comes to using technology: performance expectancy, effort expectancy, social influence, and facilitating conditions. UTAUT2 is an extension of the UTAUT model (Venkatesh, Thong, & Xu, 2012).The model now contains 3 more added structures: hedonic motivation variable, price value variable, and habit make up seven independent variables that make up the determinants of BI. Lastly, the real use is impacted by BI. The model may explain 40–52% of the actual usage and 56–74% of the behavioral intention when compared to other deeply ingrained models (Hassan, Islam, Abdullah, & Nasir, 2024). The foundational theory of this study is grounded on this UTAUT developed by (Venkatesh, Thong, & Xu, 2012). By leveraging the UTAUT model, educators can better understand the determinants and deterrents to adopting fintech, enabling the design of targeted strategies to enhance fintech integration in commerce and management curricula, thereby aligning educational outcomes with the demands of the modern financial industry.

1.6. Conceptual Model and Hypothesis

The paper pulls motivation from the UTAUT Model as conversed above to explore the backgrounds of fintech adoption among students of higher education institutions. This study covers performance expectancy, social influence, effort expectancy and facilitating conditions from UTAUT Model and Hedonic Motivation from UTAUT 2 Model along with Curriculum and Financial Literacy. These factors are linked to the adoption of Fintech by its impact on education,

actual use, and behavioral intention. The research model derived from the discussed hypothesis is presented below.

1.7. Performance Expectancy (PE)

The extent to which a person accepts that utilizing technology will benefit them accomplish specific tasks is known as performance expectancy. (Venkatesh, Morris, Davis, & Davis, 2003).

H1 Hypothesis : Performance expectancy has a significant relationship on behavioral intention of students in using the fintech services

1.8. Effort Expectancy

The ease of use with which a user considers the system to be functional is known as effort expectancy.

H2 Hypothesis : Effort expectancy has a significant relationship on behavioral intention of students in using the fintech services.

1.9. Social Influence

Socialinfluence is the extent to which someone may be persuaded to utilize a specific technology by the influence of others.

H3 Hypothesis : Social Influencehas a significant relationship on behavioral intention of students in using the fintech services.

1.10. Facilitating Conditions

The extent to which a person trusts that an organizational and technical arrangement occurs to promote system utilization is known as the facilitating conditions (Venkatesh, Morris, Davis, & Davis, 2003).

H4 Hypothesis : Facilitating conditions has a significant relationship on behavioural intention of students in using the fintech services.

1.11. Hedonic Motivation

Hedonic motivation is defined as the pleasure one experiences when using a technology.

H5 Hypothesis : Hedonic Motivation has a significant relationship on behavioural intention of students in using the fintech services.

1.12. Financial Literacy

The comprehension & awareness of the financial conceptions and services that enable individuals to take well-informed financial judgments is referred as financial literacy.

H6 Hypothesis : Financial Literacyhas a significant relationship on behavioral intention of students in using the fintech services.

1.13. Curriculum

The extent to which the curriculum includes content related to FinTech, financial literacy, and digital finance tools. Including Curriculum as a variable adds a critical dimension to the study, acknowledging how education influences students' readiness and desire to use fintech.

H7 Hypothesis : Curriculum has a significant relationship on behavioral intention of students in using the fintech services.

1.14. Behavioral Intention

The possibility that users would carry out a specific behavior is termed as behavioral intention (Ajzen, 2002).

Hypothesis H8 : Behavioral Intention significantly influences the Students Usage of FinTech.

1.15. Fintech Adoption and Educational Impact

Fintech adoption among students has been increasingly studied as this demographic becomes a key target for digital financial services.

Hypothesis H9 : Actual Usage of Fintech (AU) positively impacts the commerce and management education (EI).

Figure-1 : Research Model
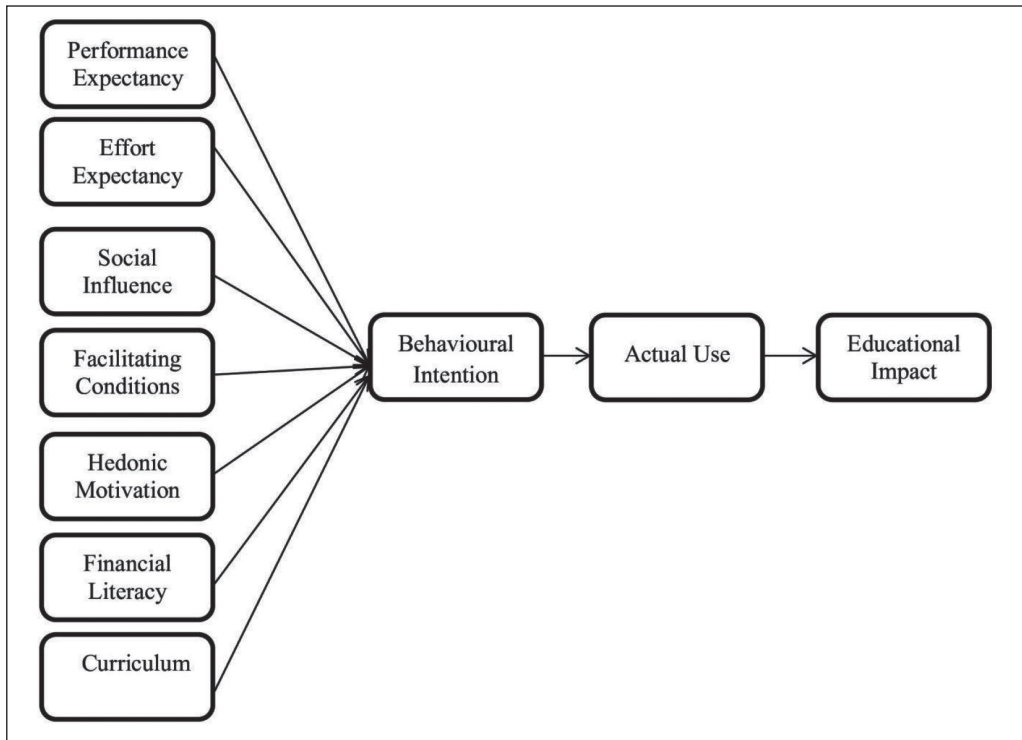
2. Methodology

The study uses modified UTAUT 2 model to identify and analyze characteristics that influence students in higher education to embrace FinTech services. The study also objects to define the effect of FinTech adoption in commerce & management education to legitimize use of FinTech to improve students' financial literacy and skills. The study poses following questions: a) The Factors which influence students' intentions to routine fintech, which in turn influences students' adoption of fintech in higher education? b) Is it possible to improve the predictive power of students' fintech adoption by modifying UTAUT 2? c) Does student adoption of fintech impact commerce and management education? In order to address these inquiries, a survey approach has been implemented. According to (Chin & Newsted, 1999), The survey approach is suitable for evaluating the relationships and behavior of the variables. Also, conferring to (Huang & Benyoucef, 2015), numerous research have employed survey methodology to quantify behavioural modifications in e-commerce and communal contexts.

2.1. Questionnaire

With minor adjustments, the measurement instruments used in this study were taken from (Venkatesh, Thong, & Xu, 2012). The UTAUT 2 theory comprises five latent variables, namely: hedonic motivation, performance expectancy, effort expectancy, enabling condition, and the social impact. The UTAUT2Model has been modified to include curriculum and financial literacy. An adaptation of financial literacy can be found in (Lusardi, 2019). Each item was rated on a 5 point Likert scale, where one denotes strong disagreement and five strongly agree. We talked with a number of subject-matter experts and conducted a thorough literature review to verify the validity of the measuring scale's contents. Four specialists participated in the design of the questionnaire : two faculty members from higher education institutions and two FinTech experts.

2.2. Data Collection

The following standards were used when using the judgmental sampling technique: a) Student of higher education pursuing under graduation or post-graduation or any other professional course in commerce and Management; b) User of any two Fintech Service and c) Located in Bengaluru Urban. With the use of Google Form, the survey questions were distributed electronically to administer the questionnaires. From the standpoint of FinTech adoption study, data collection via online questionnaires is appropriate. Additionally, their wide reach and ease of formation make it more advantageous. (Chen, Wang, Huang, & Shen, 2016). In terms of determining the sample size, (Barclay, Higgins, & Thompson., 1995) rule was followed. According to this, the sample size ought to be 10 times greater compared to the total no. of structural paths leading to the specific structural design. Seven is the most no. of structural routes directing to certain component in the study model (Figure 1). Giving to the ten times rule, the size of sample (7*10=70) is therefore deemed sufficient. Out of the 232 responses gathered, 206 were deemed suitable for inclusion in the research. We reasoned that the number of replies received was sufficient to the study because the essential size of sample was 70.

2.3. Data Analysis

Three stages of data analysis were carried out: structural model analysis, measurement model analysis & the descriptive analysis. The SPSS software was used for the descriptive analysis for analyzing the respondents' demographic features. The study made use of the structural equation modelling (AMOS - SEM) for the further analysis. It is a technique to analyze the data that may evaluate a sequence of concurrently developed, somewhat multifaceted

correlations b/w the exogenous and endogenous variables, which could be constructed commencing a variety of indicators (Sarkar & Costa, 2008). This approach combines two types of analysis: regression analysis and factor analysis. The measurement model is assessed for the two stage SEM analysis in terms of the construct validity and reliability of every indicator & the structural model is testedto ascertain if variables are correlated or have an influence on one another (Costa & Jongen, 2006).

3. Results And Findings Respondents Profile

In order to understand the respondents' demographic profile, data analysis was done for the following characteristics. Out of 214 respondents, 85(41.26%) were male and 121(58.73%) were female respondents. With regards to level of education of respondents (31.6%) of the respondents were under graduates and (64.1%) were post graduates and remaining (4.3%) were pursuing professional courses. This finding suggests that the sample is primarily made up of post graduates of commerce and management education. With regards to awareness of fintech services, all the respondents i.e. (100%) of the respondents were aware of Digital Payments and Mobile wallets, which are further dominated by Investment platforms (42.2%). Digital Insurance Platforms awareness is around (24.2%) whereas (17.5%)of the respondents are aware of online lending platforms and (17.2%)personal financial management tools respectively and the least awareness is in terms of P2P lending (6.2%). In terms of awareness, (39.8%) of the respondents learnt about fintech through friends and family, (19%) through Online Search and Social Media respectively, (10.1%) of the respondents through Advertisements. (12.1%) of the respondents learnt about fintech apps through the curriculum offered by the institutions Finally, about how frequently respondents use fintech services, the data reveal that the majority use the technology every day (58.7%), followed by the ones who use fintech frequently (24.2%), weekly (9.1%), rarely (4%), monthly (3%).

3.1. Measurement Model

Measurement model's output, displayed in Tables-2 and 3, calculates how well the research model fits the data. The rationality of the research instruments were tested for convergent validity & discriminant validity, and dependability of the AMOS program was evaluated using composite reliability and Cronbach's alpha. Every item has a loading factor greater than 0.70, suggesting a good indication; however, three items (FL2, HM4, and CM3) had loadings less than 0.4 and were eliminated from the final model. The dependability of all scales is demonstrated by their composite reliability scores, which exceed the minimum threshold of 0.70 for Cronbach alpha values (see to Table-2). Given that the

Table-1 : Characteristic of the Respondent

Characteristic	Criteria	Frequency	Percentage
Gender	Male	85	41.26
	Female	121	58.73
Level of Education	Under Graduate in Commerce and Management	65	31.6
	Post Graduate in Commerce and Management	132	64.1
	Professional Course in Commerce and Management	9	4.3
Awareness of Fintech Services #	Digital Payments and Mobile Wallets	206	100
	Online Lending Platforms	36	17.5
	Investment Platforms	87	42.2
	Digital Insurance Platforms	50	24.2
	Personal Finance Management Tools / Budgeting Apps	35	17.2
	Peer-to-Peer (P2P) Lending	13	6.3
Recommendations for using Fintech Service	Friends or Family	82	39.8
	Online Search	39	19
	Social Media	39	19
	Advertisements	21	10.1
	Curriculum (Syllabus)	25	12.1
Frequency of Fintech Use	Daily	121	58.7
	Several times a week	50	24.2
	Weekly	19	9.1
	Monthly	6	3
	A few times a year	2	1
	Rarely	8	4

Respondents were allowed to choose multiple options

convergent validity extract of mean variation (AVE) has a square root value greater than the limit value (0.70) (see Table-2), all scales are considered reliable. The Fornell and Larcker's discriminant validity test indicates that all 10 constructs are valid because the extracted variance of each factor is relatively significant in relation to the inter-scale correlation (see Table-3).

Table-2 : Quality Criteria – Factor Loading and (AVE, Composite Reliability, Cronbach's Alpha)

Constructs	Items	Factor Loadings	AVE	Composite Reliability	Cronbach's Alpha
Performance Expectancy	PE1	0.830	0.758	0.780	0.912
	PE2	0.843			
	PE3	0.874			
	PE4	0.852			
Effort Expectancy	EE1	0.841	0.821	0.791	0.918
	EE2	0.832			
	EE3	0.861			
	EE4	0.879			
Social Influence	SI1	0.822	0.812	0.821	0.920
	SI2	0.811			
	SI3	0.824			
	SI4	0.823			
Facilitating Conditions	FC1	0.747	0.789	0.725	0.888
	FC2	0.741			
	FC3	0.732			
	FC4	0.718			
Hedonic Motivation	HM1	0.765	0.792	0.731	0.892
	HM2	0.774			
	HM3	0.778			
Financial Literacy	FL1	0.888	0.872	0.777	0.881
	FL3	0.895			
	FL4	0.911			
Curriculum	CM1	0.921	0.889	0.819	0.923
	CM2	0.914			
	CM4	0.917			
Behavioural Intention	BI1	0.844	0.842	0.792	0.895
	BI2	0.851			
	BI3	0.845			
	BI4	0.866			
Actual Use	AU1	0.945	0.879	0.844	0.926
	AU2	0.942			
	AU3	0.914			
	AU4	0.889			
Educational Impact	EI1	0.892	0.874	0.812	0.914
	EI2	0.845			
	EI3	0.912			
	EI4	0.889			

Table-3 : Discriminant Validity

Variables	Mean	SD	PE	EE	SI	FC	HM	FL	CM	BI	AU	EI
PE	4.524	1.341	0.934									
EE	4.431	1.523	0.635	0.921								
SI	4.751	1.275	0.588	0.526	0.873							
FC	4.612	1.364	0.623	0.611	0.638	0.824						
HM	4.211	1.351	0.737	0.475	0.536	0.604	0.833					
FL	4.651	1.340	0.623	0.475	0.475	0.623	0.623	0.916				
CM	4.825	1.519	0.737	0.526	0.526	0.737	0.737	0.737	0.911			
BI	4.441	1.276	0.612	0.611	0.611	0.612	0.612	0.612	0.612	0.853		
AU	4.523	1.364	0.588	0.611	0.611	0.588	0.588	0.588	0.588	0.588	0.831	
EI	4.715	1.276	0.623	0.475	0.475	0.623	0623	0.623	0.623	0.623	0.623	0.899

Note: n = 206, squared roots of extract of mean variation (AVE) extracted are shown in italics on the diagonal, and variable correlations are below the diagonal. Performance expectancy (PE), Effort expectancy (EE), Social influence (SI), Facilitating condition (FC), Hedonic motivation (HM), Financial Literacy(FL), Curriculum (CM), Behavioural Intention (BI), Actual Use(AU) and Educational Impact (EI)

3.2. Structural Model

The study's fit index results showed the CMIN/DF of 1.427, Comparative Fit Index of 0.941, Tucker-Lewis Index of 0.924, and root mean square error of approximations is 0.063. An effective fit model for the smallest possible specified cut-off value fit is adopted from (Hu & Bentler, 1999). Table-4 presents the goodness details.

Table-4 : Goodness of Fit

Indicators	Value	Standard	Category
RMSEA	0.063	$0.05 \leq RMSEA \leq 0.08$	Good Fit
CMIN/DF	1.427	≤ 2.00	Good Fit
NFI	0.914	≥ 0.90	Good Fit
IFI	0.930	≥ 0.90	Good Fit
TLI	0.924	≥ 0.90	Good Fit
CFI	0.941	≥ 0.90	Good Fit

Nine research hypotheses are tested by evaluating the structural model. The hypothesis test results are displayed in Table-5. The study results indicate the following factors positively impact behavioral intention: financial literacy (β : 0.534, p value : 0.000), social influence (β : 0.610, p-value : 0.000), facilitating

conditions (β : 0.200, p-value : 0.018), performance expectations (β : 0.512, p-value : 0.006), and curriculum (β : 0.491, p-value : 0.000). Thus, following hypotheses are accepted: 1, 3, 4, 6, and 7. In the meantime, there is no discernible relationship between hedonic motivation (β : 0.033, p-value : 0.090) and effort expectations (β : 0.011, p-value : 0.071) and behavioral intention. As a result, hypothesis 2 and 5 are disproved. Moreover, this study discovered thatBehavioral Intention influences the real use of fintech (β : 0.511, p-value : 0.003) and that the real usage of fintech impacts commerce and management education (β : 0.475, p-value : 0.004), indicating that hypotheses 8 and 9 are accepted.

Table-5 : Hypothesis Testing

	Hypothesis	β	P - value	Decision
H1	Performance Expectancy →Behavioural Intention	0.512	0.006	Supported
H2	Effort Expectancy→ Behavioural Intention	0.011	0.071	Not supported
H3	Social Influence → Behavioural Intention	0.610	0.000	Supported
H4	Facilitating Conditions→ Behavioural Intention	0.200	0.018	Supported
H5	Hedonic Motivation →Behavioural Intention	0.033	0.090	Not supported
H6	Financial Literacy →Behavioural Intention	0.534	0.000	Supported
H7	Curriculum →Behavioural Intention	0.491	0.000	Supported
H8	Behavioural Intention →Actual use	0.511	0.003	Supported
H9	Actual use → Educational Impact	0.475	0.004	Supported

3.3. Co-efficient of Determination

The R^2 demonstrates the studies model ability to elucidate how factors contribute to explaining changes in FinTech adoption. Predictions with a higher R^2 value can therefore be accurate. The research model results account for a significant variation in behavioral intention (R2 = 0.63). This indicates that 63% of the variant in deviations in the intention to adopt FinTech is explained by the variables of performance expectancy, effort expectancy, social influence, facilitation conditions, hedonic motivation, financial literacy & curriculum. Additionally, a significant variance in fintech adoption is explained by the model (R2 = 0.58), meaning that 58% of the variation in fintech adoption can be attributed to the behavioral intention variable. The model also explains the reasonable variations in education impact (R^2 = 0.44), which specifies that the usage of fintech variable explains for 44% of variation in educational impact.

4. Findings of the Study

In this study, we looked at the variables driving fintech adoption among students studying management and commerce as well as the ways in which fintech is affecting these fields of study. This goal is motivated by the scant knowledge and conflicting findings in the body of research on the variables influencing students' use of fintech. This study introduced two more dimensions, financial literacy and curriculum, in addition to adopting UTAUT2 theory elements to address these gaps.

The findings support the hypothesis(H1) that performance expectancy has a significant relationship with behavioral intention to utilize fintech. And these findings are consistent with other researches piloted by (Venkatesh, Thong, & Xu, 2012), (Chopdar, Korfiatis, Sivakumar, & Lytras, 2018). This validation implies that the advantages of using fintech play a critical role in influencing user behavior. As a result, students are more willing to embrace fintech if they can reap greater benefits from using it. On the other hand, the results contradict previous research by demonstrating that effort expectancy has no relationship on behavioral intention in using fintech (H2). This suggests that because they are tech aware, pupils are not concerned about how simple it is to use the technology. The findings in the same trace indicate that behavioral intention in using fintech services are not prejudiced by hedonic motivation. Once more, this result contradicts some earlier research (Macedo, 2017) nevertheless, it also supports (Oliveira, Thomas, Baptista, & Campos, 2016). Therefore, it appears that students view the usage of financial technology breakthroughs as meaningful endeavors rather than just for fun. The intention of higher education students to habitués fintech is positively influenced by social influence and enabling factors. The opinions of others impact a decision in using the technology, and it is reliable with the results of the earlier study (Macedo, 2017).

Educational institutions offer sufficient assistance in utilizing fintech services, creating favorable conditions for students.

This study adds financial literacy and curriculum variables to the UTAUT2 model. The findings indicated that these two factors significantly influenced higher education students' intentions to adopt FinTech in management and commerce. When considering FinTech intention, the financial literacy variable is a strong predictor (â = 0.534). Adoption is greatly impacted by knowledge of many financial needs, including money management, interest rates, returns, financial threats, and investing. This is consistent with earlier research (Lusardi, 2019) which discovered that a thorough understanding of the financial elements will

persuade others to use the service. The curriculum variable was included as a forecaster of adoption which improved the novel UTAUT 2 model in the study. Curriculum had a significant relationship with intention to use the fintech technology. This outcome is in par with the results of (Alshraifa & Sanad, 2024) where students felt that, including FinTech in the curriculum will benefit them in their future careers. Courses that facilitate FinTech origination in higher education establishments are being developed by universities worldwide. The inclusion of FinTech educational resources in the curriculum is warranted, given the notable interest and acceptance of this topic among students studying management and commerce. This study supports previous research by demonstrating the beneficial impact of behavioural intention on the usage of fintech. Thus prevailing belief that people will employ fintech services if they have positive intentions toward the technology is reiterated by this outcome.

It has been demonstrated that adding financial literacy and curriculum factors to the original UTAUT2 model strengthened the model's ability to forecast how new technology will be adopted. The high R^2 score of 0.63 specifies that the model has 63% projecting power in terms of behavioral intention and 58% predictive power for technological use. The UTAUT2 model has been improved as a result of this research in the context of FinTech uptake among students in management and commerce at higher education institutions.

The subsequent noteworthy finding from this research is that it was able to demonstrate a favorable correlation between fintech adoption and educational impact among commerce and management students who are pursuing higher education. The model also explained 44% of educational impact. The idea is that integrating fintech tools and practices into commerce and management education could enhance learning outcomes, better prepare students for real-world applications, and improve the relevance of the curriculum.

5. Practical Implications

The study enhances the corpus of literature through recognizing the openings in understanding and potential negative effects of implementing fintech in higher education. It also provides recommendations for how instructors might successfully integrate fintech into their curricula. It has significant practical implications for academia and the financial technology sector. By investigating how higher education students adopt fintech solutions, the study offers valuable insights into integrating these technologies into commerce and management curricula. Educators can leverage these findings to design more relevant and

engaging coursework that mirrors current industry practices, thereby enhancing students' readiness for the digital economy. Additionally, the study underscores the importance of fostering digital literacy and practical skills through fintech tools, ensuring that graduates are well-equipped to meet the demands of modern financial environments. For institutions, this means adopting and promoting fintech solutions as part of their educational strategies to better align with industry trends and improve student outcomes. The practice of fintech tools in the teaching space can provide pupils with hands-on experience, making theoretical concepts more tangible. This could improve understanding and retention of material related to financial management, investment strategies, and digital payment systems.

6. Conclusion

The goal of the study was to look into how fintech adoption has shaped contemporary teaching methods in management and commerce. The findings attest to the research model's resilience in predicting both behavioural intention and the use of fintech technology demonstrating its strong explanatory power. The study's findings revealed that students' intentions to use FinTech in higher education institutions were influenced through variety of aspects, including financial literacy, facilitating circumstances, social influence, performance expectations, and curriculum. Higher education students' acceptance of FinTech is mostly determined by two factors: social influence and financial knowledge. Students' adoption of FinTech applications is not determined by factors such as hedonic incentive or simplicity of usage. This study also demonstrated a favorable correlation between the adoption of fintech and impact on commerce and management education. The findings advocate for a proactive approach to incorporating fintech solutions in academic settings, preparing students with the practical skills and knowledge necessary for success in a rapidly evolving digital economy. As educational institutions continue to adapt to technological advancements, this study offers a fundamental framework for mounting policies that link theoretical understanding & real-world implementation in the fintech realm.

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Assessment of Municipal Bodies through Municipal Financial Management Performance Index : A Comparative analysis of KMA and Non KMA Municipalities in West Bengal

Sᴜsʜovan Dᴜᴛᴛa ᴀɴᴅ Aʏan Majᴜmᴅaʀ

Abstract : *Issues in managing municipal finances in India are in the form of vertical and horizontal gaps or imbalances, as well as a low equilibrium trap among citizens, causing low allocative efficiency and leading to a huge strategic fiscal gap. Therefore, it is very much evident that the Indian scenario of municipal financial management is very gloomy, and as per available past literature and reports West Bengal, the second most densely populated state in India, seems to be of no exception. However, there has been a gap in relevant data of current times relating to the state to corroborate that notion. In this backdrop, the current study aims to assess the financial management conditions of Maheshtala Municipality, the most populated municipality, which has been taken as a proxy of the Kolkata Metropolitan Area (KMA) municipalities, and Burdwan Municipality being the most populated municipality, has been taken as a proxy of the non-KMA municipalities under West Bengal. Analysis has been done through the Municipal Financial Management Performance Index based on twenty-eight ratio indicators as designed by the researcher taking essence from earlier research studies specifically considering the municipal financial framework of West Bengal.*

Keywords : Vertical Imbalance, Horizontal Imbalance, Equilibrium Trap, Allocative Efficiency, Strategic Fiscal Gaps.

I. Introduction

Issues in the management of municipal finances in India are in the form of vertical and horizontal gaps or imbalances. Inadequate fiscal powers to municipal

Sushovan Dutta, Research Scholar, Department of Management and Business Administration, Aliah University, Kolkata, Email: sushovan11@gmail.com

Dr. Ayan Majumdar, (Corresponding Author) Assistant Professor, Department of Management and Business Administration, Aliah University, Kolkata, Email: axmajumdar@yahoo.com

government, and mismatch of funds, functions, and functionaries at the municipality level as a whole have plagued municipalities and ultimately led to a huge strategic fiscal gap. Therefore, it is very much evident that the Indian scenario of municipal financial management is very much gloomy. Though there have been several research and studies on municipal finance and municipal financial management in various states of India, research reports or relevant data specifically on the recent municipal financial management conditions and practices of the last 10 years in West Bengal state, are not available in either research literature or in state government reports. Therefore, a certain need has been felt to assess the recent financial management scenario of the municipalities of West Bengal and thus to check the current financial management conditions of the municipalities in West Bengal specifically, after the implementation of the recommendation of the 14th and 15th Finance Commissions which has resulted huge pumping of fund flow to the urban local bodies across India.

2. Review of Literature

Brown (1993) modelled the renowned 10-point test of financial conditions. The test calculates ten ratios of a municipality with population less than 100000. The Fiscal Capacity Analysis, a budgetary tool to analyse the budget trends and thus to help in budget projection and The Financial Trend Monitoring System (FTMS) by International City/ Country Management Association (ICMA). Wang et al. (2007) through their research had established a new method by which financial conditions can be easily realized through analysis of various dimension of solvency perspectives which aims to address the difficulties of previous methods. Ritonga (2014) modelled local government's financial conditions in Indonesia considering six dimensions to measure financial conditions. To measure the fiscal health of their local governments, various states have developed their particular systems as seen throughout the world including India. As an example, GASB under USA and National Municipal Accounts Manual (NMAM) 2004 issued by the Ministry of Urban Development, Government of India, which provides 26 indicators for measuring the financial management performances of municipalities.

3. Objectives of the Study

To propose a modified municipal financial management performance index especially applicable to the municipal financial environment of West Bengal and further to assess and compare the municipal financial management conditions of the selected sample municipalities under KMA and Non-KMA category of municipalities and thus to infer opinion on the general fiscal health of the municipalities of West Bengal.

4. Research Universe and Selection of Sample

The municipal bodies in West Bengal are broadly categorized into two categories, i.e.

1.   KMA municipalities (Kolkata Metropolitan Area Municipalities) and

2.   Non-KMA municipalities (Non-Kolkata Metropolitan Area Municipalities)

As far as the volume of urban population is concerned both categories of municipal areas have almost the same volume of urban population as a whole. So, one sample municipality from each stratum has been selected for our study. While selecting the sample the most populous municipalities of the KMA category and non-KMA category, i.e. Maheshtala Municipality and Burdwan Municipality have been chosen for the analytical study.

5. Sources of Data and Period of Study

The analysis is mainly based on secondary sources in the form of annual audited accounts which are based on the accrual basis of accounting following NMAM, 2004 for the study period of ten years i.e., 2012-13 to 2021-22.

6. Analysis Methodology

Analysis has been made with the help of ratio indicators following the trend of most of the earlier renowned research work as mentioned in the literature review.

Basically, the 'Municipal Financial Management Performance Assessment' can be viewed through four broad variables or verticals or parameter or diversified perspectives which may be summarized in the form of **'B.A.S.E.' perspectives. Where,**

'B' indicates Budget Implementation or Budget Management Variance Perspective.

'A' indicates Autonomy in the Municipal Fiscal base or Fiscal Independence perspective.

'S' indicates the Solvency perspective.

'E' indicates the Efficiency perspective.

These perspectives may be examined through the most accepted municipal financial management analysis tools or indicators as shown below:

Table-1 : 'B.A.S.E.' Perspective Indicators for Municipal Financial Management Performance Analysis

Perspective	Dimension	Perspective Dimension code	Name/Particulars of the Ratio Indicators	Ratio Perspective Code
B= Budget Implementation Variance Or Budget Management Variance	Expenditure Variance	B1	Capital Expenditure Variance	R1
			Revenue Expenditure Variance	R2
	Revenue Variance	B2	Own Source Revenue Variance	R3
			Total Revenue Income Variance	R4
A= Autonomy or Municipal Financial Independence	Revenue Autonomy or Self-sufficiency	A1	Tax Autonomy	R5
			OSR Autonomy	R6
	Expenditure Autonomy	A2	Financial Independence or Coverage Ratio	R7
			Total Dependency Ratio	R8
S= Solvency	Short Term Solvency or Liquidity	S1	Current Ratio or basic Liquidity Ratio	R9
			Cash Ratio	R10
	Long Term Solvency or Stability or	S2	Net Asset Ratio	R11
	Leverage		Loan to Reserve or Debt Equity Ratio	R12
	Budget Solvency or Operating Effectiveness	S3	Operating Ratio	R13
			Establishment Expenses to OSR Ratio	R14
			Fund Balance Ratio	R15
			Continuing Services Ratio	R16
	Service Level Solvency or Service Sustainability	S4	Tax Revenue per capita	R17
			OSR per capita	R18
			Total Operating Revenue per capita	R19
			REVEX per capita	R20
			CAPEX per capita	R21
E= Efficiency	Revenue Management	E1	Collection Efficiency Ratio	R22
			Tax Revenue to OSR Ratio	R23
	Expenditure Management	E2	Establishment Expenses to Operating Expenses Ratio	R24
			Non-Tax revenue to Operation and Maintenance cost Ratio	R25
			Operation and Maintenance Expenses to TOE Ratio	R26
			Asset Maintenance Ratio	R27
			Capital Asset Creation Ratio	R28

Source : Compilation of Author.

Ideal benchmarks or ratio standards for the 'BASE' Perspective indicators have been derived from previous research models and benchmark indicators of Brown (1993), Wang, et al. (2007), Ritonga (2012), NMAM, 2004, GASB, 1999, MFMA-SA, ICMA-FTMS, ICRA rating methodology, CRISIL methodology, CAG Manual, MPI, 2019, NIUA, CITY FINANCE PORTAL of GOI, etc. and thus a comprehensive set of analytical indicators have been devised considering the municipal finance scenario of West Bengal with applicable 28 ratios from available indicators which have as a whole formed the total analytical Municipal Financial Management Performance Analysis Framework.

Now the Municipal Financial Management Performance Index (MFMPI), as designed by the researcher, examines the dimensional performance of municipalities across a set of four perspectives. These four perspectives inculcate a total 10 dimensions and 28 indicators as shown above having been mainly influenced by the methodology of MPI, 2019 as issued by MoHUA, Govt. of India with certain required modifications suitable for 'Municipal Financial Management Performance Analysis' point of view. Since each of the 10 dimensions is equally crucial in municipal financial management performance analysis, they have been given an equal weightage. As a result, the four perspectives received the following weightage.

Budget Implementation Variance Perspective = 20%, Autonomy Perspective = 20%, Solvency Perspective = 40%, Efficiency Perspective =20%.

The set of 28 indicators under the 'B.A.S.E.' perspectives that form the Municipal Financial Management Performance Index are a combination of metrices that have varied nature and specifications/ benchmarks. So, a series of steps have been followed for comparability across the index. This has been outlined as below:

It may be noted that for some of the indicators, there is no fixed benchmark. For example, it is problematic to fix the optimum level of expenditure per capita for a particular municipality. In such cases, the national average has been taken as a benchmark and all municipalities will be scored based on the deviation from it. In some cases, like the Financial Autonomy Ratio, where the benchmark is 75%, there will be a capping at the benchmark. That is, municipalities with a higher Financial Autonomy ratio like 80% or higher will be awarded the same score as the one with 75%. However, those with a lower than 75% ratio will be penalized depending on the deviation from the benchmark. If the municipality ratio value is above or below the desirable benchmark capping (either greater than equal to or less than equal to) of the indicator as applicable the score is 100 and if the

unfavourable deviation is above 100% of the benchmark the score is 0, for other cases the score is based on deviation percentage to benchmark in 100-point scale.

Aggregation : Taking essence from the MPI, 2019 model as issued by GOI, the aggregation methodology of the Municipal Performance Index is based on three elements i.e. Indicators, sectors or dimensions, and perspectives or verticals. The perspective values are calculated by summing the weighted scores using the following formula:

Sectors or Dimensions Scores = Each indicator under the sectors or dimensions will be given equal weightage. The dimension values are calculated by summing up weighted scores using the following formula:

Dimension= Σ(Wi*indicators)

Perspective or Vertical = Σ(wi* Dimension Scores

Table-2 the weights and complete methodology for each perspective or verticals.

Budget Implementation Variance perspective (20%) (B)	Expenditure Variance (B1) Revenue Variance (B2)	B= (B1+B2)/2
Autonomy perspective (20%) (A)	Revenue Autonomy (A1) Financial Autonomy (A2)	A=(A1+A2)/2
Solvency perspective (40%) (S)	Short Term Solvency (S1) Long Term Solvency (S2) Budget Solvency (S3) Service Level Solvency (S4)	S=(S1+S2+S3+S4)/4
Efficiency perspective (20%) (E)	Revenue Management (E1) Expenditure Management (E2)	E= (E1+E2)/2

Municipal Financial Management Performance Index (MFMPI) Scores:

The final MFMP Index score is a weighted average of the scores of all the perspectives. This will be calculated using the following formula:

MFMP Index Scores= 0.20*B+0.20*A+0.40*S+0.20*E

7. Limitations of the Study

The study has been undertaken subject to certain other limitations. It is mainly related to financial aspects alone and it does not pay attention to other factors

like Human resource management, Civic services management, etc. Additionally, due to a shortage of time and difficulty in getting the data, only two municipalities have been selected for the study.

8. Analysis and Findings

Table-3 : MFMPI Analysis Sheet based on B.A.S.E. Perspective indicators

Ratio code	Average of the Ratio value (up to two decimal points) from 2012-13 to 2021-22		Magnitude of benchmark	Standard Ratio/ benchmark	Absolute Deviation (%) from benchmark value		Indicator based Score	
	Maheshtala Municipality	Burdwan Municipality			Maheshtala Municipality	Burdwan Municipality	Maheshtala Municipality	Burdwan Municipality
R1	0.76	0.49	≤	0.05	1420	880	0	0
R2	0.17	0.54	≤	0.05	240	980	0	0
R3	0.42	0.02	≤	0.05	740	0	0	100
R4	0.15	0.66	≤	0.05	200	1220	0	0
R5	0.12	0.03	≥	0.5	76	94	24	6
R6	0.29	0.22	≥	0.75	61	71	39	29
R7	0.59	0.33	≥	0.75	21	56	79	44
R8	0.5	0.61	≤	0.5	0	22	100	78
R9	2.01	0.94	≥	2	0	53	100	47
R10	1.48	0.07	≥	1	0	93	100	7
R11	0.81	0.96	≥	0.7	16	0	84	100
R12	0.23	0.06	≤	0.3	0	80	100	20
R13	0.94	0.98	≤	1	0	2	100	98
R14	0.69	2.56	≤	0.4	73	540	28	0

R15	2.48	15.36	$\geq$	1	0	0	100	100
R16	2.84	15.96	$\geq$	1	0	0	100	100
R17	178	141	$\geq$	311	43	55	57	45
R18	407	886	$\geq$	868	53	2	47	98
R19	1427	4038	$\geq$	2812	49	44	51	56
R20	1348	3912	$\geq$	3141	57	25	43	75
R21	603	1155	$\geq$	1314	54	12	46	88
R22	0.3	0.39	$\geq$	0.75	60	48	40	52
R23	0.44	0.16	$\geq$	0.6	27	73	73	27
R24	0.41	0.84	$\geq$	0.4	0	0	100	100
R25	0.67	2.03	$\geq$	1	33	0	67	100
R26	0.5	0.63	$\geq$	0.5	0	0	100	100
R27	0.04	0.02	$\geq$	0.08	50	75	50	25
R28	0.31	0.23	$\geq$	0.4	23	43	78	58

The analysis is based on the audited annual accounts of the selected sample municipalities.

Table-4 : Find Score Sheet

Final Score Sheet based on the indicators under BASE Perspectives	Maheshtala Municipality Final Score Sheet	Burdwan Municipality Final Score Sheet
Budget Implementation Variance Perspective Index Score (B)	0	30
Autonomy Perspective Index Score (A)	60	58
Solvency Perspective Index Score (S)	81	73
Efficiency Perspective Index Score (E)	68	63
Municipal Financial Management Performance Index (MFMPI) Score	**58**	**59**

After a thorough analysis (i.e. the individual ratio-based analysis the details of which have not been shown here due to shortage of space) it has been found that Maheshtala and Burdwan both municipalities have been under-performers in more than 18 indicators under various financial management perspectives resulting in final MFMI score of both municipality being less than 60% and therefore the general municipal financial management performance level of West Bengal encompassing KMA and Non-KMA category of municipalities have not been very optimistic keeping parity with national scenario. However, coming to the perspective-based comparative performance of the selected sample municipalities, we can see that Maheshtala Municipality has been a better performer in the Solvency and Efficiency Perspective Index and Burdwan Municipality has been a better performer in Budget Implementation Variance and Autonomy Perspective Index. Lastly, regarding the final MFMPI of the municipalities, Maheshtala Municipality scored 58% and Burdwan Municipality scored 59% indicating the selected sample under non-KMA municipal bodies are comparatively better performers despite getting lesser government financial help and less urbanized in comparison to the selected sample of KMA municipality.

9. Conclusion and Further Suggestions for Future Study

This research has empirically explored the financial management conditions of the selected municipality in the most acceptable methods i.e. through ratio analysis but this study is based on the annual financial data of only two municipalities of two different categories of West Bengal. However, it would have been better had this research included at least five sample municipalities of each type of municipality under each category, i.e. KMA and Non-KMA category of municipalities which would at least reflect the performance of each class of municipalities of West Bengal, and thus would be able to analyze the municipal financial management performance of the municipalities of West Bengal more broadly and acceptably.

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Green Investments in a Volatile World : Assessing the Resilience of the S&P BSE Greenex Index Amidst Geopolitical Shocks – A Study

NAVEENKUMAR K, DEEPAK K V AND SANATH KUMAR K

Abstract : *The Efficient Market according to the hypothesis, the stock market can be greatly impacted by geopolitical crises. This research attempts to look into the effects of geopolitical tensions, specifically focusing on the Russia-Ukraine War, the Israel-Hamas conflict, and the Red Sea crisis to evaluate the resilience of the S&P BSE Greenex Index. The research has been undertaken using, paired sample t-test to examine whether geopolitical tensions had any discernible impact on the Greenex. In the majority of cases analysed, geopolitical tensions failed to significantly influence the S&P BSE Greenex Index, highlighting its stability and superiority of Greenex in the face of external geopolitical factors.*

Keywords : S&P BSE Greenex Index, Geo-Political Events, Resilience, Red Sea Crisis, Israel- Hamas War, Russia Ukraine War.

I. Introduction

The question whether a geopolitical crisis has adverse effect on a particular stock market index has been of vital interest for investors for a long time. More often than not the event study methodology has been applied understand the effect of the event on a particular stock market index. This study analyses the impact of geopolitical conflict on the S&P BSE Greenex index.

With the awareness towards environment pollution and social ill deeds now a day's investors are inclined towards socially responsible investments, the return

Naveenkumar K, Lecturer, Department PG studies in Commerce, University College Mangalore, Mobile : 9743458590. E-mail: naveenperuvaje92@gmail.com.

Deepak K V, Assistant Professor, Department of Commerce, St Aloysius (Deemed to be University) Mangalore, Mobile : 9008242459. Mail : vkdeepak1994@gmail.com

Sanath Kumar K, Assistant Professor, Department of Master of Business Administration, Sahyadri College of Engineering and Management (Autonomous) Mangaluru, Mobile: 9606749538. Mail : skanthila@gmail.com

through which gives a feeling of satisfaction of fulfilling the individual responsibilities towards the society. Broadening the vision, some of the companies by taking initiative publish their sustainability performance reports by following the ESG principles (Hoti et al., 2005). The purpose of the Nifty 100 ESG Index is to represent the performance of the firms in the index by using the environmental, social, and governance (ESG) risk score. Each index component's weight is skewed according to the company's ESG risk score; that is, the weight of each constituents is determined by the company's free float market capitalization and modified ESG risk score. (Sandeep Singh., 2020).

Similar research in the area have found out remarkable effect of the Geo political turbulences on the stock market barring some of the exceptional cases. However, this research is evidence to the fact that Geo political turbulences might fail to negatively impact an index which has stock market Resilience due to the unique characteristics that it has.

2. Literature Review

2.1. Event Studies:

Kothari & Warner, (2006) Event studies provide fresh data demonstrating how the characteristics of event sample firms, including volatility; can influence the properties of event research techniques, which can differ by calendar period. According to Binder (1998) Using event studies as a regular methodology in financial and strategic economic research has made it possible to quantify how an event affects share prices. El Ghoul et al., (2023) Importance of selecting an event, deciding on a study period (Short vs. Long term), estimating abnormal returns, determining statistically whether the event in question results in a stable price reaction, and investigating the contribution of formal and informal institutions to the explanation of cross-national variations in price reaction should be remembered.Reeb et al. (2012) The event study, also referred to as the event study method (ESM), is an empirical technique designed to capture the financial impact of an event by examining the behaviour of stock prices around the event announcement (Campbell, Lo &MacKinlay, 1997; McWilliams & Siegel, 1997). An event study methodology, "determines whether there is an 'abnormal' stock price effect associated with an unanticipated event. From this analysis the researcher can infer the significance of the event". McWilliams and Siegel (1997) There is the rest documentation of the power and specification of the generalized sign test, which is based on the percentageof positive abnormal returns in an estimation period. In simulations using daily stock return data, the generalized sign test with both exchanges listed and NASDAQ stocks. Arnold R. Cowan (1992)

Several event studies have proved that major events like war, economic distress, allies of nations, international events will have significant influence on the performance of the Stock markets across the globe. When an event causes even minor increases in variance, the most commonly used methods reject the null hypothesis of zero average abnormal return too frequently when it is true, although they are reasonably powerful when it is false. Ana Paula Serra (2002)records the responses of investors to information changes that impact their assessment of the impacted companies' future earnings, i.e., how the stock market views (and reacts to) changes in the impacted companies' future profit stream.EkkehartBoehmer, Jim Masumeci, Annette B. Poulsen (1991) Since stock prices are thought to represent all information that is available to the public, they only fluctuate in reaction to information that investors are unaware of. (Fama, Fisher, Jensen, & Roll, 1969). The researcher searches for proof of an "abnormal return" (AR), which represents the event's unexpected financial impact on the firm's worth. The daily ARs are combined and referred to as "cumulative abnormal returns," or CARs, over time periods greater than a day (also known as "event windows"). (Brown & Warner, 1980, 1985).

By comparing actual and expected returns-which are calculated using data and modeling before the event window, or "estimation window"-it is possible to determine whether the stock market response is anomalous. (McWilliams & Siegel, 1997). In general, event studies face minimal challenges when using daily data. Usually, standard operating procedures are clearly defined, even in cases when unique daily data characteristics are ignored. Stephen J. BROWN Jerold B. WARNER (1985)Although they can vary, the short-term and long-term effects are constant, indicating that strategic implementation is also crucial (Zollo& Meier, 2008). ESM is also perfect for researching events that impact a large number of firms and maybe finding firm behaviors and characteristics as well as market variables that have a differential impact on investors' responses to different firms. Analysing the effects of macro-shocks like natural catastrophes or foreign currency crises is another use of ESM (King, 2015).Firm announcements on new product launches, mergers and acquisitions, new market entry, etc., or announcements from other entities, such as governments, regulatory authorities, and rivals, may be included in ESM-related corporate events at the micro level and in the marketing discipline. Warren, Ertekin, and Sorescu (2017). The ESM gives an objective assessment of company performance by concentrating on stock prices. A thorough literature study on the ESM was conducted by (Fama, Fisher,

Jensen, & Roll, 1969), and their findings provide a solid conceptual grasp of how the ESM might be applied in marketing research. Research in accounting and finance has increasingly employed the ESM to analyse how different events affect company stock prices (Cowan, 1992).

In contrast to the domains of accounting, finance, and management, the ESM's application in marketing research has grown over time (Binder, 1998; Boyd, Chandy, & Cunha, 2010; Corrado, 2011; Ball & Brown, 2013), although it remains glaringly low (Beckers, van Doorn, &Verhoef, 2017). In fields of importance to IB research, like internationalization, ESM has been widely embraced in accounting, economics, and finance (Sorescu et al., 2017; Das, McNeil, Pouder, & Daly, 2020).The stock market's assessments of (and investment responses to) rises and decreases in the future profit stream of the impacted firms are captured by ESM, which also records investors' responses to information changes that impact their assessment of the firms' future profits. Stock prices are thought to represent all information that is known to the public, therefore they only fluctuate when new information that investors are not aware of is released (Doukas&Travlos, 1988). When researchers are unable to witness the financial details, an event study can use high-frequency data to estimate the expected impact of new information, such as a new joint venture or a CEO's termination package. ESM, for example, has been applied to evaluate strategic choices (Merchant & Schendel, 2000).

ESM has a number of significant drawbacks. First and foremost, ESM is limited to listed (i.e., publicly traded) companies. Because there is no stock market data for privately held or fully state-owned companies, the approach cannot be used to them. However, listed but partially state-owned businesses (often known as hybrid or mixed businesses) can use ESM (Carvalho&Guimaraes, 2018).ESM assumes that stock markets are informational efficient, meaning that the price of a company's shares completely reflects all publicly accessible information pertinent to its prospects for the future, both before and after the announcement. ESM is also perfect for researching events that impact a large number of firms and maybe finding firm behaviors and characteristics as well as market variables that have a differential impact on investors' responses to different firms. Examining the effects of macro-shocks like natural catastrophes or foreign currency crises is another application of ESM (Fama et al., 1969). Country returns have an impact on a company's stock market performance. Therefore, modifications for financial integration and international trade may be necessary when using ESM in a multi-country context (Park, 2004).

2.2. Greenex Index

Bhattacharya Rajib (2013) These days, investors favour funding businesses that use environmentally friendly technologies and ethical business methods to lessen their carbon footprint. Kumari et al. (2013) GREENEX and carbon credit have a symmetrical and appropriately biased relationship. The choice to enter this market is influenced by social and economic elements such as population, power, oil and gas, and IIP. Bammi (2013) The daily return series of the stocks shows the impact on stock prices of companies that joined the BSE-GREENEX, confirming the stocks' effectiveness in the Indian capital markets. Shirisha and Divya (2014) A significant portion of the GREENEX global carbon credits came from the automotive and IIP sectors.

In 2017, Asia Pacific Index Limited developed a system for building Sustainability Indices for the S&P BSE. Together with the data and policies of the index, it described the qualifying requirements for the S&P BSE GREENEX index creation, as well as how the index is calculated and maintained. S&P BSE 100 firms make up GREENEX.

Raja (2018) compared performance of three indices i.e., BSE Greenex, BSE Sensex, and BSE - 100 for time period of March 2012 to March 2018 and finds Greenex and its constituent companies does not function more effectively than other indices. Kadam (2019) measured the performance of BSE-GREENEX Index and compares it with two other indices i.e., BSE -SENSEX & BSESENSEX 500 index to check which index is more profitable to the investors. Bammi (2013) employed event study method to investigate investors 'reaction to the announcement of stock being included in BSE Greenex and finds that Negative returns occur when that event study window, which means investors do not welcome inclusion of stock in green indices.

The study by Swahil et al. (2016) calculated Altman Z- score to access the financial performance and financial distress of stocks listed on BSE GREENEX. Their study concludes that almost half of the listed stocks are at risk of financial failure zone. Rahul (2017) compared volatility and return of SRI companies and traditional investments companies in India and Asia. His study reports lack of difference between these two types of investments companies with a single energy index exception having higher risk in comparison to others. Sanjay and Priyanka (2020) explored the behavioural anomaly of India ESG indices towards market indices. In order to assess its performance, their analysis incorporates two market indices, the BSE Sensex and BSE 500, as well as two sustainability indices, the BSE Carbonex and BSE Greenex. These four indices' performances are contrasted.

Though literature on BSE Greenex performance is limited, ample studies have been conducted on performance of other sustainability index like Lopez et al (2007) concludes that assuming there is a negative relationship between sustainability and financial performance of firms. Mallet and Michelson (2010) examine green funds, socially responsible funds (SRI), and index funds performance.The results of this study do not discover a substantial performance difference between index funds and green funds, or between index funds and SRI funds, even if their investigation shows marginal performance differences between the two types of funds since index funds outperform SRI funds.

Kumar et al. (2020) commented on market capitalization of Indian financial market for pre and post covid time. Their study found positive and significance effect of global pandemic on the market's performance and the market capitalization.

Sharma et al. (2021) explores if clean energy indexes follow the same trend as conventional indexes or the reverse. Their study uses econometric models to comment on causality and spill over effect of NASDAQ clean energy index with other NASDAQ indices. According to Rangotra Rahul's (2016) comparison of traditional and socially conscious investing, there is no difference between the two types of investments; however, there is one exception index, the energy index, whose risk is noticeably higher than the others. Giannarakis et al. (2016) looked at businesses and observed how environmental performance affected the disclosure of the company's environmental score. They discovered that there was a positive correlation between environmental performance and disclosure scores. Maji and Mondal (2015) analysed that more than 50% of green companies under-performed and found that investment decisions of companies are not affected by its eco-friendly decisions

When sustainable enterprises are compared to other firms in terms of return and risk, they show a positive significant return (Chan & Walter, 2014; Bensen et al., 2010; Lesser et al., 2014). When compared to market indices, the studies (Chang et al., 2012; Climent& Soriano, 2011; Silva & Cortez, 2016) discovered that green indices performed worse. Nevertheless, some research has also found a neutral effect, meaning that investors receive comparable profits whether they invest in market or green indices. According to (Mallet & Michelson, 2014; Dixon, 2010), green investing would raise risk if it increased returns.

2.3. The Russia Ukraine War

P G., Kumar K, S., & C. Bhat, D. (2022) Using the Nifty-50 index as a base, this study aimed to comprehend and analyse the impact of the crisis between Russia

and Ukraine on the Indian stock market. This study employs the Event Study approach, analysing changes in the Nifty-50 indices during a 16-day period (8 days of estimation and 8 days of observation) from February 8, 2022, to March 4, 2022. Sanath Kumar K, (2022) Russia's meagre 1% share of India's overall trade would hardly have an impact. The main worry, though, is the indirect effect-through the markets. Increased costs will undoubtedly hinder demand and consumption. The impact of the Russia-Ukraine war on metal index returns is explained by the event research approach, which looks at changes in index prices to demonstrate how an event influences market returns beyond expectations.

 Ten days are taken for the pre-event and ten days for the post-event phases of the event study. Cohen& Ewing, (2022) Countries worldwide are barely recovering from the economic impact of the covid-19 pandemic, the recent 2022 Russia attack on Ukraine could worsen the situation as global economies may witness yet another rise in commodity prices and 'supply chain chokeholds.'

Wang et al. (2022) evaluated the transmission of yields and commodity volatility in the period of war in Ukraine and show that return spill overs increase. During conflict, crude oil was a net transmitter of the return, while wheat and soybeans clearly receive the return spill overs. The spill over index volatility rises from less than 35% to 85% immediately after the beginning of the war. Umar et al. (2022) investigated the impact of geopolitical risk, GPR, generated by the Russia-Ukrainian conflict on both European and Russian bond, equity and commodity markets. The results "indicate that most assets show a mix of negative and positive relationship with GPR" and therefore this produces changes in asset returns under normal market conditions. Tosun and Eshraghi (2022) documented a statistically and economically significant market sanction imposed by investors on Reminders, which they attribute to "negative sentiment regarding companies that maintained their trade ties with Russia" after the February 2022 invasion. The Russian-Ukrainian military conflict resulted in a marked increase in geopolitical risk, and the economic sanctions imposed on Russia have damaged its economy.

2.4. The Israel Hamas War

Martins, (2023) The impact of the terrorist attack by Hamas against Israel on October 7, 2023, on the global bond, equities, and commodities markets was investigated in this study using the event study approach. The findings indicate that the Middle East area is the only region with negative anomalous returns in

the global equities markets. The three largest economies in the world-China, Europe, and the US-presented negligible anomalous returns. On the plus side, producers of natural resources who anticipate a short-term boost in commodity prices are benefiting from the rise in geopolitical risk. Ultimately, the findings demonstrate the presence of negative abnormal short-term returns in the bond markets. Sameer Patil (2023) The outbreak of Israel-Hamas hostilities, following the latter's deadly raid on 7 October 2023, has sparked never-before-seen violence in the Gaza Strip. The involvement of external powers, coupled with the regional powers' pursuit of geopolitical ambitions through proxies, threatens the fragile stability of West Asia. However, beyond the geopolitical implications lurks the threat of terrorist violence and radicalisation. ShambhaviNaik (2023) The paper concluded that The Israel-Hamas conflict will have a negligible impact on biotechnology in India. However, if the war continues, there might be an opportunity for India to attract international players to set up R&D or manufacturing units. India needs to create incentives to facilitate the entry and establishment of these players. O'Donnell & Centre for European Reform., (2008) The EU has to put everything on the line to help this most recent effort to put an end to the Israel-Hamas war. However, it should also push for fresh policies, especially with regard to Hamas, from its allies, especially the US and Israel.

2.5. The Red See Crisis

Theo Notteboom et al., (2024) explain The Red Sea crisis is expected to have varied impacts on different industries in India, with potential disruptions in trade routes and delays in delivery of goods affecting sectors such as capital goods, crude imports, fertiliser exports, steel, pharmacy, and textiles. However, the textiles industry is unlikely to be significantly impacted. Findings shows that disruption in trade routes due to the Red Sea conflict is causing delays and driving up costs, impacting various sectors including capital goods, crude imports, fertiliser exports. The steel sector and textiles industry are not expected to be significantly impacted. Notteboom et al., (2024) Authors have undergone an analysis of the ongoing Red Sea crisis, its impact on shipping and trade, the challenges faced by shippers, and the potential risk of inflationary pressures if the security situation does not improve significantly. Findings Shows that The Red Sea crisis has significantly disrupted shipping and logistics, affecting inter oceanic passages and routes due to a series of weather anomalies, military conflicts, and nautical accidents. The attacks by the Houthi militia have led to a dramatic reduction in trade through the Suez Canal, with shipping lines rerouting their vessels around the Cape of Good Hope.

3. Objective of the Study

This study, by taking S&P BSE Greenex Index, tries to understand and examine the impact of the Geo-Political tensions namely Red Sea crisis, Israel- Hamas war and Russia Ukraine war on this Index to demonstrate the comprehensive movements of the index prices.

4. Research Methodology

The event study methodology has been used to check whether Geo-political turbulences namely, Red Sea crisis, Israel- Hamas war and Russia Ukraine war, had significant impact on the cumulative average abnormal returns of S&P BSE Greenex during the event period. For the purpose paired samples t- test was used and p value was calculated by using SPSS.

The event study methodology has been used under this study which analysed the changes in the index prices which in turn reflects how the events affected market returns beyond expectations.The study was conducted by taking the estimation period of 200 days (-211 days of the event) and event period of 20 days (-10 to +10 days of the event). The event study timelines are as follows:

Event	Estimation period: 200 days (-211 to -11)	Event period: 20 days (-10 to +10)
Russia- Ukraine war	26/04/2021 to 9/02/2022	10/02/2022 to 14/03/2022
Israel- Hamas war	02/12/2022 to 21/09/2023	22/09/2023 to 23/10/2023
Red-Sea crisis	14/12/2022 to 4/10/2023	05/10/2023 to 03/11/2023

Index values were collected from the official website of NSE India. It is assumed that previous 40 weeks' performance is normal hence we take that period as a base for comparison. The event period is the period in which we suspect the influence of the said event. Event day or day zero is a day in which announcement of the specific event took place, the year the date on which the announcement of Israel- Hamas war was been made (BHAT DEEPA C et al., 2022)
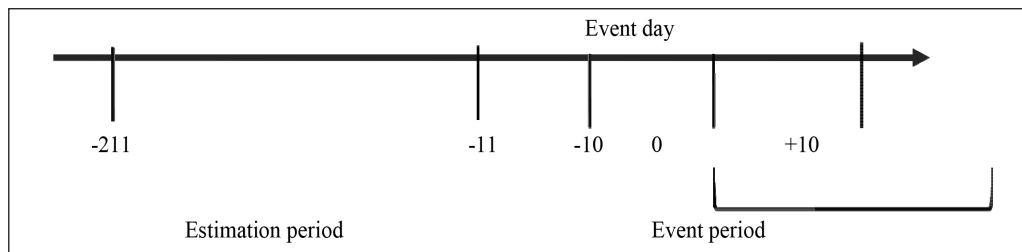
According to EMH (Eugene FAMA, 1970), it is not possible for any participant in the market, to outperform the market by earning abnormal returns as the stock prices quickly adjust to all the publicly available information. To empirically test the market efficiency, especially the semi-strong form of market efficiency during the event of the Israel-Hamas war, the event study methodology is adopted by taking an event window of 35 days.

5. Calculation of Abnormal Returns

The values in the Table 1 are calculated as follows:

1. %Average Abnormal Return

    %AAR=Daily Returns-Expected Returns*100/Daily Returns

    % Daily Returns:
    Rt= (Pt-Pt-1) *100/Pt-1

    Where, Pt = Closing NSE Nifty 50 Index value of the current day

    Pt-1 = Closing NSE Nifty 50 Index value of the previous day

    **Expected Returns is the average or mean returns of 200 days (-11 to -211 days of event date)

2. Cumulative Average Abnormal Returns:

    CAAR is the summation of all the % AARs calculated to know the total abnormal returns made before and after the event. CAAR by giving a clear picture of the cumulative abnormal returns, in case the influence is not completely reflected on the date of the event, acts as an effective tool of analysis in addition to the % AAR.

3. Standard Deviation :

$$\sqrt{\sum\left(xi-\left(x^-\right)\right)^2} \div n$$

    Whereas,
    σ = Standard Deviation
    xi = Terms Given in the Data
    x = Mean
    n = Total number of Terms

4. Skewness :
    Skewness has be calculated as: 3(mean-median)/ Standard deviation.

The above values have been calculated by using MS Excel.

6. Hypothesis

For the statistical test the hypothesis is stated as below :

H$_1$: There is a significant difference between the Average Abnormal Returns of estimation period and event period of the Red Sea crisis on S&P BSE GREENEX Index.

H$_2$: There is a significant difference between the Average Abnormal Returns of estimation Period and event period of the Israel- Hamas war on S&P BSE GREENEX Index.

H$_3$: There is a significant difference between the Average Abnormal Returns of estimation period and event period of the Russia Ukraine war on S&P BSE GREENEX Index.

The hypothesis testing is done using a paired sample t-test to understand if there is a significant difference between Average Abnormal Returns of estimation period and event period.

7. Data Analysis

7.1. Conceptual Model

The geopolitical tensions, specifically the Israel-Hamas conflict, the Russia-Ukraine war, and the Red Sea issue, are probably going to affect the S&P BSE Greenex Index's values.

 Conceptually this can be shown from the following model.

Figure-1 : Conceptual Model
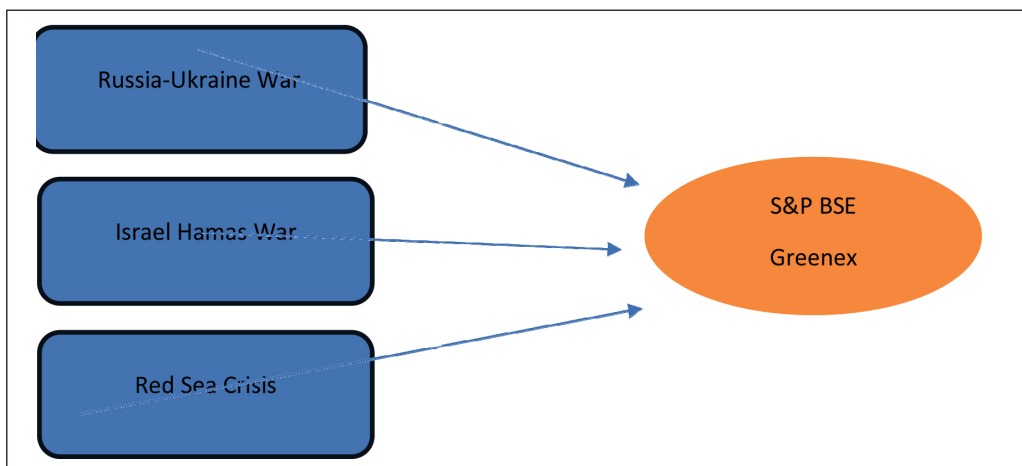
Table-1 displays the average daily returns of the S&P BSE Greenex as well as the percentage daily average abnormal return, cumulative average abnormal return, and t value, which are computed using AAR and CAAR, In order to assess the significance of the events-the Red Sea Crisis, the Israel-Hamas War, and the Russia-Ukraine War.

The outbreak of war can lead to a sharp sell-off in stocks. At the same time, investors may move towards traditionally safer assets like gold, bonds, or currencies perceived as safe havens. However, the narrative with Greenex index is somewhat different because those investors who invest in green economy stocks are not just looking for higher returns but also part of the sustainable economy. Therefore, the panic selling that we see in the traditional indices we might not see in the S&P BSE Greenex.

Table-1 : Red Sea Crisis, Israel- Hamas War, Russia - Ukraine War - Returns, AAR and CAAR

Days	Red-Sea Crisis				Israel- Hamas War:				Russia-Ukraine War:			
	% AAR (1)	CAAR (2)	SD (3)	SKEW (4)	% AAR (1)	CAAR (2)	SD (3)	SKEW (4)	% AAR (1)	CAAR (2)	SD (3)	SKEW (4)
10	0.81	-2.94			-2.70	-5.62			2.76	-13.55		
5	1.17	-3.74	1.51	-1.62	0.04	-2.92	1.41	-1.17	-2.33	-16.31	2.71	1.52
4	-1.61	-4.92	1.46	1.39	-0.73	-2.95	0.40	1.45	-1.44	-13.97	0.47	1.51
3	-1.00	-3.30	0.30	0.34	-0.58	-2.22	0.59	1.60	-2.17	-12.53	1.15	0.98
2	-1.34	-2.30	0.22	-1.48	0.37	-1.65	0.65	-1.29	0.09	-10.37	1.91	-0.55
1	-0.92	-0.97	0.38	-0.31	0.69	-2.02	0.85	-1.46	1.63	-10.45	3.77	-1.41
0	-0.58	-0.04	0.22	-1.43	-0.92	-2.71	0.83	-1.21	-5.54	-12.09	3.63	-0.80
-1	-0.49	0.54	0.22	1.43	0.26	-1.79	0.84	-1.14	-0.94	-6.55	2.54	-1.68
-2	-0.15	1.03	0.31	-0.28	0.73	-2.05	0.88	-1.19	-1.35	-5.61	0.25	1.59
-3	0.13	1.18	0.38	-0.78	-0.98	-2.78	0.91	1.50	-1.42	-4.26	0.14	1.29
-4	-0.64	1.05	0.75	-0.05	-0.67	-1.79	0.180	-1.73	-1.14	-2.84	0.35	-0.61
-5	0.87	1.69	0.85	-1.72	-0.67	-1.12	0.12	1.73	-1.85	-1.70	1.01	0.82
-10	0.82	0.82	1.79	-1.73	-0.45	-0.45	0.83	1.60	0.15	0.15	1.43	-1.16
-11	-2.26	0.07	2.13	-1.29	0.88	-0.01	1.14	-0.506	0.94	0.15	4.72	-1.67
-20	1.85	2.33	2.39	-1.73	1.82	-0.89	1.22	-0.66	-7.61	-0.78	5.95	-1.27

-30	1.92	0.49	1.68	-1.72	-0.62	-2.71	1.26	1.20	3.85	6.83	5.81	-0.85
-40	-1.03	-1.43	1.47	0.05	0.04	-2.09	1.04	0.98	-0.15	2.98	2.65	1.44
-50	0.42	-0.40	1.36	-0.19	1.43	-2.13	0.88	-1.56	-1.18	3.13	2.79	-1.47
-60	1.69	-0.82	0.94	-1.02	1.70	-3.57	0.76	-1.50	-5.42	4.31	3.11	-1.08
-70	2.27	-2.51	1.04	-1.14	0.25	-5.26	0.72	0.73	0.65	9.73	3.14	1.24
-80	0.25	-4.78	1.11	1.66	0.79	-5.52	0.46	-0.48	-3.82	9.08	3.71	-0.62
-90	0.45	-5.03	0.20	0.07	1.18	-6.31	0.19	-0.60	3.55	12.90	3.82	1.25
-100	0.66	-5.48	1.28	1.68	1.03	-7.49	0.34	1.34	-1.90	9.35	2.73	-0.47
-110	2.77	-6.14	1.70	0.72	1.68	-8.51	1.27	1.23	1.26	11.25	2.66	-0.56
-120	-0.60	-8.91	2.40	-1.18	3.48	-10.19	2.06	-0.36	3.40	9.99	1.13	1.44
-130	4.06	-8.31	3.12	1.41	-0.64	-13.67	2.83	1.32	1.70	6.59	0.85	-0.61
-140	-1.88	-12.37	3.25	1.64	-1.94	-13.04	1.16	0.36	2.73	4.90	2.29	-1.34
-150	-1.20	-10.49	0.74	-0.24	-2.96	-11.10	1.15	0.34	-1.65	2.17	2.43	1.69
-160	-2.68	-9.29	0.75	1.04	-0.65	-8.14	1.42	1.64	-1.31	3.82	0.78	1.36
-170	-2.22	-6.61	1.54	1.56	-3.27	-7.49	1.47	-1.71	-0.16	5.13	2.16	1.19
-180	0.19	-4.39	1.22	0.85	-0.77	-4.22	1.35	-1.62	2.88	5.30	1.63	1.55
-190	-1.38	-4.58	1.69	-0.22	-1.09	-3.45	0.84	-1.44	0.34	2.41	1.29	-1.00
-200	-3.20		1.22		-2.36				2.07		1.28	
-210												

Source; as computed and compiled by the authors.

The idea behind calculating abnormal returns is that there shouldn't be any abnormal returns following an event if it had no influence. But occasionally, the effects of the incident could show up in the pricing a few days later. In these situations, a more accurate statistical measure is the cumulative average anomalous return.

7.2. Red-Sea Crisis

During the estimation period of the Red Sea Crisis, the CAAR was flatter; however during the event period the CAAR was negative, suggesting that the event had a rather evil impact on the S&P BSE Greenex Index.

7.3. Israel- Hamas War

Here also one can make note of the fact that during the estimation that the CAAR was flatter; however, during the event period the CAAR was negative, suggesting that the event had a rather evil impact on the S&P BSE Greenex Index.

7.4. Russia-Ukraine War

From the analysis it can be observed that, during the estimation that the CAAR was flatter, however during the event period the CAAR was negative, suggesting that event had a rather evil impact on the S&P BSE Greenex Index.

Chart-1 : AAR in Estimation Period and Event Period of Red Sea Crisis
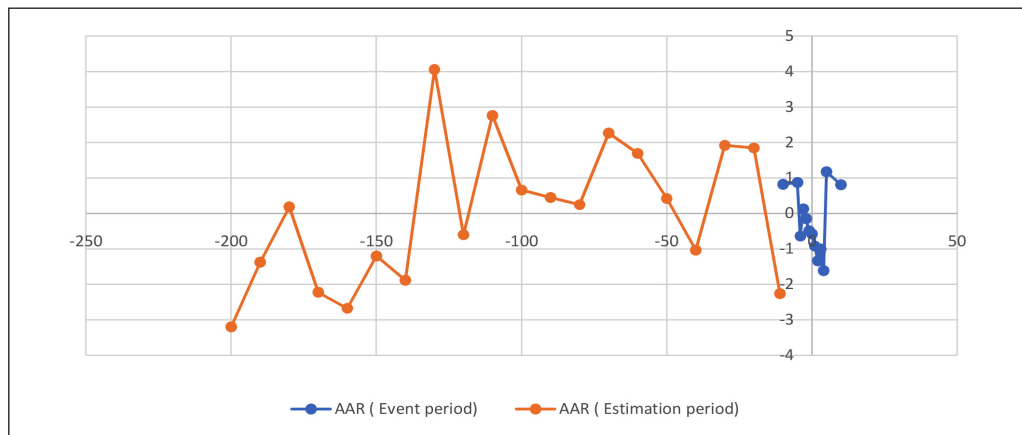
Chart-2 : AAR in Estimation Period and Event Period of Israel- Hamas War
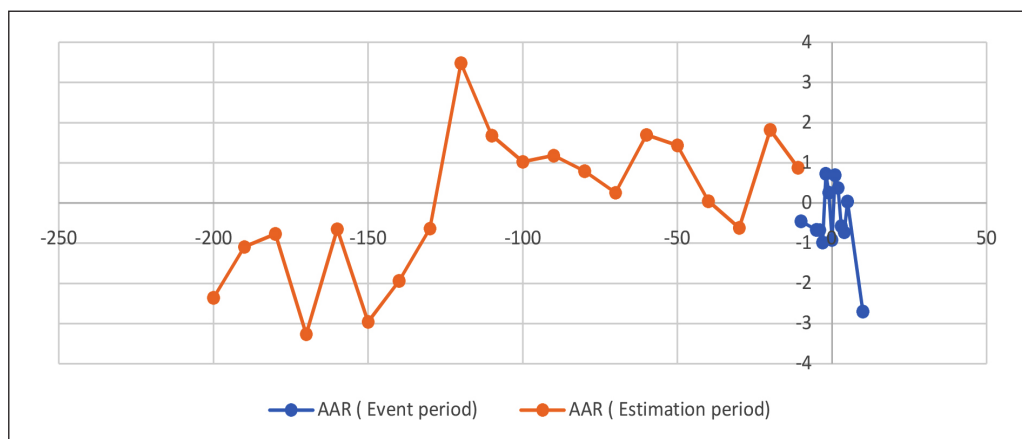
Chart-3 : AAR in Estimation Period and Event Period of Russia-Ukraine War
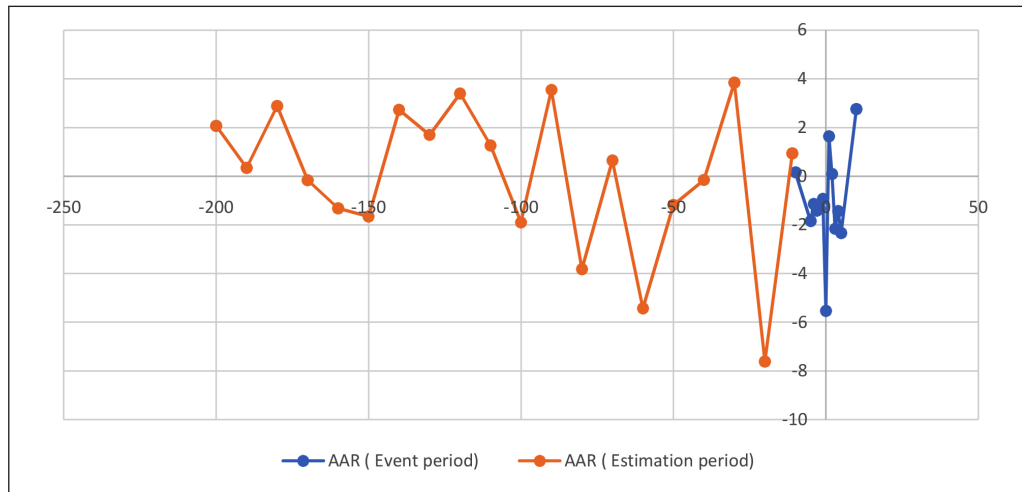
Table-2 : Results of Statistical Tests of AAR for S&P BSE Greenex Index upon the Impact of Red Sea Crisis

Paired Samples Test:

		Paired Differences							Sig. (2-tailed)
				Std. Error Mean	95% Confidence Interval of the Difference				
		Mean	Std. Deviation		Lower	Upper	T	df	
Pair 1	VAR00001 - VAR00002	2.23352	5.63123	1.56182	-1.16940	5.63644	1.430	12	.178

A paired samples t-test is used to test the first alternative hypothesis, which states that there is a significant difference between the Average Abnormal Returns before and after the Red Sea Crisis announcement on the S&P BSE Greenex index. The p-value obtained is 0.178, indicating that the alternative hypothesis is rejected at the 5% significance level. This suggests that the Red Sea Crisis had no effect on the S&P BSE Greenex Index and that there were no statistically significant abnormal returns.

Table-3 : Results of Statistical Tests of AAR for S&P BSE Greenex Index upon the Impact of Israel Hamas War

Paired Samples Test:

		Paired Differences					T	Df	Sig. (2-tailed)
				Std. Error Mean	95% Confidence Interval of the Difference				
		Mean	Std. Deviation		Lower	Upper			
Pair 1	VAR00001 - VAR00002	2.94462	4.90339	1.35996	-.01848	5.90771	2.165	12	.051

The paired samples t-test is used to test the second alternative hypothesis, which states that there is a significant difference between the Average Abnormal Returns before and after the Red Sea Crisis announcement on the S&P BSE Greenex index. The p-value obtained is.051, meaning that the alternative hypothesis is rejected at the 5% significance level. This suggests that the Israel-Hamas conflict had no effect on the S&P BSE Greenex Index and did not provide statistically significant anomalous returns.

Table-4 : Statistical Test Results of AAR for S&P BSE Greenex Index upon the Impact of Russia Ukraine War.

Paired Samples Test:

		Paired Differences					T	Df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	VAR00001 - VAR00002	-15.04505	3.91865	1.08684	-17.41307	-12.67703	-13.843	12	.000

The third alternative hypothesis, which is tested using the paired samples t-test, states that there is a significant difference between the Average Abnormal Returns on the S&P BSE Greenex index before and after the announcement of the Russia-Ukraine War. The p-value obtained is.000, suggesting that the alternative hypothesis is accepted at the 5% significance level. This suggests that S&P BSE Gr was impacted by the Russia-Ukraine war.

8. Findings

1. Of late the globe has been witnessing a surge of violence and instability, as Hamas fighters launch lethal offensive on civilians in Israel, Russia invades Ukraine, and Iran and North Korea come up with nuclear threats. Wars and stand-offs like these have global implications, not only for peace and security, but also for economies and global stock indices. Impacted by investor psychology of fear, these geo political turbulences do have a negative impact towards global supply chains, the commodity prices and stock market indices.

2. Though Russia-Ukraine War did impact the S&P BSE Greenex Index, Red Sea crisis and Israel-Hamas conflict did not have any significant impact on the returns of S&P BSE Greenex Index. The findings suggest that the S&P BSE Greenex Index was not considerably impacted by global evil factors that too the geopolitical incidents and situations.

3. The findings suggest that the S&P BSE Greenex Index was not considerably impacted by global geopolitical conflicts. This result emphasizes the index's robustness by indicating that, despite outside geopolitical influences, it remains largely steady and indeed possess stock market resilience.

9. Practical Implications

1. Due to a sense of fear and uncertainty geopolitical turbulences result in increased volatility in the stock market as market react to news and events. Investors need to be cautious while investing in the stock market during geopolitical crisis.

2. Geo-political tensions can disrupt Global supply chains hinder the movement of commodities between the countries and lead to an increase in commodity prices. Hence market participants in the commodity market also need to keep an eye on the geo political turbulences.

3. These conflicts influence currency exchange rates, which impact the competitiveness of companies operating in global markets. Investors who

invest in companies which have Global exposure should keep this in mind while taking their investment discussions.

4. With each passing day geo-political tensions around the globe have been increasing and this suggests that each country has to strengthen its National Defence system. The countries can give more focus on indigenous production of arms, ammunitions and weapons and if need arises import sophisticated combat vehicles. This will not only be crucial in the times of war but also make other countries hesitant to invade the country which has massive defence strength.

10. Conclusion

Significant global conflicts including the Red Sea crisis, Israel-Hamas conflict, and Russia-Ukraine War occurred, however the S&P BSE Greenex Index was largely untouched. The study evaluated the effects of these crises on the stock market, concentrating on the S&P BSE Greenex Index, using a paired sample t-test and Cumulative Average Abnormal Returns (CAAR) computations and it was found that though Russia-Ukraine War did impact the S&P BSE Greenex Index, Red Sea crisis and Israel-Hamas conflict did not have any Significant impact on the returns of S&P BSE Greenex Index. The findings suggest that the S&P BSE Greenex Index was not considerably impacted by global concerns. This result emphasizes the index's robustness by indicating that, despite outside geopolitical influences, it remains largely steady. The resilience of the index can be ascribed to the incorporation of companies that fulfil Environmental requirements, which presumably mitigates the negative impact of geopolitical disruptions.

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A Critical Analysis of Entrepreneurial Intentions Among India Rural Girls

TUSHAR CHAUDHARI

Abstract : *Investigating the entrepreneurial aspirations of rural college girls is the goal of this study. Government backing, family support, and soft skills are the constructs used to analyse entrepreneurial intention. A questionnaire distributed to college girls' students in the Indian district of Nagpur provided the data needed to evaluate the hypothesis. Using PLS-SEM, data collected from 381 respondents is used to investigate the hypothesised correlations. It has been noted that, in contrast to soft skills, opportunity recognition does not successfully buffer the relationship between EI and government, family, or social support. In no construct does creativity moderate. The results furnish policymakers in India with empirical evidence. Legislators ought to start a unique initiative to encourage collegiate female entrepreneurship in remote areas. In addition, the federal government's unique efforts attract university girls, but their families will also take a strong interest in entrepreneurship. It is believed that among rural college ladies, creativity, and soft skills are crucial determinants that impact their predisposition for business ownership.*

Keywords : Soft Skill, Government Support, Family Support, opportunity recognition, creativity, entrepreneurial intention

I. Introduction

The process of establishing a firm as a distinct entity from any other economic activity, such as employment or the practice of a profession, is known as entrepreneurship (Chaudhari, 2021b). Business people are vital to a country's advance, especially in the countryside. (Frese & Gielnik, 2023) propagated that due to noticing, identifying, and seizing openings necessit at esrepetitive succession of acts rather than a straight line of actions, entrepreneurship can be

Dr.Tushar Chaudhari, Associate Professor, Seth Kesarimal Porwal College Kamptee, tusharvchaudhari@gmail.com, 9921403902

viewed as a process. (Wahyuni et al., 2023) noted that as a result of economic expansion and the increase in assignments, many of nations have set up organizations and policy initiatives to promote entrepreneurship to opportunities from this advantageous outside influence. In today's setting, government efforts internationally focus on encouraging women to pursue careers as businessmen. The administrations of every nation are actively pushing for female gender equality. The rising number of female entrepreneurs around the world has garnered a lot of attention. Greater efforts in this area will be made throughout the decade to accomplish economic projections and attain a balanced region. (Avelar et al., 2024) narrated that studies on business have zeroed in entrepreneurship because of its propensity to spur positive shifts and create the economy's durability. While the percentage of women is roughly equal, there is still a substantial earnings discrepancy, particularly in India. Therefore, it is imperative to investigate the causes of economic inequality and develop trials to rally the rank of females. Promotion and encouragement of women as entrepreneurs are the basis that has been accepted and used across the globe. To respond to shifting trends, take on global markets, stay relevant, and pursue greatness in the entrepreneurial sphere, women entrepreneurs need to be properly molded with entrepreneurial traits and talents.(Sahoo, 2016) While the percentage of women is roughly equal, there is still a substantial earnings discrepancy, particularly in India. Therefore, it is imperative to investigate the causes of economic inequality and develop eventstoprogress the position of females. Promotion and encouragement of women as entrepreneurs are the basis that have been accepted and used across the globe.(Dr. Jai Pratap Singh, 2021) concluded that a girl's future and further education may also be greatly aided by appropriate guidance and counseling for parents who are illiterate, fee reductions, and other services provided for rural girls in regards to career development and higher education. (Kashmiri & Akhter, 2017) suggested that government proclamations about free enterprise will go a extended method to ensure sustainability and optimistic commercialr epetition, as most support programs are established, sponsored, and led by the government, particularly in developing republics. According to (Egwu, 2014) the creation of infrastructure, such as a robust road network as well as trustworthy power and water materials, should be emphasized by the government to stimulate entrepreneurship. In the view of (Sarstedt et al., 2020) the two most prevalent tactics that foster this impact are moderation and mediation.Even though investigations on female or women's entrepreneurship have become increasingly vital, more research is still desired (Ferreira et al., n.d.). In the view of (Chaudhari, 2023b) Businesspersons must have the aptitude to notice opportunities. According (Dewitt et al., 2023), government

agencies and local government bodies should make family support services more accessible to support the growth of female entrepreneurship. These services can empower women and encourage entrepreneurial thinking without making them feel bad about their obligations to their families or unjust expectations. This conversation has yielded following research questions:-

RQ1 : What is the relationship between soft skills, family support, government support and entrepreneurial intention among college girls students in rural India?

RQ2 : What is the mediating role of opportunity recognition in soft skills, family support, government support and entrepreneurial intention?

RQ3 : What is the moderating role of creativity in soft skills, family support, government support and entrepreneurial intention?

Foundation of entrepreneurship invader is college female students. The research paper is put together as tracks: the hypothetical milieu and hypotheses are presented in the first section, and the conceptual model is constructed and measures and analysis are labelled in another segment. The fallouts are illustrated in the following part. The article concludes with limitations and the need for more research.

2. Review of Literature and Hypotheses Development

2.1. Soft Skills, Opportunity Recognition and Entrepreneurial Intention

(Zaharim et al., 2012) has narrated that skill involves an ability to successfully carry out a particular job. In the opinion of (Dr. R. Rajendran, 2006) Soft abilities are known as skills that surpass technical knowledge and proficiency in the chosen profession and are necessary for a person to adapt to, thrive in, and survive in their environment. Soft skills are related with individual behaviour and his perception of relating with something (Chaudhari, 2021a). The report (Soft Skills for Business Success Deakin Co., 2017) stated that soft skills are an ensemble of bilateral or intrapersonal abilities that are often utilized in the corporate world and are a necessity for individuals.(Ismail Syed Mohamad et al., n.d.) pointed out that Entrepreneurship Skills are among the seven vital parts of soft skills. (Majid et al., 2012)stated that in the modern era, soft skills are crucial for both job achievement and relationships with others. According to (Sunan & Surabaya, 2022) Many of the early people decide to make entrepreneurship their job. Both recent college graduates and current students are opting to start, build, and extend their own businesses as well as form business

networks. The development of an organization demands commitment, which can enhance soft skills in entrepreneurship. (Ummatqul Qizi, 2020) have found that the results of countless surveys and studies reveal that there is an increasing recognition that hard skills alone are insufficient for professional success, especially in today's dynamic, distributed, and complex workplace. (Succi & Canovi, 2020) A large number of the early adopters choose to become entrepreneurs. Present students and recent college graduates are choosing to establish, grow, and expand their own companies in addition to creating business networks, be independent and results-driven, form strong bonds within teams, and adjust to shifting scenarios. The crucial component of the entire entrepreneurial procedure is recognizing opportunities. The research conducted by(Hassan et al., 2020a) have emphasized the fact that opportunity recognition is critical in entrepreneurship.

In their research (Tripathy, 2020); (Vasanthakumari, 2019), (Bardy et al., 2017) found the significant relationship between soft skills and opportunity recognition. Similarly, the book by(Nagy, 2019) emphasizes the worth of soft skills in opportunity recognition (Salun et al., 2021) concluded that the acquisition of soft skills related to entrepreneurship should begin at the bachelor's gradation equal of higher education. Similarly, the research conducted by (Holmberg-Wright, 2016)have strongly felt the need to develop soft skills for vital assistance to entrepreneurs. The research conducted by (Pebrianto & Puspitowati, 2022); (Salun et al., 2021); (Tem et al., 2020); (Ubfal et al., 2020); (Sulieman Alqatawenh et al., 2021); (Benedicta Prihatin Dwi Riyanti, 2016a); (Hossain et al., 2020) originateam omentous stimulus of SS on EI. However, there is scarcity of the said research among college girls especially in rural areas specially, hence the following hypothesis is formulated:

H_1 : Soft skills of rural college girls have a significant impact on their opportunity recognition skills.

H_2 : Soft skills of rural college girls have a significant impact on their entrepreneurial intention.

2.2. Government Support, Opportunity Recognitionand Entrepreneurial Intention

(Zhang et al., 2022) has made abundantly clear that there are two ways in which the government contributes: initially, through legislative assistance related to tax relief, and then, through supplementary assistance with services in the form of entrepreneurial guidance. (Faisal Aziz et al., 2021) pointed out that a favorable atmosphere for enforcing entrepreneurial intent is fostered by government support. (Minniti, 2008) stated that the legal frameworks for entrepreneurship

are formed by government policies, which encourage specific ventures while preventing others. (Parvaneh Gelard, 2011a) stated that Governments that want to encourage entrepreneurship do so by creating and implementing laws that are intended to promote small firms and entrepreneurs in their endeavors and increase the number of these entities. (Richard Denanyoh et al., 2015) revealed that the government supports business owners by funding vital infrastructure projects, including constructing improved roadways, water supply, and electrical supplies. Moreover, impediments to business registration and licensing were administrative bottlenecks and corruption. Research conducted by (Farr-Wharton & Brunetto, 2007a) exposedno noteworthy association between government support and opportunity recognition. While (Kaya, 2019) have found the favourable effect.

(Israr & Saleem, 2018); (Hamdan et al., 2019); (Waseem et al., 2021); (Khan & Imad Shah, 2020); found noteworthy connection between government support and EI. Based on this discussion the relationship, particularly in college girls of rural areas was saughted to be verified. Hence, the following hypotheses were framed:

H_3 **:** Government support for rural college girls' students has significant impact on their opportunity recognition skills.

H_4 **:** Government support for rural college girls' students have significant impact on their entrepreneurial intention.

2.3. Family Support, Opportunity Recognition, and Entrepreneurial Intention

In the opinion of (Annisa et al., 2021a),Family aid can be split into four types: instrumental, educational, emotional, and encouraging. While (Osorio et al., 2017)mentioned individual and corporate guidance, pecuniary, substantial, and demonstrative access are the integral parts of family support.

(Ahmed et al., 2021) pointedout, without family support, people will not recognize their complete forte. Entrepreneurs at an early stage rely heavily on family support (Parvaneh Gelard, 2011b). (Jennings & Mcdougald, 2007) believes that individuals becomes fascinated by entrepreneurship as they wish to experience the equilibrium between household and work. Thus, they get the finest family support. (F. Xu et al., 2020) mentioned that household actions have an indispensable character in the empire-building course. (Ruiz-Palomino & Martínez-Cañas, 2021a)mentioned that family support plays a more sophisticated role than friends in determining EI. In the opinion of (Hieu et al., n.d.),stronger family support makes people less afraid and self-assured to face hurdles and

succeed in their business. In the learning steered by (Qazi et al., 2022) demonstrated a beneficial relationship between opportunity recognition and family background.

The investigation directed by (Manolova et al., 2015), (Annisa et al., 2021a), (Altinay et al., 2012), (Meroka, 2023), (Hieu et al., n.d.), (Ugwueze et al., 2022); (Ikhram & Novadjaja, 2020) found the strong association between family support and EI.On the conflicting (Okto et al., 2023) originate no rapport between FS and EI. (Ruiz-Palomino & Martínez-Cañas, 2021a) find a clear correlation between opportunity recognition and family support. Therefore, the following hypothesis was put forth:

H₄ : Family support for rural college girls students has a significant impact on their opportunity recognition skills.

H₅ : Family support for rural college girls students has a significant impact on their entrepreneurial intention.

2.4. Mediating Role of Opportunity Recognition

O.R. is the vital division in the commercial progression (Kontinen & Ojala, 2011).(Tang, 2010) emphasised three main aspects in opportunity recognition viz human capital, social capital and social skills.(Tian et al., 2022)pointed out that thetenure O.R. refers to "The awareness of a plan/chance about an appropriate combination of knowledge, skills, and resources that can lead toward starting a profitable company with earning ability". In the opinion of (Ardichvjli & Cardozo, 2000),three key elements play a vital role in categorizing occasions: preceding data of markets and client issues, networks of entrepreneurs, and entrepreneurial attentiveness.

(Hassan et al., 2020b) mentioned that in entrepreneurship, the process of identifying potential profitable business endeavors is known as opportunity recognition. In the opinion of (Ucbasaran et al., 2008), since they are presented with greater options, entrepreneurs who see greater opportunities could decide to pursue those that are of greater value and have the potential for earning greater revenue. (Ucbasaran et al., 2008) considers that a key question in the realm of entrepreneurship studies is how to recognize opportunities. (Gartner et al., 2004) pointed that several scholars have tried to incorporate opportunity recognition into their models of the tactical procedure since Shane and Venkataraman argued that this concept was an essential aspect of entrepreneurship. (Ardichvili et al., 2003) claimed that 69% of entrepreneurs are driven by opportunities, indicating that in economies that are driven by

factors and efficiency, they choose to follow an opportunity for their entrepreneurial motives rather than a requirement.The research conducted by (Hassan et al., 2020b); (Jarvis, 2016); (Ledi et al., 2022) showed thew positive relationship between Opportunity recognition and EI. On the other hand, (Cieslik & Hatak, n.d.) Showed the adverse relationship.

H₆ : Opportunity recognition skills of rural college girls have a significant impact on their EI.

H₇ : opportunity recognition skills of rural college girls mediate the relationship between soft skills and EI.

H₈ : Opportunity recognition skill of rural college girls mediates the relationship between family support and EI.

H₉ : Opportunity recognition skills of rural college girls mediate the relationship between government support and EI.

2.5. Moderating the Role of Creativity

According to (YOUNG, 1985), the contradictory fusion of being and doing is creativity. (Ko & Butler, 2007) narrated that originality plays a energeticpart in entrepreneurship. (Runco & Jaeger, 2012) suggested that originality and efficacy are prerequisites underlying creativity. The research results (Entrialgo & Iglesias, 2020a) demonstrate that creativity seems to have an essential part, so free enterprise agendas that foster scholars' inventiveness and help them grow more conscious of their imaginative assets and skills may be beneficial in urging students to look into careers in entrepreneurship. (Zampetakis et al., 2011a) concluded that creative young people seem to be more inclined toward entrepreneurship.

(Yar et al., 2008); (Entrialgo & Iglesias, 2020c); (Tantawy et al., 2021); have developed a optimistic relationship amid the desire to twitch a occupational and creativity. (Anjum, Farrukh, et al., 2021) pointed out that since people need to be creative to recognize and seize opportunities, creativity is crucial to entrepreneurship. (Ahlin et al., 2014) propagated that scholars are concerned in potential links between an individual's creativity and business acumen. (Anjum, Farrukh, et al., 2021) investigate on ingenuity reveals that the endeavor of entrepreneurship heavily depends on creativity.

H₁₀ : Creativity of rural college girls positively moderates the relationship between soft Skill and opportunity recognition.

H_{11} **:** Creativity of rural college girls positively moderates the relationship between family support and opportunity recognition.

H_{12} **:** Creativity of rural college girls positively moderates the relationship between government support and opportunity recognition.

H_{13} **:** Creativity of rural college girls positively moderates the relationship between opportunity recognition and entrepreneurial intention.

H_{14} : Creativity of rural college girls positively moderates the relationship between soft skill, opportunity recognition and entrepreneurial intention.

H_{15} **:** Creativity of rural college girls positively moderates the relationship between family support, opportunity recognition and entrepreneurial intention.

H_{16} **:** Creativity of rural college girls positively moderates the relationship between government support, opportunity recognition and entrepreneurial intention.

3. Research Methodology

Figure-1 : Sources of Adoption for Entrepreneurial Intention
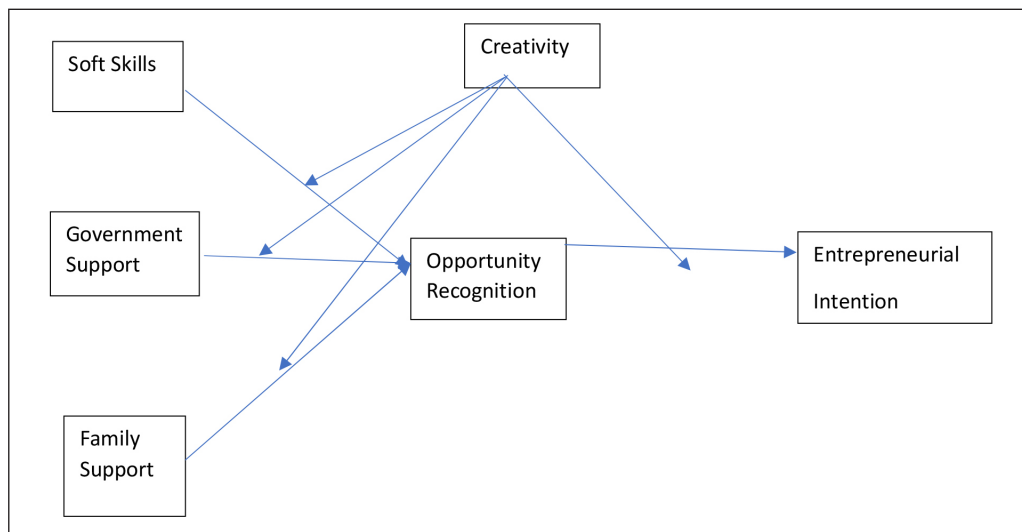
Source : Author's Compilation.

Intricate hypothesis formulations frequently get validated using PLS-SEM. The PLS 4.0 software was utilised for testing the hypothesis. The questionnaire consists Twenty-three items. The details are given Table-1.

Table-1 : Items of the Questionnaire and Source of Adaptation

Sr. No.	Construct	Item	Source
1	Soft Skills	1) I feel confident about my communication skills 2) I have good decision-making skills 3) I have the ability to take calculated risk.	(Antonovica et al., 2023); (Benedicta Prihatin Dwi Riyanti, 2016); Hossain et al., 2020)
2	Government Support	1) In my nation, there are ample government incentives available for start-ups and expanding businesses. 2) My nation's development organizations have enough money available. 3) In my nation, new businesses can obtain the majority of the necessary licenses and permits in roughly a week. 4) New and expanding businesses are subject to predictable and uniform tax and regulatory treatment.	(Bang Nguyen Dilip S. 2015); (Mamun et al., 2017); (Parvaneh Gelard, 2011b)
3	Family Support	1) My parents have encouraged me to pursue an entrepreneurial profession. 2) Assisting my parents with their business has made me want even to start my own company. 3) My parents are prepared to provide me with money so that I can pursue my entrepreneurial endeavors. 4) My parents serve as inspiration for me while I pursue entrepreneurship. 5) I can rely on my family to help launch a business.	(Hieu et al., n.d.)
4	Opportunity Recognition	1) There are numerous opportunities for me to launch and expand a business; 2) I have no trouble identifying possible ventures; 3) There are plenty of chances for novel merchandise revolution; 4) I have a keen wisdom of potential novel undertaking thoughts; 5) I frequently come across potential new venture ideas while going about my regular business.	(Hassan et al., 2020c); (Tian et al., 2022); (Yan et al., 2018)

5	Entrepreneurial intention	1)I'll stop at nothing to become an entrepreneur. 2) My career aspiration is to start my own business. 3)I'll work tirelessly to launch and realize my individual commercial. 4)I'm committed to starting a commercial in forthcoming. 5) I am giving launching a business serious thought. 6)One day, I firmly intend to launch a business.	(Chaudhari, 2023a); (Maes et al.,2014); (Entrialgo& Iglesias, 2020b)
6	Creativity	1) I'm a really imaginative person. 2)I dedicate a short period of time every diurnal or calendar week to being creative. 3)I'm full of thoughts. 4)Even when I don't need new answers, I still look for them. 5)My concepts are frequently really unique. 6)I have the ability to perceive issues that others may miss.	(Ahlin et al., 2014)

Four hundred questionnaires were distributed. Out of these twenty were found incomplete and hence were not considered. (Lei & Wu, 2007) advocated that typically, the smallest possible sample ought to be no less than 200.

Table-2 : Profile of the Respondents

Characteristics	Selections	Occurrence	%
Age	18-20	257	68
	20-22	88	23
	22-24	21	06
	Above 24	14	03
Marital Status	Married	28	07
	Unmarried	352	93
Education	Graduate	302	80
	Post Graduate	54	14
	Other	24	06
Monthly household income	Less than 25,000	94	25
	25,001 to 35,000	126	33
	35,001 to 50,000	104	27
	Above 50,001	53	15

Source : Constructed by author.

4. Results

4.1. Reliability and Validity of the Measurement Model

(Tomass MHultt, 2021) suggested to use indicator loadings over 0.708 meanwhile they imply that the concept books for additional than 50% of the variance in the indicator, confirming suitable hint reliability. (Fayolle et al., 2015)stated that the measuring methodology has to be evaluated by looking at internal consistency reliability, Convergent Validity and Discriminant Validity. Rendering to (Sarstedt et al., 2022) AVE ought to be superior than 0.50.

Table-3 : Reliability and Average Variance

		VIF	Cronbach's alpha	(rho_a)	(rho_c)	(AVE)
SS	SS1	2.475	0.872	0.873	0.922	0.797
	SS2	2.256				
	SS3	2.281				
CC	CC1	1.467	0.813	0.838	0.868	0.535
	CC2	2.103				
	CC3	1.771				
	CC4	4.469				
	CC5	1.219				
	CC6	1.248				
EI	E15	3.361	0.86	0.895	0.894	0.586
	EI1	1.708				
	EI2	1.596				
	EI3	1.605				
	EI4	1.788				
	EI6	2.729				
FS	FS1	1.816	0.826	0.833	0.878	0.59
	FS2	1.624				
	FS3	1.991				
	FS4	2.284				
	FS5	2.381				
GS	GS1	1.942	0.771	0.832	0.859	0.616
	GS2	2.852				
	GS3	2.41				
	GS4	1.093				
OP	OP1	1.556	0.83	0.847	0.886	0.617
	OP2	3.792				
	OP3	3.234				
	OP4	4.335				

Source :- Data Analysis

- **Discriminant Validity**

- **Fornell-Larcker**

In the view of (Myint Swe Khine - Curtin University, 2013), three methods were put forth by Fornell and Larcker to evaluate the measuring items' convergent validity with respect to the relevant constructs. These are the average extracted variance, composite reliability of each concept, and item reliability of each measure. Convergent validity quantifies how strongly constructs and latent variables are correlated (Purwanto & Sudargini, n.d.).

Table-4 : Fornell-Larcker

	CC	E	FS	GS	OP	SS
CC	0.732					
EI	0.148	0.766				
FS	0.127	0.528	0.768			
GS	0.056	0.554	0.368	0.785		
OP	0.196	0.735	0.431	0.374	0.786	
SS	0.016	0.397	0.309	0.752	0.306	0.893

(Hair et al., 2013); (Siyal et al., 2020), the HTMT principle is rummage-sale to evaluate the discriminant validity. Every single result is distinctly below the cautious cut off point of 0.85. The table shows that HTMT values ranges from 0.055 to 0.801 which is fewer than perilous worth.

Table-5 : HTMT

	CC	E	FS	GS	OP	SS	CC x SS	CC x GS	CC x FS
CC									
EI	0.171								
FS	0.152	0.618							
GS	0.085	0.702	0.472						
OP	0.254	0.801	0.519	0.483					
SS	0.056	0.458	0.365	0.464	0.358				
CC x SS	0.107	0.082	0.088	0.109	0.052	0.112			
CC x GS	0.083	0.111	0.101	0.065	0.055	0.115	0.792		
CC x FS	0.08	0.13	0.078	0.1	0.142	0.081	0.365	0.416	

Table-6 : Assessment of the Explanatory Ability of the Structural Model

	R-square	R-square adjusted	Q2
EI	0.556	0.553	0.124
FS	0.135	0.132	0.087
GS	0.566	0.565	0.563
OP	0.268	0.254	0.105

In the opinion of (Tilahun et al., 2023) coefficient of resolve is the metric greatest often second-hand to assess the mechanical model. (A. Xu et al., 2022) pointed out that the model's capacity for prediction is indicated by the value of R2. According to (Tilahun et al., 2023) higher figures for the R2 value imply higher levels of prediction accuracy; the value ranges from 0 to 1. In the table (0.556, 0.135, 0.566, 0.268) R2 values shows thew models' capacity. (Tilahun et al., 2023) Suggested that academics should guise at Stone-Geisser's Q2 value in totalling to the scope of the R2 values as a measure of prediction correctness. In the view of, (Dawam & Iswandi, 2023); (Sampene et al., 2023) for a given philosophical endogenic dormant in constant in the operational prototypical, a Q2 value larger than zero denotes the predictive importance of the path model for that precisehy pothesis. The table yields all values of Q2 more than 0, which is a hint towards models' stout predictive capability.

Table-7 : Assessment of Effect Size (F2)

	CC	E	FS	GS	OP
CC		0.232			0.327
E					
FS					0.118
GS			0.055		0.124
OP		1.162			
SS				1.503	0.201
CC x GS					0.301
CC x OP		0.201			
CC x FS					0.109
CC x SS					0.121

According to (Tilahun et al., 2023), apart from reviewing the R2 values of every endogenous construct, one can also regulate whether an exogenic construct has noteworthy influence on the endogenous variables by seeing how the R2 value

changes when it is removed from the model. The f2 effect size is the abbreviation given to this measurement. (Al Breiki et al., 2023) posited that if the values are superior than 0.02, 0.15, and 0.35, respectively, the consequence extent is deemed modest, intermediate, and high. The above table shows values ranging from 0.055 to 0.327, indicting significance influence.

4.2. Hypothesis Testing

The subjects of college girls' entrepreneurship are combined in this study. PLS-SEM testing was done on the SS, GS, FS, OP, C, and EI to investigate them. Links between the variables were clarified by consulting pertinent existing research, and the exploresuppositions were then laid out in accordance with the findings to figure out if the hypotheses were reasonable. Using the bootstrapping test approach, the suggested theory of the causation between the latent variables was examined, requiring Five thousand repeated sampling instances, to judge the steadfastness of the training's hypotheses. The table makes this readily apparent that all the direct relationship between SS and OP, SS and EI, FS and OP, FS and EI, GS and OP, GS and EI and OP and EI were found significant.

Table-8 : Hypothesis Testing

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
SS -> OP	0.026	0.03	0.067	0.389	0.697	Non - Significant
SS ->EI	0.216	0.221	0.044	4.909	0.000	Significant
FS -> OP	0.319	0.321	0.062	5.162	0.000	Significant
FS ->EI	0.237	0.240	0.048	4.965	0.000	Significant
GS -> OP	0.117	0.119	0.030	3.901	0.000	Significant
GS ->EI	0.242	0.247	0.061	3.943	0.000	Significant
OP ->EI	0.744	0.749	0.030	24.453	0.000	Significant

4.3. Mediating Effect

(Li et al., 2023)explained that in order to establish a mediating influence, both the track constant of the independent factors to the reliant on variables and the route coefficient of the self-governing variables to the halfway flexible star have to be substantial.

From the results in Table-9, with Opportunity Recognition as the intermediate, the consequence sizes of Soft Skills, Family Support and Government Support

on EI are 0.034, 0.000 and 0.007. The mediating effect SS -> OP -> EI was found insignificant. While FS -> OP -> EI and GS -> OP -> EI were significant.

Table-9 : Mediating effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Decision
SS -> OP ->EI	0.034	0.036	0.054	0.634	0.034	Non-Significant
FS -> OP ->EI	0.237	0.240	0.048	4.965	0.000	Significant
GS -> OP ->EI	0.155	0.157	0.057	2.711	0.007	Significant

4.4. Moderating Effect

(Sampene et al., 2023) pointed out that when there is moderation, there is a change in the relationship between the two notions, which is based on the value of a third base variable called the go-between flexible. (Becker et al., 2023), suggested that lot of academics have looked into moderation models using PLSSEM, where a third construct known as the moderator determines how strongly two constructs relate to one another. All moderating effects were not significant, given that the p-values surpassed the minimum suggested 0.005 threshold.

Table-10 : Moderating Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Decision
CC x SS -> OP	-0.008	-0.010	0.098	0.077	-0.008	Non-Significant
CC x FS -> OP	-0.084	-0.083	0.080	1.043	0.297	Non-Significant
CC x GS -> OP	0.033	0.037	0.099	0.337	0.736	Non-Significant
CC x OP ->EI	-0.019	-0.023	0.056	0.336	0.737	Non-Significant
CC x SS -> OP ->EI	-0.006	-0.008	0.074	0.076	0.940	Non-Significant
CC x FS -> OP ->EI	-0.062	-0.062	0.060	1.036	0.300	Non-Significant
CC x GS -> OP -> EI	0.025	0.028	0.075	0.332	0.740	Non-Significant

Figure-2 : Entreprenuerial Intention Among India Rural Girls
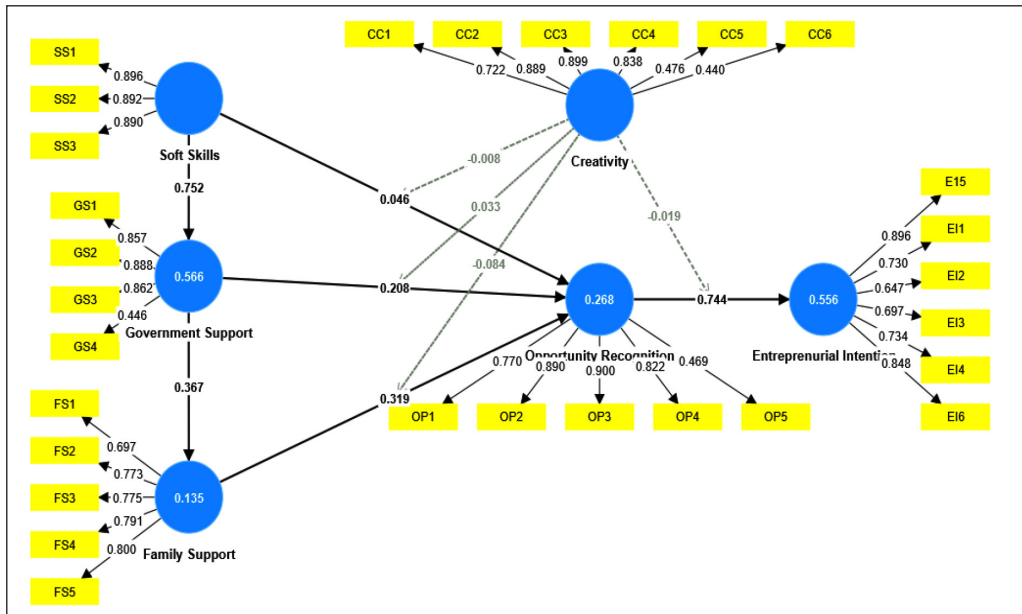
5. Discussion and Findings

This study addresses the consequences of multiple variables on EI using SMART PLS 4.0 software. It is based on 380 valid surveys completed by female college students from India's countryside.

The questionnaires were split into groups of people who were chosen specifically in order to gage their inclination toward entrepreneurship. The findings, which are separated into two categories, highlight the connections between EI, government skills, family support, opportunity recognition, creativity, and soft skills. The findings of the moderating and mediating exercise are displayed in the second part.

The outcomes of the study imply that no serious relationship between soft skills and O.R., in contrast to more widely accepted studies (Tripathy, 2020); (Rauner et al., n.d.); (Asefer & Abidin, 2021). There is a constant association between SS and EI. (Majed, 2019); and (Benedicta Prihatin Dwi Riyanti, 2016b); which have revealed significant relationship. The research conducted by (Wang et al., 2020); (Ruiz-Palomino & Martinez-Canas, 2021b); (Baluku et al., 2020) have witnessed similar result. The affiliation amid FS and EI shows results similar to those of

(Baluku et al., 2020); (Annisa et al., 2021b); (Martins et al., 2023). Also(Park, 2005); (Farr-Wharton & Brunetto, 2007b) is in tune with the significant relationship between GS and opportunity Recognition. The GS and EI were found to be significant. This was parallel to (Islam et al., 2022); (Elnadi & Gheith, 2020); (Anjum, Heidler, et al., 2021). The OP and EI shows significant relationship like (Yasir et al., n.d.); (Bergner et al., 2023); (Chang & Chen, 2020); and (MOSTAFIZ, 2020).

Various studies (Kang & Yang, 2016); (Abuzhuri & Bint Hashim, 2017); (Niammuad et al., 2014) have studied the mediating effect of OR. This exertion has yielded that opportunity recognition does not positively moderate between soft skills and EI. while it moderates between Family support and EI and GS and EI. Similarly, (Wang et al., 2021); (Shi et al., 2020); (Wang et al., 2023) have studied the moderating effect of creativity. The moderation result revealed no significant relationship.

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Exploring the Factors Influencing Consumer Purchasing Behavior through Social Media Advertising : A Quantitative Analysis

N. Kɪʀᴜᴛʜɪᴋᴀ ᴀɴᴅ K. Rᴀᴊᴀᴍ

Abstract : *Social media has emerged as an essential factor in shaping consumer behavior, providing brands with a direct channel to engage with audiences. Its dynamic nature enables personalized marketing strategies that can significantly impact purchasing decisions. This research investigates the factors influencing social media on consumer purchasing behavior, as consumers increasingly seek product information through these platforms rather than traditional media like television and radio. Companies must adapt by creating effective online advertising strategies, particularly on social media. The research takes a quantitative approach to explore the factors influencing social media ads and their impact on purchasing behavior across different socioeconomic groups in Tiruchirappalli. Building on previous studies, it focuses on the characteristics of online ads and their role in shaping purchase intentions. The study surveyed 412 respondents from Tiruchirappalli, selected via simple random sampling, with data collected through both online and printed structured questionnaires. The data were interpreted using Microsoft Excel and SPSS version 21, using techniques like Cronbach's alpha, exploratory factor analysis (EFA), and Pearson's chi-square tests. The findings indicate significant variations in how different socioeconomic groups respond to online advertising, revealing that factors such as income level and education significantly influence purchasing decisions.*

Keywords : Advertisements, Consumer Behavior, Purchasing Decisions, Social Media, Influencing Factors.

N.Kiruthika, Ph.D. Research Scholar (Full-Time), PG and Research Department of Commerce, Srimad Andavan Arts and Science College (Autonomous), Affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu, India. Email : kiruthiraajesh@gmail.com

Dr.K.Rajam, Assistant Professor & Research Supervisor, PG and Research Department of Commerce, Srimad Andavan Arts and Science College (Autonomous), Affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu, India. Email : krajam.commerce@gmail.com

1. Introduction

In the current era of social networking, social media has developed as a transformative force, significantly influencing consumer behavior and reshaping marketing strategies. For over fifty years, the study of consumer behavior has been a focal area of research (Cao, 2024). Social media platforms play an important role in influencing purchasing decisions and have the capacity to either improve or diminish an organization's sales performance. (Antczak, 2024; Biasa et al., 2024; Cao, 2024). Despite extensive research on social media marketing, limited attention has been given to how specific advertising tactics employed on these platforms directly impact consumer behavior and purchasing intentions. Existing literature broadly examines the effects of social media marketing on consumer actions (Cai, 2023; Sharma, 2023; Antczak, 2024), often focusing on general marketing strategies. However, there remains an absence of detailed analysis of the direct influence of advertising elements—such as personalized targeting, emotional appeal, and user engagement—on purchase behavior. Addressing this gap, the present study seeks to uncover critical factors that shape consumer responses to social media advertisements and assess their implications for marketing effectiveness.

Marketing strategies in the digital age heavily rely on addressing consumers' emotional needs, offering entertainment, and providing practical insights that encourage social interaction (Pokhrel, 2023). Social media has further established itself as a global communication tool, driving consumer loyalty and purchase intentions (Zhang, 2023). Discounts, product reviews, influencer endorsements, and targeted advertisements are among the key drivers of consumer engagement (Kumaran & Navin, 2022). Personal, social, psychological, and cultural factors significantly influence consumer preferences, providing marketers with opportunities to refine their strategies (Rahman & Sathik, 2024).Additionally, brand credibility and perceived quality have been identified as critical determinants of customer satisfaction and purchase decisions (Sathik, 2024). By leveraging user-generated content and demographic insights, social media also facilitates personalized advertising that resonates with individual consumer needs (Jung, 2017).

This study emphasizes the importance of understanding how social media advertising influences consumer purchasing decisions. Insights into these dynamics are essential for marketers to develop more effective strategies tailored to the evolving preferences and behaviors of their target audiences. As consumers increasingly generate and share brand-related content, the factors driving their

responses to advertisements become even more significant. Without a comprehensive understanding of these elements, advertising campaigns risk losing relevance, leading to diminished engagement and suboptimal outcomes. This research contributes to the growing body of knowledge in digital marketing by exploring the interplay between advertising strategies and consumer responses. It provides actionable insights for businesses to enhance engagement, refine branding, and drive sales through more effective social media advertising practices.

Figure-1 : Factors Influencing Consumer Behavior
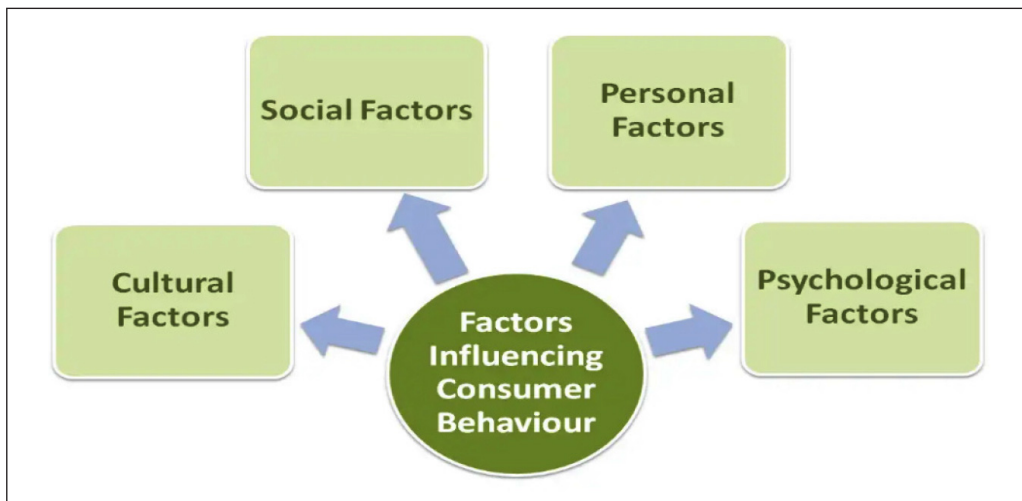
Source : Authors' own Compilation.

1.1. Consumer Behavior

Consumer behavior pertains to the process of selecting, purchasing, and using goods or services to meet personal needs. This involves steps such as identifying desired products, evaluating utility, estimating budget, and analyzing prices before making a decision. Numerous factors shape consumer behavior, including marketing strategies, personal traits, psychological aspects, and cultural influences.

1.2. Personal Factors

Personal attributes like age, gender, education, income, social status, and lifestyle influence purchasing behavior. For instance, preferences vary between age groups and income levels.

1.3. Psychological Factors

Psychological elements like learning, attitudes, motives, perception, and beliefs significantly influence purchases. For example, positive experiences with a brand encourage repeat purchases, while attitudes and perceptions shape preferences.

1.4. Social Factors

Social influences, including reference groups, family, and societal roles, shape preferences. People often conform to the expectations of their social circle, choosing brands or products aligned with their roles or status.

1.5. Cultural Factors

Cultural and sub cultural norms deeply influence consumer behavior. Customs, traditions, and values, along with subcultures defined by religion or geography, determine preferences and consumption patterns.

2. Review of Literature

Gupta et al. (2022) explored the increasing significance of online platforms advertising, projecting user numbers to grow from 3.6 billion in 2020 to 4.41 billion by 2025. The research concentrated on how advertising affects consumer attitudes and purchasing intentions on different social media platforms. The data demonstrated that hedonic motivation, interactivity, informativeness, business repute, and social role and image all had a significant impact on consumer impressions of social media marketing.

Akar and Topcu (2011) investigated the elements that affect consumers' perceptions of marketing via social media. They regarded social media as an innovative instrument for marketers to build consumer communities entered around user-generated content, while also offering essential insights for marketers aiming to connect with consumers on these platforms.

Al Kurdi et al. (2024) examining how social media marketing impacts online purchasing behavior, with a focus on its role in shaping consumer perception within Abu Dhabi's retail sector, UAE. Their findings emphasized the significant role of consumer perception as a mediator influence social media marketing and purchasing decisions. The study emphasized the significance of establishing strong relationships between retailers and customers, suggesting that businesses enhance their social media strategies to drive sales. Additionally, it noted the opportunity for businesses to connect with a large customer base via popular platforms like Facebook, Instagram, and YouTube.

Sebastian et al. (2021) explored the consequence of YouTube social media advertisements on the buying tendencies of users, focusing on their perceptions of ads on video streaming platforms, an area with limited research. The findings revealed that repetitive ads, poorly timed ads, and excessively long ads caused frustration among viewers. However, when products were introduced innovatively or for the first time, the informative and entertaining aspects of the ads positively influenced purchase decisions. In contrast, lengthy, repetitive ads, especially those located in the mid of videos, were disliked by consumers.

Hasan and Sohail (2020) A study were carried out in Saudi Arabia to assess how social media marketing affects customer purchase intentions. The survey focused on consumers who had bought a product from a brand they followed on social media. The findings exposed that influences such as brand trust, brand awareness, engagement, and the sense of community all had an optimistic impact on buying intentions. Furthermore, the study identified that the brand's origin played a moderating role in the relationship among brand trust, engagement, and purchase intent.

3. Objectives

- To explore the demographic factors influencing social media advertisement engagement

- To examine consumer perceptions of social media advertisements and their impact on decision-making.

- To analyze the factors influencing consumer engagement with social media advertisements and optimize marketing strategies based on user perceptions and preferences**.**

4. Methodology

This study investigates factors influencing consumer behavior towards social media ads in Tiruchirappalli. Data were collected from 412 respondents via random sampling using online and physical surveys, ensuring representation. A well-designed questionnaire using a five-point Likert scale was employed, and a pilot test improved question clarity. Data analysis was conducted in SPSS 21, with reliability confirmed througha Cronbach's alpha value greater than 0.7 suggests strong internal consistency, and Exploratory Factor Analysis (EFA)is employed to identify the hidden factors within the data, supported by a satisfactory Kaiser-Meyer-Olkin (KMO) measure.

5. Results

Table-1 : Demographic Profile

NAME OF THE VARIABLE.	DEMOGRAPHIC	FREQUENCY	PERCENTAGE
Gender of the respondents	Male	186	45.1
	Female	226	54.9
The age of the respondents (in years)	Under 25	128	31.1
	26-35	140	34.0
	36-45	76	18.4
	ABOVE 46	68	16.5
Occupation of the respondents	Respondents who are employee	91	22.1
	Respondents who are business	102	24.8
	Respondents who are professional	100	24.3
	Others	119	28.9
Monthly income	Upto20,000 rupees	101	24.5
	21,000-30,000 Rupees	153	37.1
	31,000-40,000 Rupees	87	21.1
	ABOVE 40,000 Rupees	71	17.2
Frequency of social media use	Rarely (less than once a week)	62	15.0
	Occasionally (1-3 times a week)	87	21.1
	Frequently (4-8 times a week)	102	24.8
	Very Frequently (Every day)	161	39.1

Source : Authors' own Compilation using SPSS.

The majority of respondents in the survey are female (54.9%), aged between 26-35 years (34.0%), and have a monthly income of 21,000-30,000 Rupees (37.1%). In terms of occupation, the largest groups are those in the "others" category (28.9%) and business owners (24.8%). Regarding social media usage, the most frequent group is those who use social media very frequently (every day), making up 39.1% of respondents. These trends suggest that the sample population mostly consists of adolescent, female persons through moderate income who are active on social media.

Data trust is built on a strong foundation of data reliability, which refers to the accuracy and completeness of the data. Cronbach's alpha measures internal consistency among items, with values over 0.7 deemed acceptable. Scores above 0.9 indicate excellent consistency.

Table-2 : Reliability Analysis

Cronbach's Alpha's Result	Number of Items.,
.793	18

Source : Authors' own Compilation using SPSS.

The reliability analysis test showed that the result of .793 is considered acceptable, as it meets the criterion of an alpha value greater than or equal to .7. Since the alpha value is above .7, it indicates satisfactory internal consistency.

Table-3 : KMO and Bartlett's Test

KMO measures Adequacy.,		.732
Bartlett's Test of Sphericity.	Approx. Chi-Square.	6038.181
	Degree of freedom	153
	Sig.	.000

Source : Authors' own Compilation using SPSS.

EFA is often used to assess a measure's internal reliability and determine its factor structure. Before evaluating the factors, it is customary to run the Kaiser-Meyer-Olkin (KMO) adequacy test and Bartlett's test of sphericity, commonalities, and variances. A value greater than 0.6 is considered acceptable. However, for the propinquity of variables, which is also supported by Snedecor and Cochran, Bartlett's test statistics must be significant. The variances are homogenous because the p-value is less than 0.5. The usual acceptance standard for factor loading is more than 0.5. The greater an item's affinity with a certain component, the higher the loading factor.

The KMO index defines sampling adequacy. The KMO test has a valid and acceptable value of (.732), which is more than (0.5), and can be utilized to carry out the data reduction procedure. Bartlett's test of Sphericity assists in determining if more data analysis is warranted in light of the factor analysis results. The level of significance (0.000), it may be stated that there is a substantial degree of correlation between the variables, making factor analysis appropriate.

6. Communalities

The extent to which something corresponds with all other things is known as the communality. Greater communalities are preferable. It may be difficult for a given variable to load considerably on any factor if its communalities are low.

Table-4 : Communalities

	Initial	Extraction
I find social media advertisements relevant to my interests.	1.000	.827
I trust the information presented in social media advertisements	1.000	.682
I think social media advertisements are intrusive.	1.000	.906
I feel that social media advertisements are personalized for me.	1.000	.852
I tend to skip or ignore social media advertisements when I see them	1.000	.804
The visual design of social media advertisements influences my attention	1.000	.856
I am more likely to engage with social media ads that feature video content.	1.000	.861
Promotions featuring celebrities on social media impact my buying choices.	1.000	.719
The use of discounts or promotions in social media advertisements encourages me to take action.	1.000	.856
I am more likely to trust a product or service advertised on social media if it has positive user reviews or ratings.	1.000	.742
I find advertisements more effective when they are shown on platforms I use regularly (e.g., Facebook, Instagram, Twitter, etc.).	1.000	.723
I prefer advertisements that are integrated naturally within my social media feed (e.g., sponsored posts).	1.000	.854
I am more likely to engage with social media ads that appear in stories or temporary posts (e.g., Instagram Stories, Facebook Stories).	1.000	.881
I feel that advertisements on social media are more engaging compared to traditional media (e.g., TV, print)	1.000	.832
Social media advertisements have led me to purchase a product or service in the past	1.000	.396
I am more likely to share a social media advertisement with my friends or family if I find it interesting.	1.000	.845
Social media advertisements have influenced my brand perception and loyalty.	1.000	.797
I believe that social media advertisements are likely to influence impulse buying decisions compared to other types of ads.	1.000	.490

Source: Authors' own Compilationusing SPSS

Initially, every variable in the communality is anticipated to share 100% variance. As a result, each item starts with a value of 1.00, indicating that each item shares

100% of the variation. The extraction values range from 0.396 to 0.906, suggesting that the extracted item has a minimum variance share of 39.6% and a maximum variance share of 90.6%.

Table-5 : Total Explained Variance

S. no.	The Eigen values			Extraction Squared Loadings			Rotated Squared Loadings		
	The values of Eigen	Variance percentage	The total percentage	The values of Eigen	Variance percentage	The total percentage	Total	Variance percentage	The total percentage
1	5.027	27.925	27.925	5.027	27.925	27.925	3.854	21.413	21.413
2	3.764	20.913	48.838	3.764	20.913	48.838	3.294	18.299	39.712
3	2.825	15.693	64.531	2.825	15.693	64.531	2.818	15.654	55.366
4	1.250	6.944	71.475	1.250	6.944	71.475	2.264	12.580	67.946
5	1.056	5.867	77.342	1.056	5.867	77.342	1.691	9.396	77.342
6	.850	4.723	82.065						
7	.736	4.092	86.157						
8	.602	3.347	89.503						
9	.419	2.327	91.831						
10	.265	1.474	93.305						
11	.261	1.453	94.757						
12	.208	1.154	95.911						
13	.190	1.057	96.968						
14	.176	.977	97.946						
15	.134	.745	98.691						
16	.102	.569	99.259						
17	.073	.406	99.665						
18	.060	.335	100.000						
Principal Component technique is used for the extraction									

Source : Authors' own Compilation using SPSS.

The first component's total variance contribution is (27.925), followed by the second component's (20.913), the third component's (15.693), the fourth component's (6.944) and the fifth components are (5.867). The Eigen value of a particular factor assesses the variance in all variables that the factor accounts for. It is also obvious that out of the given set of variables, there are a total of four components with Eigen values greater than 1 they are 1, 2, 3, 4 and 5 and their Eigen values are (5.027), (3.764), (2.825), (1.250) and (1.056) respectively.

Figure-2 : Scree Plot
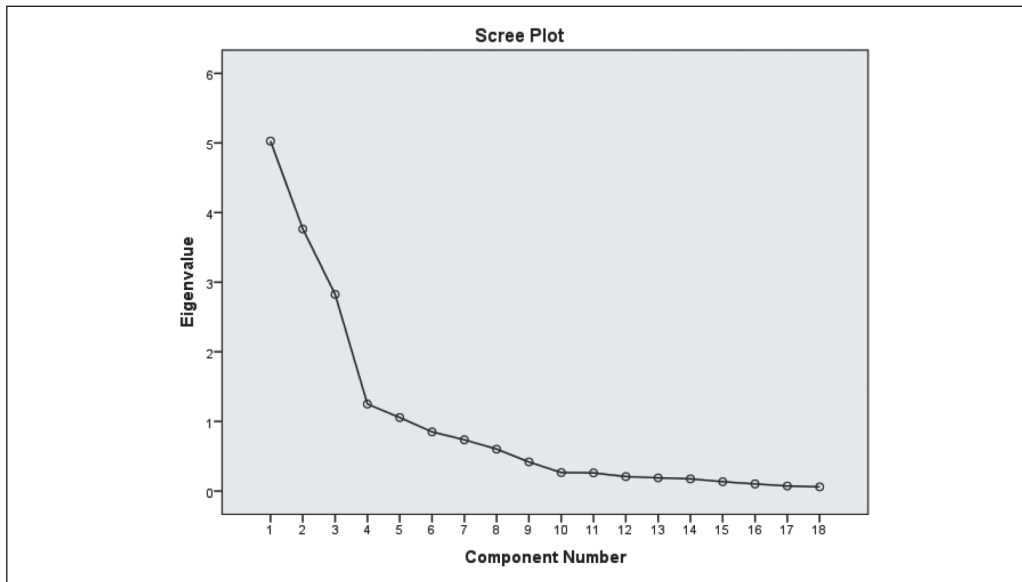
The components are displayed on the X-axis of the Scree plot along with the corresponding Eigen values on the Y-axis. These Eigenvalues are regarded as the first four components: (5.027), (3.764), (2.825), (1.250) and (1.056). Since the highest Eigen value is 5.027, this factor is the most significant, followed by all others. These four components are important in this research since they all have Eigen values larger than 1 and share the largest variation.

The results of the Principal Component Analysis (PCA) reveal key insights into how individuals engage with social media advertisements. The first component, accounting for 27.925% of the variance, indicates that users are more likely to engage with ads appearing in stories or temporary posts, as well as those featuring video content. These ads also tend to be perceived as highly relevant to users' interests. The second component (20.913% variance) highlights that social media ads are considered more engaging and trustworthy than traditional media, with users preferring ads shown on platforms they regularly use, such as Facebook or Instagram. The third component (15.693% variance) suggests that while social media ads are seen as intrusive, they are also perceived as more effective when they feature promotions or celebrity endorsements that influence purchasing decisions. The fourth component (6.944% variance)

Table-6 : Rotated Component Matrix

Variables	Component					Variance percentage	The values of Eigen
	1	2	3	4	5		
I am more likely to engage with social media ads that appear in stories or temporary posts (e.g., Instagram Stories, Facebook Stories).	.922						
I am more likely to engage with social media ads that feature video content.	.909					27.925	5.027
I feel that advertisements on social media are more engaging compared to traditional media (e.g., TV, print)	.891						
I find social media advertisements relevant to my interests.	.881						
I tend to skip or ignore social media advertisements when I see them		.886				20.913	3.764
I find advertisements more effective when they are shown on platforms I use regularly (e.g., Facebook, Instagram, Twitter, etc.).		.846					
Promotions featuring celebrities on social media impact my buying choices.		.814					
I trust the information presented in social media advertisements		.800					
I believe that social media advertisements are more expected to influence impulse buying decisions compared to other types of ads.		.661					

I think social media advertisements are intrusive.			.934			**15.693**	**2.825**
The use of discounts or promotions in social media advertisements encourages me to take action.			.901			
I am more likely to share a social media advertisement with my friends or family if I find it interesting.			.898			
I feel that social media advertisements are personalized for me.				.835		**6.944**	**1.250**
Social media advertisements have influenced my brand perception and loyalty.				.751		
I am more likely to trust a product or service advertised on social media if it has positive user reviews or ratings.				.719		
Social media advertisements have led me to purchase a product or service in the past				.552		
I prefer advertisements that are integrated naturally within my social media feed (e.g., sponsored posts).					.848	**5.867**	**1.056**
The visual design of social media advertisements influences my attention					.824	

The Principal Component method is employed for extraction, while the Varimax technique is applied for rotation.

Source : Authors' own Compilation.

underscores the importance of personalized ads, with users being more likely to trust ads tailored to their interests or those featuring positive user reviews. Finally, the fifth component (5.867% variance) shows that ads integrated naturally into users' social media feeds, with effective visual design, are more likely to capture attention. Overall, the analysis reveals that social media advertisements are most effective when they are relevant, personalized, and seamlessly integrated into users' social media experiences, while still managing to balance concerns about intrusiveness. These findings can help marketers optimize their strategies to increase engagement and drive consumer action.

Table-7 : Analysis of the Frequency of Online Platforms Engagement

Frequency of Online Platforms Engagement		
Social media usage	Frequency	Valid Percent
Infrequently (Fewer than once a week)	62	15.0
Sometimes (1-3 times per week)	87	21.1
Regularly (4-8 times per week)	102	24.8
Daily (Every day)	161	39.1
Total	412	100.0

Source : Authors' own Compilation using SPSS.

The analysis of social media usage frequency reveals that the majority of respondents use social media daily, with 39.1% indicating they access it every day. This is the highest value in the distribution, highlighting that daily use of social media is the most common behavior among participants. In comparison, 24.8% of respondents use social media regularly (4-8 times a week), while 21.1% use it sometimes (1-3 times a week), and 15.0% report using it infrequently (less than once a week). This distribution underscores the dominant trend of daily social media engagement.

7. Research Hypothesis

- HO1 : The Frequency of social media Engagement was not dependent on the gender of the respondents

- HO2 : The Frequency of social media Engagement was not dependent on the age of the respondents

- HO3 : The Frequency of social media Engagement was not dependent on the occupation of the respondents

- HO4 : The Frequency of social media Engagementwas not dependent on monthly income of the respondents.

Table-8 : Cross-tabulation of Gender and the Frequency of Social Media Engagement

	The Value.	Degree of freedom	Asytc Sig
Pearson's Chi-Square value	13.556[a]	3	.004
Likelihood Ratio	13.615	3	.003
Linear-by-Linear Association	9.187	1	.002
Number of Valid Cases.	412		

Source : Authors' own Compilation using SPSS.

The Pearson's Chi-Square test shows a significant result with a value of 13.556[a], 3 degrees of freedom, and p-value of 0.004, which is below the 0.05 threshold. This indicates a significant association between gender and the frequency of social media engagement being tested, resulting in the null hypothesis being rejected.

Table 9: Cross-tabulation of Age and the Frequency of Social Media Engagement

	The Value.	Degree of freedom	Asytc Sig
Pearson's Chi-Square value	18.734[a]	9	.028
Likelihood Ratio	19.285	9	.023
Linear Correlation	.300	1	.584
Number of Valid Cases.	412		

Source : Authors' own Compilation using SPSS.

The above-mentioned table shows that the frequency of social media engagement was influenced by age; the value of P is 0.028. As a result, the null hypothesis was declined.

Table-10 : Cross-tabulation of Occupation and the Frequency of Social Media Engagement

	The Value.	Degree of freedom	Asytc Sig
Pearson's Chi-Square value	23.875[a]	9	.005
Likelihood Ratio	22.180	9	.008
Linear-by-Linear Association	3.878	1	.049
Number of Valid Cases.	412		

Source : Authors' own Compilation using SPSS.

The Pearson's Chi-Square test (x^2 = 23.875, df = 9, p = 0.005) reveals a significant link between occupation and social media engagement frequency. With the p-value below 0.05, the null hypothesis is rejected, suggesting that occupation significantly influences social media activity levels.

Table-11 : Cross-tabulation of Income and the Frequency of Social Media Engagement

	The Value.	Degree of freedom	Asytc Sig
Pearson's Chi-Square value	12.752[a]	9	.174
Likelihood Ratio	12.792	9	.172
Linear Correlation	.258	1	.611
Number of Valid Cases.	412		

Source : Authors' own Compilation using SPSS.

The Chi-Square tests reveal no significant relationship between the variables. Pearson's Chi-Square (12.752, p=0.174), Likelihood Ratio (12.792, p=0.172), and Linear-by-Linear Association (0.258, p=0.611) all exceed the 0.05 threshold. Based on 412 valid cases, the null hypothesis stands, indicating no statistical significance.

8. Discussions

This study examines the factors influencing consumer purchasing behavior through social media advertising. A survey of 412 respondents from Tiruchirappalli, India, was conducted to explore the elements shaping consumer

engagement with social media ads. Key findings highlight the importance of ad relevance, personalization, and seamless integration into social media platforms. The research also highlights that video content, ads in stories, and celebrity endorsements enhance engagement. Statistical tests revealed that factors like age and occupation significantly influence social media engagement. These insights offer valuable guidance for marketers to tailor ads and boost consumer acceptance, thereby improving purchase intentions. The study underscores the potential of optimized social media advertising in influencing consumer behavior.

9. Conclusion

In this study, "Factors Influencing Social Media Advertising on Consumer Purchasing Behavior," we examined how social media advertisements influence consumer behavior, with a particular focus on purchase decisions and specific factors such as gender, age, occupation, and income level. My research found that the frequency of social media advertisements had an important influence on consumers' decision-making processes. The findings revealed that men and women had different attitudes toward social media ads, age, occupation levels were significantly linked to purchase decisions based on usage of social media and the income status had no significant impact on how social media ads influenced purchasing behavior.

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Customer Perception towards
Goods & Service Tax (GST) : A Study

V. Appa Rao and Venkatesh Maddeni

Abstract : *An indirect tax levied on the Provision of goods and services is known as GST. It is unified domestic indirect tax law. There are four types of GST. The main objective of this paper is to elicit the opinion of the customer towards GST. The method of study is mainly on empirical and descriptive nature. The survey shows that the customers are known about the GST but don't have knowledge about the percentages of GST on particular products. Even though there is a positive opinion on perception of GST in India. The overall perception of the respondents is that GST will help to increase the country revenue and make uniform tax system in India.*

Keywords :   GST, SGST, CGST, IGST, Financial Year.

1. Introduction

An indirect tax levied on the provision of goods and services is known as the "goods and service tax." Every value addition is subject to this multi-stage, destination-oriented tax, which replaces a number of other indirect taxes such as VAT, excise duty, service tax, etc. Goods and services are take account of to a unified domestic indirect taxes law that applies across India. Under this system, taxes are adjusted at the point of sale. The background of GST is intriguing. First introduced as a tax system in France in 1954, it was subsequently embraced by a number of nations, including Australia, Canada, the United Kingdom, Spain, South Korea, Vietnam, Monaco, and so forth. In India, the Goods and Services Tax (GST) was implemented in 2000 following the formation of a committee by the then-prime minister, Atal Bihari Vajpayee. The group was led by advisor to

Prof.V. Appa Rao, Dept. of Commerce, Osmania University, Hyderabad.

Dr.Venkatesh Maddeni, Assistant Professor (C), Palamuru University, Mahabubnagar.

the Finance Ministry (F.M), Vijay L. Kelkar, who found that GST may contribute to improving India's tax structure. The Union Ministry of Finance suggested implementing the Goods and Services Tax (GST) from April 1, 2010. However, the 2011 bill to modify the constitution to make it easier to enact the GST law was presented

The definition of GST is that it is a tax that has taken the place of several indirect taxes in India, including excise, service taxes, and VAT. Notably, understanding the goals of this tax system aids in improving one's comprehension of the meaning of the GST. For example, the GST service tax's main goals are as follows: The tax-on-tax regime is eliminated by the GST bill, which decreases the cost of goods by only imposing taxes on the net value-added part. All indirect taxes levied by the federal and state governments are included in the Goods and Services Tax, with a small exception. Higher tax collections are a sign of a robust economic system, and a high tax to GDP ratio reflects this. An expanded tax base and higher. The government is more likely to get more money through GST services when there is tax compliance. The goal of the GST bill is to increase tax system transparency, which should lead to fewer cases of fictitious input tax credits. GST online seeks to improve tax compliance by streamlining the registration and return processes on the GST platform, particularly for small and unorganized firms. India's Goods and Services Tax seeks to eliminate input tax credit application procedures that take a long time as well as logistical barriers. Additionally, it is anticipated that once the entry tax is absorbed, total business productivity will rise.

2. GST Types

There are basically four different GST types, which are as follows:

2.1. SGST :

State Goods and Services Tax is levied by the state government on transactions involving intrastate goods and services. The state in which the aforementioned transactions were completed later collects the revenue.

2.2. CGST :

Central Goods and Services Tax When goods and services are exchanged within a state, the central government levies CGST. The organisation in question is also in charge of collecting the money raised by this tax.

2.3. IGST :

Integrated Goods and Services Tax is levied on imports and exports as well as on interstate sales of goods and services. Take note that, according the GST bill, the State and the federal government split the revenue obtained through IGST.

The state in which the goods and services in question were consumed is responsible for collecting the state's share of this tax.

2.4. Union Territory Goods and Services Tax (UGST)

Union Territories in India impose this GST tax, which is assessed on all transactions made in any UT. In terms of distribution and payment guidelines on the GST platform, it is comparable.

Transaction	Old Method/regime	New Method/regime	Revenue
Sale within a specific state. (E.g.: sale within Telangana)	VAT + Excise/ service tax+central excise	Central GST & State GST	Shared between the State Govt. and Central Govt.
Sale between two or more states. (E.g: Sales from Telangana to Orissa) Integrated GST central	Excise/service tax+ central sales	Integrated GST	The Central Govt. shares revenue based on the items' destination.

3. Goods and Service Tax Rates in India

The Goods and Services Tax rates are in India can be as follows:

3.1. 5% Goods and Services Tax

Goods : Products falling under this category include footwear up to Rs. 500, hearing aids, insulin, baby food, milk, packaged foods, pizza bread, revenue stamps, roasted coffee beans, postage stamps, rusk, sugar, stent, sab dana, watches, cashew nuts, coir mat, edible oils, fish fillet, fertilizers, first-day covers, and packaged foods.

Services : This category covers the following: air travel in economy class, restaurants with a maximum turnover of Rs.50 lakhs, tour operator services, selling advertising space, and transportation services such as airlines and railroads.

3.2. 12% Goods and Services Tax:

Goods : Almonds, clothing exceeding Rs. 1,000, sausage made from animal fat, butter, bhujia, chutney, chess set, carom board, cake server, exercise books, fruits, frozen meat products, fish knives, forks, fruit juice, cell phones, jam, jelly, pickles, packed coconut water, sewing machines, tongs, tooth powder and work contracts are among the products covered by this slab.

Services : This category of services includes lodging such as hotels, guest rooms, and inns that charge between Rs. 1,000 and Rs. 2,500 per night. Business class airline tickets are also featured in this section.

3.3. 18% Goods and Services Tax:

Goods : This slab includes a wide range of products like hair oil, instant food mixes, ice cream, mineral water, mayonnaise, pasta, printers, preserved vegetables, soups, salad dressings, steel products, weighing machines (both electronic and non-electronic versions), bamboo, furniture, biscuits, branded apparel, CCTV, cameras, cakes, corn, curry paste, envelopes and footwear costing more than 500 rupees.

Services : The 18% GST slab includes telecom services, hotels with AC and alcohol service for visitors, IT services, and rooms that cost between Rs. 2,500 and Rs. 5,000 per night.

3.4. 28% Goods and Services Tax:

Goods : Aeration water, vehicles, motorcycles, cars, aftershave, ceramic tiles, non-cocoa chocolates, deodorants, hair shampoo, colour, shaving cream, paint, shavers, vacuum cleaners, water heaters, washing machines, and other items are all included in this slab.

Services : Services that are subject to 28% GST include 5-star hotels, racecourse gaming and betting, hotels with nightly lodging costs of Rs. 5,000 and more, movie theatres and entertainment. Furthermore, certain commodities are exempt from GST and are known as zero-rated supplies of GST.

4. Review of Literature

A number of academics and professionals have authored papers explaining customer perception on GST in varies states and districts. They also emphasized the significance of a GST in Indian tax system.

Nitin Kumar (2018)[1] has studied on the customer's perception on GST and the view of the customers in implementation of GST. It is found in this study is that the Government is put more efforts to implement GST in India, and there is a need to develop the positive perception on GST among the customers. For that it observed in this study the government could initiate and promote an extensive publicity programs which could help in creation of awareness.

B. Jemima Grace and Dr. J. Ferusha Pearl (2022)[2] were covered the study customer's opinion on GST and find out the benefits of customers on new implemented taxation system. Found that majority of the respondents are unaware about the GST in selected geographical area, customers are felt that it is burden for them. The study is highlighted that customers are felt that Government has to reduce the tax rates on GST.

Laxmikantam Sala (2022)[3] the study focused on the investigation of the perception of both retailers and customers on GST and pursued the level of awareness on GST among the customers and retailers. The study also covered how both retailers and customers perceive the burden imposed on customers due to the implementation of GST. The study highlighted that spectrum of awareness and opinion on GST. The opinion diverges on several aspects of GST, including its impact on national revenue, the burden it imposed on customers, and its effectiveness in curbing tax evasion.

C. K. Ramana and A. Sangeetha Priya (2023)[4] were focused on the customer's perception on GST on a specific geographical area. Found that the level of awareness among the customers is not significantly differ on age, gender, qualification and so on. Majority of the respondents are felt in this study is there is need to create more awareness about the GST. In this not covers the demography details of the respondents only focused on the perception of the customers on GST.

Vadla Mahesh and V. Balaji Kesav Rao (2024)[4] have conduct study on benefits and draw backs of GST and possible advantages and effects of the recently enacted tax system on lodging sector and its clients. The research methodology adopted for the study is based on secondary source data. The conclusion of the

study is that location is the most influencing factor for hotel choice, followed by review and price and majority of the respondents are slightly disagreed that it has made GST rates more transparent.

5. Research Gap

From the above review of literature, we can understand that the most of the academicians and researchers are studies on customer's perception towards GST and the impact of GST on various sector in India like hotels, banking, etc., some the studies are highlighted the challenges are facing by the customers, other studies are related the tax system in India. other some of the studied are focused state, districts and local geographical areas but no study is covered hole country. So, this study is focused on customer's perception in Indian and contribution of tax by states in CGST.

6. Objectives of the Study

The objectives of the study are

1.   To study the customer's perception towards GST in India.

2.   To understand the contribution of states GST for GDP in India.

7. Research Methodology

The method of the study is mainly on empirical and descriptive in nature. The study is based on primary data and secondary datasource. The primary data is collected from customers in India through a structured questionnaire with the help of Google forms. The secondary data will be collect from articles, periodicals, magazines, newspapers, research journals and different websites.

7.1. Samples Selection & Size

The selection of sample respondents is used by random sampling method. The online questionnaire (Google Forms) was shared to the sample respondents through what's app groups and E-Mail across India. We have received the 250 responses from 16 states across the India. according to that the required the data is collected form a sample of 250 respondents who are pay in Indirect tax in India.

7.2. Study Scope

The present study is covers the customer perception towards GST in India. The present study covers the contribution of state governments pay CGST and collect SGST in the financial year 2022-23.

7.3. Statistical Tools used

The collected data is used to analyzed with the help of varies statistical tools such as Mean, Ranking Test, Reliability Test, Percentages, and Chi-Square Test.

8. Demographic Profile of the Respondents

The data collected from the customer's perception towards GST, those who are paying indirect tax in India across the country. The demographic profile of the respondents is shown in below Table-1.

Table-1 : Demographic Profile of the Respondents

Gender	Male				Female		Total
Response	162				88		250
Age (in Years)	**A. 18Yrs to 28Yrs**	**B. 29Yrs to 39Yrs**	**C. 40Yrs to 50Yrs**	**D. 51Yrs to 61Yrs**	**E. 62 & above Years**		**Total**
Response	36	138	60	10	6		250
Area of Living	**A. Urban**		**B. Rural**		**C. Semi Urban**		**Total**
Response	166		42		42		250
Education Qualification	**A. SSC**	**B.Intermediate**	**C. Degree**	**D. P.G**	**E. M.Phil.**	**F. BE/ B.Tech/ ME/ M.Tech** / **G. Ph.D**	**Total**
Response	0	2	14	102	20	96 / 16	250
Occupation	**A. Govt. Employee**	**B. Pvt. Employee**	**C. Business**	**D. House Wife**	**E. Software/ Pharma Employee**		**Total**
Response	96	124	14	6	10		250
Monthly Income	**A. Rs. 10,000 – 20,000/**	**B. Rs. 20,001 – 40,000/-**	**C. Rs. 40,001 – 60,000/-**	**D. Rs. 60,001 – 80,000/-**	**E. Rs. 80,001 – 1,00,000 /-**	**F. Rs. 1,00,001 and above rupees**	**Total**
Response	38	56	72	30	20	34	250

Source : Compiled from primary data.

The above table reveals that the majority of the respondents are males. 66% of the responded are belongs to urban are in the study. The qualifications of the respondents are like SSC, intermediate and Degree so on, but the 41% of the respondents are belongs to P.G followed by B.Tech and M.Tech, M.Phil and Ph.D Degree. The study is indicating that major respondents are belongs to private employees. The income level of the respondents is from 10,000/- to more than

one lakhs, but the highest respondents are belonging to 40,000/- to 60,000/- income group followed by 20,000/- to 40,000/- income group and 10,000/- to 20,000/- income groups.

8.1. Filing of Income Tax Returns by the Respondents

Filing of income tax returns by the respondents is shown in Table-2.

Table-2 : Filing of Income Tax Returns

E-Filing	Respondents	Percentage
A. Yes	180	72%
B. No	70	28%
Total	**250**	**100.00**

Source : Compiled from primary data.

The above table shows that 72% of the respondents are filing income tax returns to pay their income tax, through income tax portal.

8.2. Period of Time Known about The GST

The time period known about the GST act to the respondents is shown in the following Table-3.

Table-3 : Period of Time Known about The GST

Period	Respondents	Percentage
A. One-Year	20	8
B. Two Years	12	5
C. Three Years	34	14
D. Four Years	26	10
E. Five Years	46	18
F. More than five years	112	45
Total	**250**	**100**

Source : Compiled from primary data.

The above table shows that the 45% of the respondents are having knowledge about GST and GST act during the more that last five years, followed by 5 years and 4 years. It shows that the awareness of GST among the customers in India.

8.3. Knowledge of Customers on Products Exempted form GST

The products which exempted from GST which are known by the customers is shown in the following Table-4.

Table-4 : Knowledge of Customers on Products Exempted form GST

Products	Respondents	Percentage
A. Milk	90	72
B. Rice	68	54
C. Eggs	69	55
D. Domestics LPG	47	37
E. Sugar	44	35
F. Unbranded Wheat	54	43
G. Vegetable Oil	44	35
H. Edible Grains	39	31
I. News Paper	55	44
Total	250	100

Source : Compiled from primary data.

By observing above table it is understood that majority (72%) of the respondents are felt that milk is exempted from GST followed by Eggs, Rice Unbranded Wheat and NEWS paper which are daily needs in India. But among the above list only Sugar and Eggs are exempted form GST. On rice, milk we have 5% GST, on NEWS paper we have 12% GST and so on. It indicates that there is less awareness among the customers in India.

8.4. Knowledge of Customers on Services Exempted form GST

The services which exempted from GST which are known by the customers is shown in the following Table-5

Table-5 : Knowledge of Customers on Services Exempted form GST

Services	Respondents	Percentage
A. Agriculture Services	97	78
B. Government Services	42	34
C. Medical Services	62	50
D. Transportation Services	21	17
E. Educational Services	78	62
Total	250	100

Source : Compiled from primary data.

The above table is indicating that majority of the respondents are opinioned that agriculture services are exempted form GST. 62% of the respondents are said that educational services are exempted from the GST followed by medical services and government services.

8.5. Method of Purchasing of Products and Services

Checking GST rates by the customers while purchasing goods and services is shown in the following Table- 6.

Table-6 : Observation of GST While Purchasing

Observation	Respondents	Percentage
A. Always Checking	66	26
B. Some Times	128	51
C. Neutral	22	9
D. Not Checking	30	12
E. Not at all Checking	4	2
Total	250	100

Source : Compiled from primary data.

From the above table it is indicating that majority of the respondents are said that checking GST rates and value of the GST on particular products and services. 26% of the respondents are always checking the GST rates in their purchases.

8.6. Awareness on GST rates on Products and Services

Awareness on GST rates on particular products and services is shown in the following Table-7.

Table-7 : Awareness Level on GST Rates

Awareness Level	Respondents	Percentage
A. Fully Aware	44	18
B. Slightly Aware	136	54
C. Neutral	42	17
D. Not Aware	26	10
E. Not at all Aware	2	1
Total	250	100

Source : Compiled from primary data.

Form the above table it is shows that majority (54%) of the respondents are slightly aware about the GST rates on particular products and services. 18% of the respondents are fully aware about the GST rates on particular products and services, 10% of the respondents are not aware about GST rates, it is found that these 10% most are belonging to software and pharmacy employees.

8.7. Awareness levels of the respondents on GST Rate:

The awareness levels on particular products and their GST rates is shown in the following Table-8.

Table-8 : Awareness of Customers on Products and their GST Rates

Product	0%	P	5%	P	12%	P	18%	P	28%	P	Not Aware	P	Total	%
A. Salt	120	48	102	41	8	3	8	3	0	0	12	5	250	100
B. UnpackedPaneer	112	45	92	37	28	11	12	5	0	0	6	2	250	100
C. Packed Tea Powder	22	9	128	51	74	30	16	6	4	2	6	2	250	100
D. Roosted Coffee Beans	12	5	120	48	68	27	36	14	4	2	10	4	250	100
E. Processed Food	24	10	72	29	76	30	56	22	8	3	14	6	250	100
F. Mobiles	10	4	24	10	88	35	102	41	16	6	10	4	250	100
G. Fruit Juice	50	20	74	30	90	36	20	8	1	0	15	6	250	100
H. Toothpaste	30	12	80	32	64	26	56	22	6	2	14	6	250	100
I. Soap	30	12	74	30	66	26	62	25	3	1	15	6	250	100
J. Ice Cream	22	9	54	22	84	34	66	26	8	3	16	6	250	100

Source : Compiled from primary data.

Note : P = Percentage

Form the above table it is shows the majority of the respondents are felt that on packed tea power the GST is imposed 5%, followed by with 48% of the respondents are said on salt the GST is as 0%, 45% respondents are said on unpacked tea power the GST is 0%, on RoostedCoffee Beansis 5%, on mobile phones 18%. There is less awareness among the customers on GST.

8.8. Opinion on GST among the Customers.

The opinion of the customers on GST is shown in the following Table-9.

Table-9 : Customer's Perception on GST

Opinion	Strongly Disagreed	Points	Disagreed	Points	Neutral	Points	Agreed	Points	Strongly Agreed	Points	Total	Rank
	1	1	2	2	3	3	4	4	5	5		
A. Understanding GST and how it is implemented	2	2	6	12	42	126	132	528	68	340	1008	6
B. GST is a kind of indirect tax	0	0	12	24	38	114	86	344	114	570	1052	2
C. GST will abolish Services Tax, VAT, Excise Duty and other taxes	4	4	18	36	38	114	74	296	116	580	1030	4
D. GST will make Indian's tax system efficient and transparent	6	6	6	12	32	96	108	432	98	490	1036	3
E. The purpose GST is to bring tax uniformity within the nation	4	4	8	16	50	150	90	360	98	490	1020	5
F. GST will increase the price of Goods and Services	18	18	20	40	52	156	78	312	82	410	936	7
G. GST will increase the revenue of the nation	2	2	4	8	28	84	88	352	128	640	1086	1
H. GST will be burden to the customers	16	16	36	72	52	156	70	280	76	380	904	8

Source : Compiled from primary data.

From the above table it is shows that the opinionsare collected from the respondents on various aspects in GST and Impact of GST in country economic conditions. Assigned weights from 1 to 5 and multiplied with their scores, scores are totaled and given ranks. 1 rank is given to GST will increase the revenue of the nation, followed by GST is a kind of Indirect tax and GST will make Indian's tax system efficient and transparent. Given list rank to GST will be burden to the customers.

8.9. Customer Strategies in Purchasing Products and Services.

The customers are following different kind of strategies while purchasing products and services is shown in the Table-10.

Table-10 : Kind of Strategies Using Purchases

Product	Respondents	Percentage
A. Taking bill for every purchase.	86	69
B. Taking bill for costly products and services only	44	35
C. Avoiding bill for avoiding GST.	16	13
D. Reducing bill amount to the extent of GST.	24	19
E. Taking bill, if they give	31	25
F. Managing with quotations	9	7
Total	250	100

Source : Compiled from primary data.

The above table indicates that the various strategies are using by customers while purchasing products and services. 69% of the respondents are taking bill after their purchases, and some of the customers are taking bill for only costly products only. Few (13%) customers are avoiding bills to avoid GST and 7% of the respondents are said they are managing with quotations instead of bill/invoice.

8.10. Overall Perception on GST

The overall perception on GST by customers are shown in the Table-11.

Table-11 : Overall Perception about GST

Perception	Respondents	Percentage
A. Very Good	68	27
B. Good	96	38
C. Average	78	31
D. Poor	8	3
E. Very Poor	0	0
Total	250	100

Source : Compiled from primary data.

The above table shows that the perception on GST of customers, majority of the customers are felt good, followed by very good and average. So it is understood that the perception on GST is good.

9. Application of Chi-Square Test

It is necessary to apply the Reliability Test, Homogeneity Test and Normality Test for the data to apply Chi-Square Test.

9.1. Test of Reliability:

The reliability test purpose is to conduct to know the reliability of the data, with the help of SPSS. For this we utilized the Cronbach's Alpha test. If the alpha value lies between 0.1 to 0.6, the data said to be not reliable and also if the alpha value falls among the 0.7 - 0.9, the data is said to be reliable.

Table-12 : The Reliability Statistics

The Cronbach's Alpha	The Cronbach's Alpha Based on Standardized Items	No. of Items
.737	.737	9

The reliability statistic Cronbach's Alpha is calculated for 9 items is 0.737 so the data is said to be highly reliable for select items for analysis.

9.2. Using Chi-Square Test:

The occupations of respondents are influence the customer perception towards in India. The observations of customers are Understanding GST and how it is implemented, GST is a kind of indirect tax, GST will abolish Services Tax, VAT, Excise Duty and other taxes, GST will make Indian's tax system efficient and transparent, the purpose GST is to bring tax uniformity within the nation, GST will increase the price of Goods and Services, GST will increase the revenue of the nation and GST will be burden to the customer's point of view with the help of Likert 5-Point scale.

Formulation of Hypotheses:

The following hypotheses are formulated to analyzed to know the perceptions on varies opinions on GST in India.

H_0 : There is no significance difference among the awareness and perception of the respondents on GST in India.

H_1 : There is a significance difference among the awareness and perception of the respondents on GST in India.

9.3. Chi-Square Test:

The above hypotheses are tested through applying the Chi-Square Test with the help of SPSSsoftware at 5% level of Significance. The Chi-Square (χ^2) test results are shown in Table-13.

Table-13 : Chi-Square (χ^2) Test Results

S.NO.	Parameters	Chi-Square Test	Degrees of Freedom	Asymp. Sign (2 Side)	Results
1	Understanding GST and how it is implemented.	39.661	16	0.001	Rejected
2	GST is a kind of indirect tax.	43.163	16	0.000	Rejected
3	GST will abolish Services Tax, VAT, Excise Duty and other taxes.	29.724	16	0.019	Rejected
4	GST will make Indian's tax system efficient and transparent.	26.226	16	0.050	Rejected
5	The purpose GST is to bring tax uniformity within the nation.	37.617	16	0.002	Rejected
6	GST will increase the price of Goods and Services.	32.770	16	0.008	Rejected
7	GST will increase the revenue of the nation.	30.424	16	0.016	Rejected
8	GST will be burden to the customers.	13.859	16	0.607	Accepted

Source : Compiled from primary data.

Form the above table it is observed that the calculated alpha values of all variables using through SPSS in most of the aspects less than the p value 0.05. So the null hypothesis is rejected, and accepted alternative hypothesis. Hence, it means that there is a significance difference among the awareness and perception of the respondents on GST in India. It means that there is a difference between awareness on GST is difference from perception on GST.

10. State Wise Collections of GST in Financial Year 2023-24

The following table shows that the collection of GST by the state governments during the financial year 2023-24 in Table-14.

The table is reveals that the GST collections by the state government and ranks assigned based on the total GST collection by the state government. High amount of GST is collected in Maharashtra state, followed by Karnataka, Gujarat, Tamil Nadu and Haryana are the top 5 states in GST collection and contribution to the country economy. Very less collections GST in Manipur, Mizoram and Nagaland. The total GST collection during the past financial year 2023-24 is 15,23,249 crores.

Table-14 : State Wise Domestic GST Collection (Crores)

S.No.	State Name	Financial Year 2023-24					
		CGST	SGST	IGST	CESS	TOTAL	Rank
1	Jammu and Kashmir	2,079	2,945	1,594	86	6,704	22
2	Himachal Pradesh	1,874	2,597	5,464	21	9,956	21
3	Punjab	5,795	8,406	9,483	378	24,061	17
4	Chandigarh	526	689	1,537	20	2,771	26
5	Uttarakhand	3,861	5,415	9,824	131	19,231	18
6	Haryana	15,813	20,334	59,726	7,041	102,914	5
7	Delhi	13,254	15,647	36,232	1,312	66,445	7
8	Rajasthan	13,710	17,531	17,081	1,852	50,174	11
9	Uttar Pradesh	23,824	32,534	29,779	15,556	101,693	6
10	Bihar	5,025	8,535	2,418	2,043	18,021	19
11	Sikkim	317	420	2,969	1	3,707	25
12	Arunachal Pradesh	509	628	168	2	1,308	31
13	Nagaland	242	307	116	47	711	33
14	Manipur	250	346	72	3	670	34
15	Mizoram	181	273	45	1	500	35
16	Tripura	387	512	152	3	1,053	32
17	Meghalaya	491	607	1,137	24	2,260	30
18	Assam	4,739	6,010	3,820	1,033	15,602	20
19	West Bengal	19,267	23,436	15,308	4,603	62,613	8
20	Jharkhand	6,309	8,840	12,650	6,939	34,738	15
21	Odisha	3,823	16,455	15,102	9,368	54,748	10
22	Chhattisgarh	6,890	8,175	12,101	7,708	34,874	14
23	Madhya Pradesh	10,336	13,072	11,211	7,554	42,174	13
24	Gujarat	34,753	42,371	40,020	8,025	125,168	3
25	Daman and Diu	1	1	2	-	3	39
26	Dadra and Nagar Haveli	512	661	3,153	7	4,333	24
27	Maharashtra	86,258	100,843	109,787	23,229	320,117	1
29	Karnataka	33,321	40,969	54,123	16,852	145,266	2
30	Goa	1,818	2,352	2,264	42	6,475	23
31	Lakshadweep	16	19	10	-	45	38
32	Kerala	10,805	13,967	5,848	57	30,677	16
33	Tamil Nadu	31,693	41,082	39,807	8,747	121,329	4
34	Puducherry	333	509	1,786	8	2,636	27
35	Andaman & Nicobar	157	206	63	2	428	37
36	Telangana	15,513	20,012	17,868	6,549	59,942	9
37	Andhra Pradesh	10,687	14,008	16,206	3,398	44,298	12
38	Ladakh	188	250	42	1	481	36
39	Other Territory	156	231	2,227	-	2,615	28
40	CBIC	-	-	2,507	-	2,507	29
	Grand Total	375,710	471,195	543,704	132,639	1,523,249	

Source : https://www.gst.gov.in/

11. Conclusion

From the above mentioned analysis, it is observed that 65% of the respondents are males and the customers of GST are covered from 16 states from all over the country. The data reveals that the 45% of the respondents are known about GST form more than last 5 years. The survey shows that the customers are known about the GST but don't have knowledge about the percentages of GST on particular products. Even though there is a positive opinion on perception of GST in India. The 69% of the respondents are taking bills after their purchases and 25% of the respondents are reducing bill amount to reduce the GST and managing with quotations. The chi-square test is also explaining that there is a significance difference among the customer's awareness and perception on GST in the customers in India. The Maharashtra government is stud first rank with highest GST Collection and followed by Karnataka, Gujarat and Tamil Nadu. The state and central governments has to take decisions to improve awareness and knowledge on GST. The overall perception of the respondents is that GST will help to increase the country revenue and make uniform tax system in India.

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Towards a Waste-Free India : Investigating the Impact of Attitudes on Food Waste Intentions

Atul Kumar and Jetendra Singh Rathore

Abstract : Purpose : The aim of the paper is to analyze the impact of personal attitude, health attitude and financial attitude on intention to avoid food waste.

Design/Methodology/Approach : 451 respondents were surveyed to analyze the behaviour towards food wastage. Structural Equation Modeling was used to analyze the data.

Findings : According to the study, there is a substantial connection between the intention to prevent food waste and one's personal attitude, financial attitude, and perceived health risk. The most crucial factor of all was determined to be financial attitude.

Research Limitations : To collect data, convenience sampling was employed. Since, information was obtained from Delhi-NCR undergraduate students. Therefore, it is not possible to generalize the study's results.

Practical Implications : Food waste is a big problem for the world including India. Problem of food waste can be resolved, if the government tries to create more awareness and convince people how food waste is associated with financial loss and health loss of the individual and the country as a whole.

Originality/Value : The current study explores the Theory of Planned Behaviour (TBP) for food wastage in the Indian context.

Keywords : Food Wastage, Theory of Planned Behaviour,TBP, Financial Attitude, Health Attitude, Personal Attitude.

1. Introduction

Food Waste has emerged as one of the most critical problems confronted by the world in the twenty-first century. Moreover, resources like land, manpower, water etc.

Dr. Atul Kumar, Associate Professor, Department of Commerce, PGDAV College (University of Delhi), Delhi. Email : dratulkumar83@gmail.com, Ph : 9953052770.

Dr. Jetendra Singh Rathore, Department of Commerce and Management, Wisdom Banastali Vidyapith (Rajasthan), India.

are used for foodproduction which lead to greenhouse gas emissions and when food is wasted, it further aggravates the problem of green-house gas emission (Tukker & Jansen, 2006). Apart from green-house gas emissions, wastage of food also leads to societal, nutritional and economic challenges (Halloran et al., 2014).

According to earlier studies, 1.3 billion tons of food is wasted annually and the prime source of food waste are the consumers. It was found by Griffin et al. (2009) and Quested et al. (2011) that the majority of food waste occurs at the consumer level along the whole supply chain network. Additionally, Aktas et al. (2018) argued that food wasted at the consumer level is vital in terms of economic, social and environmental aspects as there are many people in the world who do not get enough food to eat. Nunkoo et al. (2021) also confirmed in their study that it is at the household level that the major amount of food is wasted. Forbes et al. (2011) estimated that all households produce 570 million tonsof food waste. Food waste has become such a big problem that in spite of the fact that world has the capacity to produce surplus food, billions of people still face hunger (Yildirim et al., 2016).

According to International Food Container Organization (IFCO) Systems (2014), Central region and South Asian region are the biggest food wasters. Malaysia isknownas a big food wasting nation (Teoh et al., 2022). The Food and Agriculture Organization of the United Nations (FAO) estimated Qatar wastes about 250 kilograms per person of food annually. Further, Qatar has been ranked third in terms of food wastage (ECOMENA, 2016). India is the most populous country with large number of people who go to sleep without sufficient food, yet India stands at the seventh place in the category of food wasting countries (Matharu et al., 2022). North America and Europe have annual food waste rates of 115 and 95 kilograms per person, respectively. However, it ranges from 6 to 11 kg per year in Sub-Saharan Africa and South/South East Asia (Gustavsson et al (2011).

Food waste has been extensively analyzed through various lenses, including its impact on food security (Wang et al., 2018) and its significant contribution to greenhouse gas emissions and climate change. Food waste at consumer level is of prime importance as it is the largest source of wastage. As a result, a number of food waste researcheshave been conducted at consumer level. Some of the prominent researches are as following. Factors affecting food choices (De Boer et al., 2007), predictor of consumer food waste (Visschers et al., 2016), social influence and food waste (Comber & Thieme, 2013), social media and food waste, factors of food reduction (Teoh et al., 2022). But in-spite of many studies on the food waste, few studies have tried to identify the factors that affect consumer food choice and consumer behaviour related to food(Chen, 2022).

Eating food is considered a social act from anthropological viewpoint which is connected with culture (Contreras & Arnaiz, 2005). Additionally, food eating habits are determined by culture and the social norms Poulain & Proença, 2003). Similar to food eating habits, food waste behaviour is also influenced by the culture/country. Researchers have suggested that food waste behaviour should be studied in different cultures/countriesto reach a holistic perspective (Aktas et al., 2018; Chen, 2022; Fraj-Andrés et al., 2022).

Past researches have preferred the theory of planned behaviour while exploring food waste theme (Aktas et al., 2018). The theory of planned behaviour brings out some critical ideas from the social and behavioral sciences. As per the theory, behavioral intentions are formed by the attitude toward the behaviour, subjective norms about the behaviour and perceived control.The present study attempts at determining the extent to which financial attitudes, personal attitudes and perceived health risk impact the intent to avoid food waste in the Indian households.

This study will make valuable contribution to the previous literature on this issue. As there is a scarcity of studies on food wastage in India, this study responds to the calls by different researchers to study food wastage in different cultures/countries. As India is a multi-cultural and multi-lingual country, applying the TPB model for food waste may present some unique insights. Secondly, impact of additional variables apart from TBP like "perceived health risk" on "intention to avoid food waste" have also been explored in this study.

Review of literature has been covered in the next section. Research methods have been described in the third section. Fourth section deals with analysis followed by the fifth section which deals with discussions, conclusions and limitations.

2. Review of Literature

2.1. Theory of Planned Behaviour (TBP)

TBP was developedbyAjzen (1985). The main construct used in the theory is "intention to do the behaviour" which determines individual behaviour (Visschers et al., 2016). Intention has been defined as the desire to do something (Fishbein & Ajzen, 1977). Moreover, "intention to do the behaviour" is formed from three constructs i.e., "attitude", "social norms" and "perceived behavioral control". To begin, attitude is defined as "a way of thinking or feeling about something" (Francis et al., 2004). Next, subjective norms is defined as "social

group pressure that may or may not approve an individual's behaviour" (Ajzen, 1991). Finally, perceived behavioral control is defined as "people's belief in their ability to perform a specific behaviour" (Yzer, 2012).

2.2. Conceptual Model and Hypothesis Development

Drawing on the theory of planned behaviour, this study explores the effect of attitude on intention to avoid food waste. Apart from general attitude, extant literature also identifies three other types of attitude i.e. environmental, financial and health concerns (Visschers et al., 2016). Financial concern is the cost of over-purchasing that motivates people to reduce food waste (Graham-Rowe et al., 2014). Secondly, food waste is hazardous to human health (Ojeh & Aworinde, 2016). Food waste is also one of the reasons for generating harmful emissions which is the source of various human diseases. Also, the release of greenhouse gases as a result of food waste disposal activities has an indirect impact on people's health. Climate change result in increasing temperatures (and low ozone levels) affects elderly people with heart problems, as well as aged and young population with respiratory disorders such as asthma. (Giusti, 2009). Finally, level of general awareness also influences the attitude of an individual towards food waste.

Based on the TBP and the contextual factor identified through extant literature, the following conceptual model is proposed :

Figure-1 : Conceptual Model
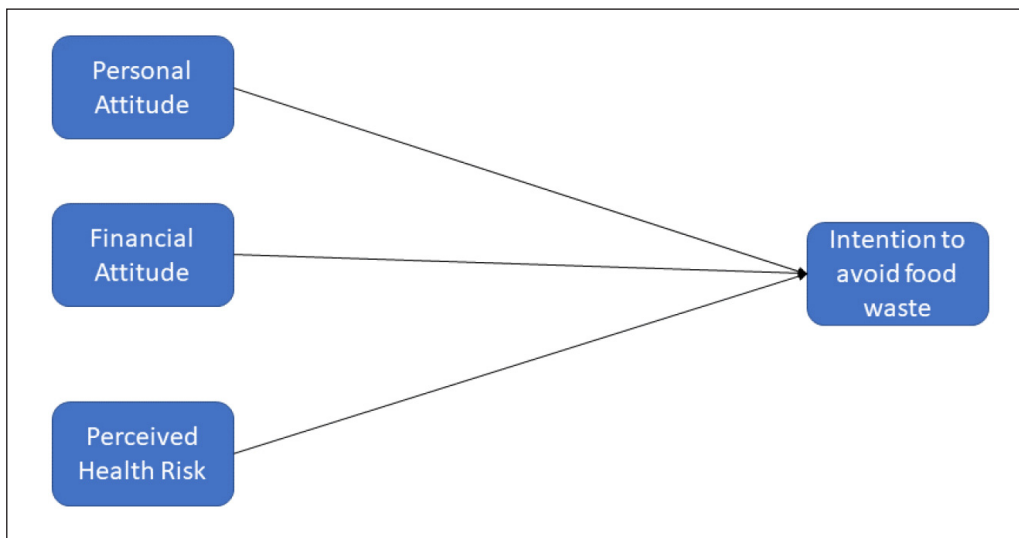
2.3. Intention to Avoid Food Waste

Researchers have defined intention in two ways. Firstly, most of the researchers have defined intention as the probability to perform or not to perform a particular behaviour. Another set of researchers have defined intention by linking it with motivation.

2.4. Definition of Intention

According to Warshaw & Davis (1985), behavioral intentions can be defined "as the degree to which a person has formulated conscious plan to perform or not to perform some specified future behaviour." Further, Fishbein & Ajzen (1977) defined intention as individual's subjective likelihood of performing a specific behaviour or not. Moreover, Kagee & Freeman (2017), Teoh et al. (2022)linked intention with the motivation factor that affects behaviour.

2.5. Conceptualization of Intention in Food Waste

Behavioral intention expresses a person's commitment to engage in an activity and is formed by attitude, subjective standards, and perceived behavioral control (Teoh et al., 2022). In the current study, the desire to avoid food waste is referred to as intention to avoid food waste. Previous studies have also used intention to predict behaviour such as food waste behaviour (Aktas et al., 2018).

2.6. Personal Attitude

Researchers agree to the fact that attitude is formed through evaluation of past experiences. According to Fishbein & Ajzen (1975), attitude is defined as "a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object. "While Shaw (2016) stated that attitude can also be as simple as evaluating prior experiences that are easily accessible so as to make a decision based on an appraisal of current facts. Beside from the general attitude toward food waste, there are three other types of attitude as reported in the extant literature which affect food waste i.e. environmental concerns, health concerns and financial concerns (Visschers et al., 2016).

In this study, personal attitude, financial attitude and perceived health risk have been used to judge individual's intention to avoid food waste.

Extant literature have found a positive relationship between attitude and intention to buy environmentally suitable products (Kumar et al., 2017). M.S. Kim & Hunter (1993) also confirmed a connection between attitude and intention. Hussein (2017) found that relationship between students' attitude and their

intention to use e-learning was substantial. However, Teoh et al. (2022) could not establish a favorable relationship between one's perspective on food waste and intention to avoid wastage of food. Hence, the following hypothesis is proposed:

H_1 **:** Personal attitude towards food waste positively affects the intentions to reduce wastage of food.

2.7. Financial Attitude

Dai (2021) defined financial attitude as the individual's feeling about his financial issues. Financial attitude has also been defined by Aktas et al. (2018) as the price consciousness of the consumer. According to Urbain (2000), financial attitude has been defined as a "stable psychological construct characterized by the meaning that the individual attributes to money and which leads to types of behavior". Culture, education and personality-all have an impact on people's financial attitude. Individuals' financial attitudes are thus developed and evolved as a psychological process in which personal, societal, and cultural values are incorporated (Zeng & Durif, 2020). Visschers et al. (2016) showed that customer beliefs about money have an influence on desire to reduce food waste. Over-spending was frequently cited as a motivator for consumers to decrease food waste (Graham-Rowe et al., 2014; Quested et al., 2013). Williams et al. (2012) in their research proved that people who are price conscious tend to waste less food. Hence, the following hypothesis is proposed:

H_2 *:* Financial attitude positively affects intention to avoid food waste.

2.8. Perceived Health Risk

Kim et al. (2008) defined perceived risk as the possible loss and uncertainty in reaching the intended result. Perceived health risk is frequently described as a person's susceptibility to contracting an illness and the severity of that condition or a person's perceived likelihood and sensitivity of falling sick (Brewer et al., 2004). In this study, perceived health risk has been defined as the risk of falling sick due to using expired food items. The concept of perceived health risk has been extensively studied by various researchers. Li & Hu (2018) established a positive relationship between perceived health risk caused by hazardous pollutants and behavioral intention. Furthermore, during the COVID-19 pandemic, Fihartini et al. (2021) found a strong relationship between increased perceived health risks associated with shopping in brick-and-mortar establishments and online stores. It has been proved that people having adverse medical conditions are averse to food waste. Following a healthy diet has been

demonstrated to deter consumers from wasting any food (Quested et al., 2013), although consumers waste perishable food that are not consumed on time (Graham-Rowe et al., 2014). Hence, following hypothesis is proposed:

H₃: Perceived health risk negatively affects intention to avoid food waste.

3. Research Methodology

3.1. Sampling

To test the hypothesized research model, undergraduate students from the colleges of Delhi-NCR were sampled. Younger consumers are generally considered to waste more food and have different eating patterns from older consumers due to predilection for dining out (Principato et al., 2015). A total of 500 questionnaires were disseminated. Convenience sampling strategy was used in the investigation. In all, 460 questionnaires were returned. After removing erroneous replies, a sample size of 451 was used for drawing results.

3.2. Questionnaire

The questionnaire was developed on google forms and distributed via WhatsApp which is a popular messaging application among students. The questionnaire was developed using alikert scale. There were two sections of the questionnaire. Section 1 consisted of questions for assessing attitude of the respondents towards food waste. In total, Section 1 consisted of 4 constructs with 14 items i.e., Intention to Buy, Personal Attitude, Financial Attitude, Perceived Health Risk. These constructs were adopted from Werf et al., (2019). All the constructs were suitably modified for Indian respondents. 2nd section consisted of the questions related to demographic profile of the respondents.

3.3. Measurement Model

A preliminary data analysis was conducted and all variables' multicollinearity, outliers and missing values were examined.

3.4. Exploratory Factor Analysis

Exploratory Factor Analysis was used with 14 items. Sample Adequacy was established by the result of Kaiser-Meyer-Olkin (KMO) Test. Bartlett's test of sphericity also confirmed sufficient correlation which is the precondition for Principal Component Analysis (PCA). Total four factors were extracted which had eigen values over 1 and explained 76.619 % of the variance.

3.5. Measurement Model

Confirmatory Factor Analysis was used to examine the measurement model. The CFA fit was excellent (CMIN = 256.783, df = 71, CMIN/df = 3.617 p = .000, CFI = .950, GFI = .923, RMSEA= .076)

Table-2 : Confirmatory Factor Analysis

	M	SD	SL
Intention to buy			
I1	4.35	0.94	0.851
I2	3.81	0.98	0.59
I3	4.38	0.93	0.83
I4	4.10	0.93	0.711
Personal Attitude			
PA1	4.00	1.179	0.872
PA2	4.00	1.255	0.847
PA3	4.05	1.264	0.94
Financial Attitude			
FA1	1.95	1.252	0.941
FA2	2.05	1.116	0.886
FA3	2.07	1.098	0.796
Perceived Health Risk			
PHR1	3.59	1.093	0.686
PHR2	3.20	1.242	0.807
PHR 3	3.31	1.110	0.804
PHR 4	2.94	1.393	0.815

Overall Impact: CMIN = 256.783, df = 71, p = .000, CFI = .950, GFI = .923, RMSEA = .076

Note : SL= Standard Loading, M = Mean, SD = Standard Deviation

4. Validity and Reliability

Each construct's AVE value was calculated to assess convergent validity. The construct correlations were assessed for discriminant validity using the square root of the AVE for each component. As shown in Table 3, all AVE values have been found to be higher than 0.50, and each construct's square root of AVE was larger than its association with other constructs. Convergent and discriminant validity were therefore unaffected. Each construct's reliability was higher than 0.70, meeting the requirements for overall reliability.

Table-3 : Reliability and Discriminant Validity

CR	Alfa	AVE	PHR	INT	PA	FA	
PHR	0.857	0.861	0.868	0.78			
INT	0.83	0.837	0.865	0.05	0.753		
PA	0.915	0.917	0.93	0.159**	0.066	0.887	
FA	0.905	0.908	0.929	-0.300***	0.216***	-0.414***	0.876

Note : Alfa = Cronbach's alfa, AVE= Average Variance Extracted, PHR = Perceived Health Risk, INT= Intention to Buy, PA = Personal Attitude, FA = Financial Attitude.

Figure-2 : ....
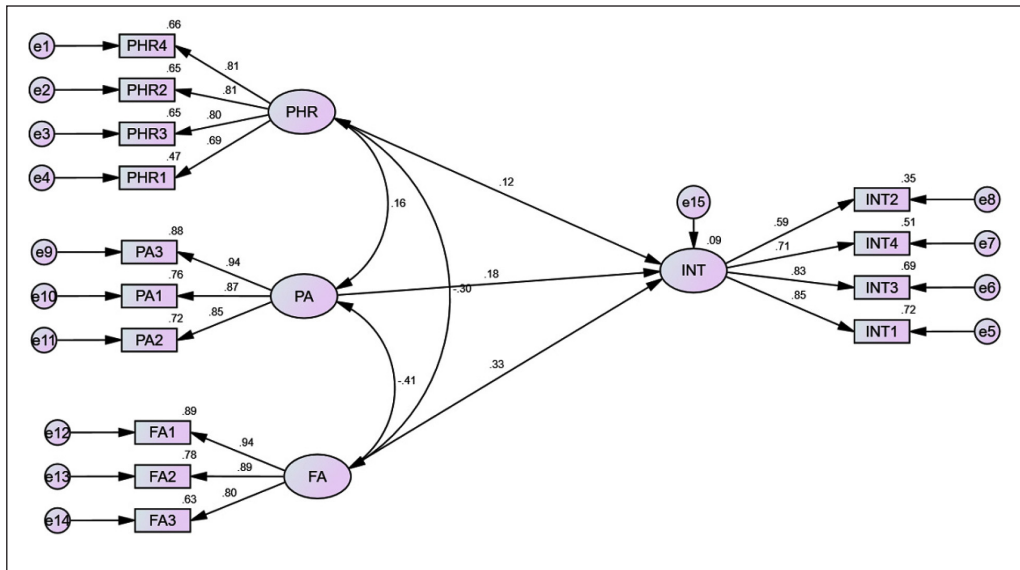
Note : PHR = Perceived Health Risk, INT= Intention to Buy, PA = Personal Attitude, FA = Financial Attitude.

The relationships were examined using an AMOS generated structural equation model. A model is accepted when the value of the Chi-square minimum/ Degree of freedom (CMIN/df) lies between 1 to 5 (Hu & Bentler, 1999), the Goodness-of-Fit (GFI) indices and the Confirmatory Fit Index (CFI) is ≥ 0.90 (Hair, 2013). Furthermore, an adequate-fitting model is acceptable, if the AMOS estimated value of the root mean square error approximation (RMSEA) is between 0.05 and 0.08 (Hair, 2013). The model's fit indices were within the acceptable range:

CMIN/df =3.167, the goodness-of-fit (GFI) = .923 , TLI = .936 , CFI = .950, SRMR =.703, and RMSEA = .076 .

The R2 for the model was .89 for intention to avoid wastage of food. This shows that 9 % variance in intention to avoid wastage of food is accounted by personal attitude, financial attitude and perceived health risk.

Table-4 : Hypothesis Result

Hypothesis No	Hypothesis	β	t value	Result
H1	Personal attitude regarding food waste effects positively desire to reduce food waste.	0.184	2.143	supported
H2	Financial attitude positively effects intention to avoid food wastage.	0.329	3.219	supported
H3	Perceived health risk negatively effects intention to avoid food wastage.	0.12	5.456	supported

5. Discussion

The purpose of this research is to test a model to understand the effect of attitude (personal, financial and health attitude) on intention to avoid food wastage in Indian scenario based on the TBP. The result of the present study supported all the three-hypothesis proposed in the model i.e., hypothesis 1, hypothesis 2 and hypothesis 3.

Attitude has a substantial impact on the intention to prevent food waste which leads to avoidance of food waste. People should adopt a different perspective on food waste and link it to both monetary and health losses.

Government should organize awareness programs to make people understand negative effects of food wastage on the economy and the country.

It has been a well-established fact in the previous researches that in the entire supply chain, maximum food wastage happens at the household level and this study shows how important individual attitude is in avoiding food wastage. The study reveals that a major connection exists between personal attitude, financial attitude and perceived health risk with intention to avoid wastage of food, supporting the TPB's perspective that attitude has a profound impact on intention to avoid food wastage. Also, by bringing in a desired change in the attitude of an individual, his behaviour can be changed.

The role of the government is quite critical in curbing the menace of food waste. Government should launch nationwide campaigns to educate citizens about

the impact of food waste on environment and economy. The government can also enforce curriculum change at the school and university levels to sensitize the students about the issue of food wastage. Exposing the young people about the negative effects of food wastage should bring in the attitude shift about the food wastage. Collaborating with the social media influencers can also help the government in bringing in the desired changes in the attitude of the citizens and creating an awareness at the rapid pace.

The government enforce the law on the business to donate unsold but edible food to the NGOs and can provide tax incentives for the same. Government can further provide incentives for recycling food waste into biofuels and fertilizers. Incentives in the form of lower waste management fees can also be provided to the household and business that separate food waste properly. Government can also implement the polices where the household/ business pays for food waste management based on the weight of the food waste.

With the help of technology and AI, government can develop the platform which links surplus food with those in need.

6. Conclusion

The study seeks to investigate the impact of attitude on the intention to avoid food wastage. Based on a quantitative research of attitudes toward the intention to prevent food waste in the Indian households, it was found that personal attitude, financial attitude and perceived health risk are essential aspects for consideration while determining the desire to avoid food wastage. Among the three factors, financial attitude has been found to be the most important factor.

7. Limitations

The study has certain limitations. To begin, convenience sampling was used to obtain data. Secondly, data was gathered from the undergraduate students of University of Delhi. As a result, the study's findings cannot be generalized. Because of differences in habits and food culture, consumers from various cities/ parts of India may probably provide different information. A replication of the study using various sampling methods and at different places of India, which are culturally different from Delhi, might generate intriguing findings.

8. Future Research Directions

TBP is the main theory used in literature to explain food waste behaviour. Future researchers may explore other theories to understand the issue from different

angles. Multiple theories like the theory of behavioral change, theory of reasoned action or multiple theories may be used for further research in this field. The present study did not take into account the subjective norms, perceived behavioral control and actual food waste behaviour from TBP. Future studies should include this variable also to understand the food waste behaviour in detail.

There is a major disparity in consumption patterns between working and non-working persons. Families in which all the members are working find less time to manage their meals. Hence, food wastage is more in such families. Therefore, comparative analysis can be done between working and non-working individuals by including it as a moderator in the analysis.

Since India is ranked as 7th country in the world with regard to the wastage of food, the policy makers of the country have a tough task at their hands to reduce the food wastage. The policy makers need to understand the attitude of the individuals and make policies which are centered around individual attitude. One way of bringing in desired change in the attitude of the individuals is to make the individuals aware about the implications of the food wastage. By understanding the attitude of the individuals, it will be easy for policy makers to prepare policies related to food waste in the country.

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Climatic Conditions and Impact of Natural Calamities on the Sustainability of Farmer Producer Organizations (FPOs)

BIJENDRA SINGH YADAV AND LAXMIKANTA TRIPATHY

Abstract : *Farmer Producer Organizations (FPOs) are pivotal in strengthening the agricultural economy, particularly for smallholder farmers who face numerous challenges. However, the sustainability of FPOs is increasingly threatened by changing climatic conditions and the frequent occurrence of natural calamities. This article examines the multifaceted impacts of extreme weather events—such as droughts, floods, cyclones, and pest outbreaks—on the operations and financial stability of FPOs. Climatic variables, including temperature fluctuations, erratic rainfall patterns, and extreme weather events, disrupt crop cycles, reduce yields, and damage infrastructure, posing significant risks to FPO sustainability. Drawing insights from case studies in drought-prone Marathwada, cyclone-affected West Bengal, and flood-hit Kerala, this study highlights the challenges FPOs face and their adaptive strategies. Key approaches to enhancing resilience include promoting climate-resilient crops, diversification of livelihoods, sustainable water management practices, and robust disaster preparedness plans. Additionally, collaboration with government programs, access to insurance, and leveraging digital platforms for market linkages are identified as critical factors for recovery and growth. This paper underscores the urgent need for proactive planning and capacity-building to enable FPOs to withstand climatic and disaster-related shocks, ensuring their role as catalysts for agricultural development and rural empowerment.*

Keywords : Livelihood, Climatic Conditions, Climate Resilient Practices, Long-term Sustainability.

Dr. Bijendra Singh Yadav, Assistant Professor, School of Commerce & Management, Starex university, Gurgaon, Haryana.

Laxmikanta Tripathy, Research Scholar, Starex university, Gurgaon, Haryana,
E-mail : lktripathy26@gmail.com

1. Introduction

Farmer Producer Organizations (FPOs) play a pivotal role in ensuring equitable access to resources, fair market prices, and improved livelihoods for smallholder farmers. However, their operations are deeply intertwined with environmental and climatic factors. As climate change exacerbates the frequency and severity of extreme weather events, FPOs face increasing challenges. A deeper understanding of these challenges and potential adaptive strategies is critical for ensuring their sustainability.

2. Climatic Conditions Affecting FPOs

2.1. Temperature Fluctuations

Temperature deviations, whether in the form of extreme heat or cold, pose severe risks to agricultural productivity. Crops have distinct thresholds for temperature tolerance, beyond which growth and development are adversely affected. For example:

- **Heatwaves :** High temperatures can accelerate crop maturation, reduce grain size, and lower yields. In extreme cases, heat stress can cause crop failure.

- **Cold Spells :** Unseasonal cold weather damages sensitive crops like fruits and vegetables, impacting both quality and market value.

Additionally, changes in temperature influence pest and disease prevalence. For instance, warmer climates may extend the breeding seasons of pests, increasing their impact on crop health.

2.2. Rainfall Variability

Rainfall patterns are critical for agricultural cycles, but increasing variability disrupts traditional practices:

- **Droughts :** Insufficient rainfall during critical growth periods leads to reduced yields. Prolonged droughts, as seen in Marathwada, Maharashtra, force farmers to rely on expensive irrigation methods, escalating costs for FPOs.

- **Excess Rainfall :** Heavy rains can result in flooding, soil erosion, and crop loss. Waterlogging, in particular, negatively impacts root systems and diminishes productivity.

2.3. Humidity and Wind Patterns

● High **humidity** fosters conditions for fungal diseases like rust or powdery mildew, particularly in crops like wheat and grapes. Post-harvest storage is also compromised, leading to spoilage and wastage.

● Strong **winds** associated with storms or cyclones damage standing crops, destroy greenhouses, and destabilize infrastructure such as warehouses and cold storage units.

2.4. Frost and Hailstorms

● **Frost** can destroy sensitive crops like potatoes, tomatoes, and apples. In Himachal Pradesh, frost regularly damages apple orchards, leading to decreased export quality and higher losses for FPOs.

● **Hailstorms**, which often accompany severe weather, flatten standing crops, reduce productivity, and impose heavy costs on recovery.

3. Impact of Natural Calamities on FPOs

3.1. Drought

Drought leads to water scarcity, reducing irrigation and forcing FPOs to allocate more resources toward alternative water sources. This financial strain can make it challenging to recover during subsequent growing seasons.

3.2. Flooding

Floods cause direct crop damage, disrupt supply chains, and destroy infrastructure. For example, during the 2018 Kerala floods, spice FPOs suffered heavy losses due to landslides and crop destruction. Rehabilitation required significant financial and technical support.

3.3. Cyclones and Storms

In coastal areas, cyclones like Amphan uproot trees and damage critical infrastructure, such as roads and warehouses, hindering FPO operations. Additionally, disruptions to power and communications exacerbate logistical challenges.

3.4. Pest and Disease Outbreaks

Post-disaster conditions often lead to secondary crises, such as pest outbreaks. For example, Rajasthan faced severe locust invasions in 2020, which caused

widespread crop loss. Delayed planting and pest control expenses further strained FPOs.

3.5. Soil Erosion and Land Degradation

Severe weather events like flash floods and landslides degrade topsoil, reducing agricultural productivity over time. Soil fertility loss necessitates expensive soil rehabilitation measures, which many FPOs cannot afford.

4. Strategies for Building Climate Resilience in FPOs

4.1. Adopting Climate-Resilient Practices

- **Crop Varieties :** FPOs can promote the use of drought-resistant, pest-tolerant, or short- duration crops to reduce the vulnerability of farmers to climatic shocks.

- **Agroforestry :** Integrating trees into farming systems improves soil stability, reduces erosion, and provides additional income from timber or fruit.

4.2. Diversification of Crops and Livelihoods

Reducing dependency on a single crop by diversifying production can minimize risks. FPOs in Marathwada have encouraged farmers to grow less water-intensive crops, such as millets, alongside traditional crops like cotton.

4.3. Water Management Innovations

- Practices like **rainwater harvesting** and **drip irrigation** ensure efficient water use.

- Community-managed irrigation systems reduce dependency on erratic rainfall.

4.4. Disaster Preparedness and Risk Reduction

- Developing **early warning systems** can help farmers prepare for adverse weather.

- Building robust storage facilities and flood-resistant infrastructure mitigates the impacts of extreme weather.

4.5. Access to Financial Instruments

- Crop insurance schemes provide critical financial relief post-disaster, as seen in the recovery from Cyclone Amphan.

- Microfinance options for FPOs enable members to rebuild operations without excessive debt.

4.6. Collaboration with External Agencies

Government agencies, NGOs, and private organizations can support FPOs through :

- Capacity building for climate-smart agriculture.

- Providing subsidies for resilient infrastructure, such as solar-powered irrigation.

5. Case Studies on FPO Resilience

1. **Drought in Marathwada :** FPOs adopting water-saving techniques showed greater resilience, though smallholder farmers remained burdened by debt.

2. **Cyclone Amphan in West Bengal :** FPOs leveraging digital platforms for marketing recovered more quickly than those without such access.

3. **Kerala Floods** : Government subsidies and agroforestry initiatives helped spice FPOs rehabilitate land and infrastructure.

4. **Locust Invasion in Rajasthan :** Early warning systems minimized losses for some FPOs, while others struggled due to delayed planting.

5. **Frost in Himachal Pradesh :** Investments in frost protection and crop diversification reduced the vulnerability of apple-growing FPOs.

6. **Ganjam District, Odisha :** Here is a table summarizing the specific impact of disasters on Kharif production in **Ganjam District, Odisha**, from 2020 to 2024 :

6.1. Key Insights for Ganjam District:

1. **Cyclones** (2020 and 2024) caused the most severe losses, particularly for paddy, banana, and vegetable crops, due to strong winds and water-logging.

2. **Floods** (2021) led to moderate losses, primarily affecting paddy fields in low-lying areas.

3. **Drought** (2022) severely impacted rainfed crops like millets, reducing overall agricultural productivity and income.

Table-1 : Summary of Specific Impact of Disasters on Kharif Production in Ganjam District.

Year	Type of Disaster	Crops Affected	Production Loss (%)	Area Affected (ha)	Key Impacts
2020	Cyclone (Amphan)	Paddy, Pulses, Vegetables	20%	35,000	Damage to standing crops, water logging, infrastructure loss (storage facilities, roads).
2021	Floods	Paddy, Groundnut	15%	25,000	Submerged fields, seedling loss, delayed sowing and harvesting.
2022	Drought	Paddy, Millets	25%	18,000	Reduced water availability, lower yield, migration of agricultural labor.
2023	Pest Outbreak (Locusts)	Cotton, Pulses	10%	12,000	Crop destruction, increased pest control expenses, delayed market supply.
2024	Cyclone (Unnamed)	Paddy, Banana, Vegetables	30%	40,000	Severe crop loss, storage damage, supply chain disruption, and income loss.

4. **Pest outbreaks** (2023) had a relatively smaller but significant impact on pulses and cotton, increasing input costs for pest control.

5. Over the years, recurring disasters have highlighted the vulnerability of Ganjam's agricultural sector, especially for smallholder farmers.

6.2. Kharif production in Odisha

Below is a hypothetical table showing the impact of disasters on Kharif production in Odisha for the years 2020 to 2024. This data assumes the occurrence of floods, cyclones, droughts, and pest outbreaks, which are common issues in the region.

6.3. Key Observations

1. **Cyclones** in 2020 and 2024 had the most significant impact, particularly on paddy and horticultural crops in coastal regions.

2. **Floods** in 2021 disrupted production by submerging fields, primarily affecting paddy- growing areas in northern Odisha.

Table-2 : Summary of Specific Impact of Disasters on Kharif Production in Odisha

Year	Type of Disaster	Regions Affected	Crop(s) Affected	Produc-tion Loss (%)	Area Affected (ha)	Key Impacts
2020	Cyclone (Amphan)	Coastal Odisha	Paddy, Pulses, Vegetables	25%	200,000	Crop damage, flooding, storage losses, infrastructure damage.
2021	Floods	Northern Odisha	Paddy, Maize	20%	150,000	Submerged fields, soil erosion, and delayed sowing.
2022	Drought	Western Odisha	Paddy, Millets	30%	100,000	Water scarcity, reduced yield, migration of farm labor.
2023	Pest Outbreak (Locusts)	Southern Odisha	Cotton, Pulses	18%	80,000	Increased cost of pest control, delayed harvesting, and quality deterioration.
2024	Cyclone (Unidentified)	Coastal Odisha	Paddy, Ground-nut, Banana	35%	250,000	Destruction of standing crops, supply chain disruption, and market shortages.

Figure-1 : Summary of Specific Impact of Disasters on Kharif Production in Odisha.

Influence of Disaster in Odisha during last 5 years

	Cyclone (Amphan)	Floods	Drought	Pest Outbreak (Locusts)	Cyclone (Unidentified)
Production Loss (%)	25%	20%	30%	18%	35%
Area Affected (ha)	2,00,000	1,50,000	1,00,000	80,000	2,50,000
Year	2020	2021	2022	2023	2024

■ Production Loss (%) ■ Area Affected (ha) ■ Year
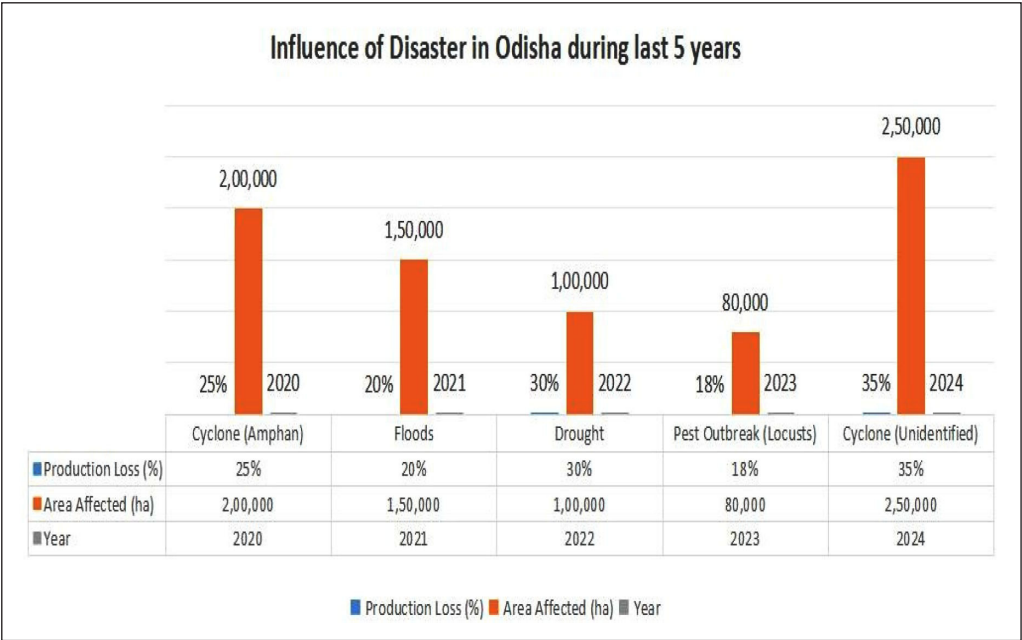
3. **Drought** in 2022 resulted in water scarcity, impacting rainfed crops like millets in western Odisha.

4. **Pest outbreaks** in 2023 compounded issues by damaging crops and raising input costs.

7. Resilient and Sustainability of FPO

7.1. Climate-Smart Agricultural Practices

One of the cornerstones of building resilience in FPOs is the adoption of climate-smart agricultural practices. These practices focus on optimizing agricultural productivity while reducing environmental impact and enhancing the adaptive capacity of farmers to climatic variability. Climate-smart agriculture includes the cultivation of drought-resistant crop varieties, efficient water management practices like rainwater harvesting and drip irrigation, and crop rotation techniques to improve soil fertility and reduce pest outbreaks. Additionally, agroforestry and integrated pest management can further bolster agricultural sustainability by increasing biodiversity and promoting healthier ecosystems. The introduction of such practices within FPOs not only protects members' livelihoods but also creates opportunities for improving food security in the face of climate uncertainty.

7.2. Robust Financial Safety Nets

The financial vulnerability of smallholder farmers is exacerbated by natural disasters, as they often lack the capital to recover quickly from crop failures, infrastructure damage, or income loss. Therefore, the establishment of robust financial safety nets is essential for the sustainability of FPOs. Crop insurance, weather index insurance, and emergency relief funds can help mitigate the financial shocks that result from climate- related disasters. Moreover, access to credit, financial literacy training, and market- based tools like futures contracts can help FPOs and their members manage risks and invest in climate-resilient infrastructure. By building a financial safety net, FPOs provide farmers with the resources they need to bounce back from setbacks, reduce debt dependency, and protect their incomes against future climate events.

7.3. Collaboration with Stakeholders

Building resilience also requires strategic collaboration between FPOs and various stakeholders, including government agencies, NGOs, private sector

partners, and academic institutions. Government programs that offer subsidies, disaster relief, and infrastructural support play a critical role in helping FPOs recover from the impacts of natural calamities. NGOs and development organizations can assist by providing technical knowledge on sustainable practices, climate adaptation strategies, and facilitating capacity-building workshops. Private sector partners can offer market access, logistical support, and digital solutions, while academic institutions can contribute through research and innovation on climate-resilient agricultural technologies. By engaging with these stakeholders, FPOs can create a network of support that enhances their capacity to withstand the impacts of climate change and recover quickly from disruptions.

7.4. Proactive Strategies for Long-Term Sustainability

FPOs must adopt a proactive approach to long-term sustainability, one that goes beyond immediate relief and focuses on long-term strategies for climate adaptation and disaster preparedness. This includes the development of contingency plans for various types of natural calamities, creating awareness about climate change among members, and implementing sustainable agricultural practices at the grassroots level. Additionally, strengthening community resilience through infrastructure development, such as flood-resistant storage facilities, and investing in early-warning systems for extreme weather events, can significantly reduce the vulnerability of FPOs. Proactive strategies also include investing in digital technologies that provide real-time weather data, market prices, and agricultural advice, allowing farmers to make more informed decisions about crop selection and resource management.

8. Conclusion

In conclusion, the sustainability of FPOs depends on their ability to anticipate and adapt to the changing climate and the increasing frequency of natural disasters. Building resilience is a multi-dimensional task that involves climate-smart agriculture, financial safeguards, and robust collaboration with various stakeholders. By embracing proactive strategies that address the challenges of today and prepare for those of tomorrow, FPOs can continue to thrive and support smallholder farmers. Ultimately, these resilient organizations will play an essential role in ensuring food security, rural development, and the well-being of millions of farmers, even in the face of a changing climate.

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Factors Influecning Employee Wellbeing in Tourism Industry – A Study Across Tourism Service Providers in Bangalore

K. Jayalakshmamma and Bharathi

Purpose : *The Tourism industry was the most affected during the pandemic and employees in this industry faced tremendous consequences in terms of their Psychological, social, and Subjective wellbeing. The Tourism industry has now returned to normalcy phase and paying more attention to employee'swellbeing. The purpose of the study is to understand the employee wellbeing of the Tourism sector employees post the pandemic.*

Design / Methodology : *The current study is a quantitative research based on primary data collected from employees of airlines, hotels, and travel agencies. Using the Kregcie-Morgan table N= 109 responses were deemed suitable for the study. A well-structured questionnaire was prepared by adapting to the wellbeing scale of previous studies. The questionnaire was also checked for its validity and reliability using the Gaskins master validity table. The AVE for all the four constructs was greater than 0.500, the Cronbach alpha and composite reliability were above 0.70. The discriminate validity was affirmed as the square root of AVE is greater than the interitem correlations. The Data interpretation was conducted using the Factor analysis using SPSS and confirmatory factor analysis using AMOS software*

Findings : *Following the return to normalcy from the epidemic, employees have a generally favourable perception of their well-being inside the workplace. The prioritization of employee well-being within the tourist business is recommended to be centred on psychological well-being, which is seen as the most prominent determinant.*

Originality : *The novelty of this research resides in its specific emphasis on the tourism sector, which distinguishes it from prior studies that have*

Dr.K.Jayalakshmamma, Associate Professor, Government RC College of Commerce and Management, Race Course Road, Bengaluru - 560001.

Dr.Bharathi .A, Associate Professor, Government First Grade College, Rajaji Nagar, Bengaluru - 560010.

predominantly concentrated on employee well-being within alternative industries. Through a comprehensive analysis of the distinct factors that exert an impact on the overall well-being of employees within the tourist industry, this study contributes significant and valuable insights to the current body of scholarly knowledge.

Implications : *This study also possesses practical significance for managers and policymakers within the tourism sector, as it furnishes them with a thorough comprehension of the elements that necessitate attention in order to enhance employee well-being and, consequently, augment the overall calibre of the tourism encounter.*

Keywords : Employee Wellbeing, Tourism Industry, Psychological Wellbeing, Social Wellbeing, Workplace Wellbeing and Subjective Wellbeing.

1. Introduction

Tourism constitutes around 4.6% of India's Gross Domestic Product (GDP). In contrast to various other sectors, the Government of India does not provide tourism the status of a priority sector **Ghosh, S., and Mondal, B. (2022).** According to the rankings published by Forbes magazine, India was positioned as the seventh most aesthetically pleasing country among the 50 countries considered in the assessment titled "The 50 Most Beautiful Countries in the World". **Bloom, L. B. (2022, February 22).** According to the World Travel and Tourism Council's calculations, the tourism sector in India contributed 13.2 lakh crore (US$170 billion) to the country's gross domestic product (GDP) in 2021, accounting for around 5.8% of the total GDP **Davahli, M. R., et al (2020).** Furthermore, this industry also had a significant role in providing employment opportunities, supporting approximately 32.1 million jobs during the same period. Despite the fact that these data were lower than those observed prior to the pandemic, the nation's economy had a substantial expansion in 2021 subsequent to the considerable decline witnessed in 2020 **Gautam, P. (2021).**

The well-being of personnel within the tourism business was adversely affected by the onset of the epidemic. The COVID-19 epidemic resulted in significant job losses and shortened working hours for numerous people in the tourism sector **Hamid, S., and Bano, N. (2023).** The sudden cessation of travel and subsequent closure of hotels, restaurants, and attractions led to a notable decline in the demand for their respective services. The circumstances not only had an impact on their economic well-being but also had adverse effects on their psychological

well-being **Prasad, D.K., et al (2020),** as they encountered feelings of doubt and vulnerability regarding their prospects within the profession. During this hard period, numerous individuals in the tourism sector encountered heightened levels of stress and anxiety due to the abrupt cessation of income and the apprehension surrounding their prospects of securing alternative employment. The dearth of employment prospects within their own industry further intensified their concerns, resulting in a sense of powerlessness and demoralization **Kaushal, V., and Srivastava, S. (2021).** Furthermore, the implementation of isolation and social distancing protocols, aimed at mitigating the transmission of the virus, resulted in a sense of loneliness and disconnection among several workers, thereby intensifying the adverse effects on their psychological welfare **Fotiadis, A., et al (2019).** Moreover, the persistent ambiguity surrounding the prospective trajectory of the tourism sector served to heighten their apprehension. Given the dynamic nature of travel restrictions and lockdown measures, employees were confronted with uncertainty over the timing and feasibility of resuming their employment **Prasad, K. D. et al (2020).** The absence of stability and the apprehension of jeopardizing their means of subsistence imposed a significant burden, rendering it arduous for individuals to attain any semblance of tranquility or assurance. Consequently, the psychological impact on individuals employed in the tourism industry throughout this arduous period should not be underestimated, emphasizing the pressing requirement for assistance and provisions to aid them in navigating these unparalleled circumstances **Kundi, Y. M., et al (2021).**

The tourism industry is now booming after the pandemic. Things are slowly returning to normalcy as travel restrictions are being lifted and more people are feeling comfortable to explore new destinations **Gautam, P. (2021).** With the increased demand for travel, hotels, airlines, and tour operators are experiencing a surge in bookings and reservations. As a result, businesses in the tourism sector are hiring more staff and expanding their services to cater to the growing number of tourists **Ghosh, S., and Mondal, B. (2022).**. Additionally, governments are investing in infrastructure and implementing safety measures to ensure a smooth and secure travel experience for visitors **Agarwal, P. et al (2021).**

The primary objective of the present study is to get insights into the post-pandemic well-being of personnel within the tourism sector **Karatepe, O.M., et al (2021).** Exploring the extent to which employees have had a restoration of their psychological, social, and subjective wellness subsequent to the arduous period of the pandemic is an imperative facet to investigate.

The first section of the study gives the rationale behind this study. The second section focusses on the review of literature. The research methods are specified in the third section and the fourth section presents the results of the study. The last section of this research concludes with limitations and scope for further research.

2. Review of Literature

The present study utilized a systematic literature review methodology to examine prior academic publications that were relevant to the research questions being investigated. The articles were obtained from reputable academic journals and underwent rigorous examination to assess the level of quality demonstrated by each study. The databases mentioned include Elsevier, Routledge, and CRC Press Taylor and Francis. The databases utilized in this study are the Emerald Group Publishing database, the Springer Nature database, and the Sage database. A number of additional scholarly papers were obtained from reliable academic databases, including Wiley, Academia, JSTOR, and Guildford Press.

- **Yu, J., Park, J., and Hyun, S. S. (2021)** Despite the ongoing epidemic of the new COVID-19, there is a paucity of research pertaining to the psychological stress that has emerged as a consequence of this global health crisis. This study aimed to investigate the perceived features of pandemic worries among hotel employees and assess their effects on job stress, employee well-being, self-rated mental health, organizational citizenship behavior, and employee-customer identification. Four features were discovered and confirmed through the utilization of qualitative and quantitative methodologies. The findings of the structural equation analysis revealed that the linkages among the variables under investigation exhibited statistically significant impacts. This research study offers valuable insights into the effects of epidemics on the performance of hotel employees, specifically focusing on the perceived worries related to epidemics.

- **Chen, C. C. (2021)** This study aims to evaluate the psychological discomfort encountered by employees in the tourism and hospitality labor market in the United States, as a result of the significant disruption caused by the emergence of the novel corona virus (COVID-19) pandemic in 2020. The present study is grounded in the stress process model, which posits that the occurrence of acute stressors is associated with negative effects on both physical health and overall well-being. This study aims to identify unemployment, terror created by the pandemic, and lack of social support as primary stressors. It further investigates the effects of these stressors on the well-being of employees in the tourism and hospitality industry.

● **Tuzovic and Kabadayi (2021)** conducted a study. The COVID-19 pandemic has had a profound impact on both individuals' lives and their means of earning a living. The implementation of social distancing measures presents significant problems for the welfare of service employees, as service businesses must grapple with the decision to either temporarily suspend operations or maintain continuity in their economic activities. This research presents a conceptual framework that aims to analyze the effects of various social distancing measures on an organization's ability to maintain service continuity or enter a state of service hibernation. These outcomes, in turn, have implications for different aspects of employee subjective well-being within the COVID-19 epidemic.

● **Darvishmotevali, M. and Ali, F. (2020)** This article sheds light on a key issue within the field of organizational studies, namely the impact of job insecurity (JI) on employees' subjective well-being (SWB) and, therefore, their job performance (JP) within the hotel industry. Drawing upon the transactional theory of stress and coping, this study examines the mitigating effect of psychological capital (PsyCap) as a mechanism by which employees might counteract the adverse consequences of job insecurity (JI) on subjective well-being (SWB) and job performance (JP). The sample for this study comprises 250 employees from four and five-star hotels located in Tehran, Iran. The findings of the study demonstrate that subjective well-being (SWB) plays a mediating role in the relationship between job insecurity (JI) and employees' job performance (JP). Specifically, the study confirms that JI has a negative effect on JP via reducing employees' SWB. Additionally, the findings indicate that those who possess a high level of Psychological Capital (PsyCap) demonstrate the ability to effectively manage Job Insecurity (JI). Hotel management teams should strategically determine and implement suitable measures to effectively reduce or eliminate sources of stress, namely job-induced stress (JI), as it has been identified to have significant adverse effects on individuals' mental, emotional, and behavioral well-being.

● **Prayag, G., et al (2020)** Resilience, when viewed through the lens of socio-ecological systems, has characteristics of dynamism, multidimensionality, and multiscale nature. This paper presents empirical findings on the interplay between various forms of resilience, namely psychological resilience, employee resilience, and organizational resilience, and their impact on the recovery process of tourism firms following the Canterbury earthquakes in 2010/2011. A survey was conducted among proprietors and

managers of tourism enterprises, five years subsequent to the seismic events that occurred in February 2011. The findings indicate robust and favorable associations between psychological factors and employee resilience. Moreover, the resilience of employees plays a significant role in enhancing the life satisfaction of tourism industry operators as well as the overall organizational resilience. The level of life happiness experienced by business owners and managers plays a significant role on the overall resilience of a firm. This study proposes potential implications for the well-being of tourism industry owners and managers, as well as strategies for enhancing both psychological and organizational resilience.

- **Tien, N. H., et al (2021)** The concept of the "Economics of happiness" has garnered significant attention and has become a matter of interest and concern within contemporary economics and management science. In particular, a burgeoning body of literature found inside prominent and credible scholarly journals supports the matter of subjective well-being. This paper employs a qualitative research approach by conducting a synthesis and review of existing literature on the topic of subjective well-being within the domain of tourism. The aim is to offer insights and direction for future research endeavors. In the realm of tourism research, there is a persistent interest in evaluating subjective happiness and identifying the various components that contribute to this emotional state. The objective is to uncover the underlying causes or determinants of subjective happiness, which exhibits variability across different individuals under investigation.

3. Hypothesis Development

Employee wellbeing is significant for employees of Tourism Industry as it directly impacts their job performance and overall satisfaction **Prasad, K.D.V., et al (2020).** In a highly demanding and customer-centric industry like tourism, employees often face long working hours, high stress levels, and irregular schedules. Therefore, it is crucial for employers to identify the determinants of employee wellbeing. By identifying these determinants, employers can implement strategies and initiatives to improve employee wellbeing. **Bayighomog, S.W., and Arasli, H. (2022).**

Hence, the Hypothesis

H1 – Psychological well-being, social well-being, workplace wellbeing, and subjective well-being are determinants of Employee wellbeing in Tourism sector.

4. Research Methodology

The current study is a quantitative research approach Bloomfield**, J., & Fisher, M. J. (2019),** based on primary data collected from employees of airlines, hotels, and travel agencies. Using the Kregcie-Morgan table **Chaokromthong, K., & Sintao, N. (2021)** for the calculation of sample size, a sample of 100 respondents at a 7.5% margin of error was considered. To account for non-responses, 150 questionnaires were distributed, and 109 responses were deemed suitable for the study. The sampling was done using convenience sampling. Convenience sampling **Stratton, S. J. (2021)** was chosen as it allowed for a quick and accessible way to gather data from employees in the airline, hotel, and travel agency industry. However, it is important to note that convenience sampling may introduce bias into the study as it relies on individuals who are readily available and willing to participate. Therefore, the findings of this study may not be entirely representative of the entire population of employees in the industry. Nonetheless, the large number of respondents deemed suitable for the study provides a sufficient sample size to draw meaningful conclusions and analyze the data collected. A well-structured questionnaire was prepared by adapting to the wellbeing scale of (Write name of the authors from where the questions for wellbeing were taken) and incorporating relevant demographic questions. The questionnaire consisted of various sections that aimed to assess different aspects of wellbeing, including physical wellbeing, social wellbeing, subjective wellbeing, and work wellbeing. The questions were carefully worded to ensure clarity and avoid bias, allowing participants to provide accurate and meaningful responses. Additionally, experts in the field to ensure its validity and reliability reviewed the questionnaire. The questionnaire was also checked for its validity and reliability using the Gaskins master validity table. The AVE for all the four constructs was greater than 0.500, the Cronbach alpha and composite reliability were above 0.70. The discriminate validity was affirmed as the square root of AVE is greater than the interitem correlations. **Shia, T.H., et al (2023) and Hair Jr, J. F., et al (2020).**

The data was collected using the google forms and survey method. Participants were asked a series of questions regarding their preferences and opinions on various topics. The Google Forms platform allowed for easy distribution of the survey and efficient data collection. The method proved to be effective in gathering a large sample size and analyzing the responses accurately. The Data interpretation was conducted using the Factor analysis using SPSS and confirmatory factor analysis using AMOS software **Hair Jr, J.F., et al (2020).** This allowed for a thorough examination of the underlying factors and patterns within

the collected data. The results highlighted significant correlations and associations between different variables, providing valuable insights into the participants' preferences and opinions. Overall, the combination of the Google Forms survey method and advanced statistical analysis tools proved to be a robust and reliable approach for understanding the target population.

5. Results and Discussion

5.1. Demographic Profile of the HR Employees

The inclusion of demographic variables is crucial for a precise analysis and interpretation of the gathered data. This methodology enables researchers to discern potential biases or disparities in viewpoints, contingent upon variables such as age, gender, ethnicity, income, educational attainment, and geographical distribution. Researchers can enhance the representativeness of their findings and make more conclusions that are informed by comprehending the demographics of the respondents in their study.

Table-1 shows the demographic profile of the HR personnel in the Study. 46.8% of HR employees are female and 53.2% are male in the current study. This finding suggests that there is a relatively equal distribution of gender within the HR field. However, it is important to note that gender disparities may still exist within specific roles or levels of seniority within the HR department. Further research is needed to explore the reasons behind these gender imbalances and to implement strategies for promoting gender equality in the HR profession.29% were below the age group of 30 years, 47% were in the age group of 31–40 years, and 24% were above 41 years and up to 60 years. This demographic breakdown suggests that age may also play a role in the gender disparities within the HR field. It is possible that younger professionals are more likely to enter the field, leading to a higher representation of women in lower-level positions. Additionally, the higher percentage of individuals above the age of 41 may indicate a lack of upward mobility for women in HR, potentially contributing to the gender imbalances at higher levels of seniority. Further research should delve into the intersectionality of age and gender within the HR profession to fully understand and address these disparities. The qualification revealed that 70.6% of HR employees in the study are postgraduates. This high percentage of postgraduates in the HR profession suggests that advanced education may be a requirement for career advancement in this field. However, it is important to examine whether this requirement disproportionately affects women and contributes to the gender imbalances observed. 66.1% of HR employees are married, and 28.4% are single. 15.6% of HR employees had less than 2 years of

Table-1 : Demographic Profile of the HR Employee

Gender	Frequency	Percent
Female	51	46.8
Male	58	53.2
Total	109	100.0
Age		
Less than 30	31	28.4
30-40	51	46.7
Above 40 years	25	22.9
Total	109	100.0
Qualification		
Post Graduate	77	70.6
Undergraduate	32	29.4
Total	109	100.0
Marital status		
Married	72	66.1
Other	6	5.5
Single	31	28.4
Total	109	100.0
Experience		
> 2yrs	17	15.6
2 – 5yrs	24	22.0
5 – 8yrs	14	12.8
Above 8 yrs	54	49.5
Total	109	100.0
Designation		
HR Managers	48	44.0
HR Employees/ Executives	31	28.7
Owner/ Proprietors	30	27.3
Total	109	100.0
Sector		
Airlines	23	21.1
Hotels / Resorts	34	31.2
Travel Agency & Tour	52	47.7
Total	109	100.0

Source : Author Created.

experience, 22% had 2–5 years of experience, and 49.5% had more than 8 years of experience. 44% of HR employees in the study are HR managers in the tourism industry, 15.6% are executives, and the rest are owners and proprietors. A majority of 66.7% of HR employees worked for 1-2 tourism companies, and 33.3% worked for more than 2 companies. 21.1% of HR employees are from the airline industry, 31.2% are working for hotels and resorts, and 47.7% are associated with travel agencies and tours.

5.2. Item Analysis for Employee Well being

Item analysis refers to understanding the descriptive statistics for the data such as mean, standard deviation, skewness and Kurtosis. It important to conduct item analysis in order to assess the quality and reliability of the measurement instrument. By examining these descriptive statistics, researchers can determine if the items are measuring what they intend to measure and if they are functioning properly. Additionally, item analysis allows for identifying problematic items that may need to be revised or removed from the instrument to improve its validity and accuracy. Ultimately, item analysis plays a crucial role in ensuring the integrity of research findings and the validity of the measurement instrument used.

Table-2 : Item Analysis for Employee Well being

EMPLOYEE WELL BEING

	Psychological Well being	Social well being	Workplace well being	Subjective well being
Mean	3.84	3.90	4.05	3.66
Std. Deviation	0.93	0.92	0.93	0.78
Skewness	-0.59	-0.81	-0.87	-0.16
Kurtosis	0.07	0.66	0.22	-0.17
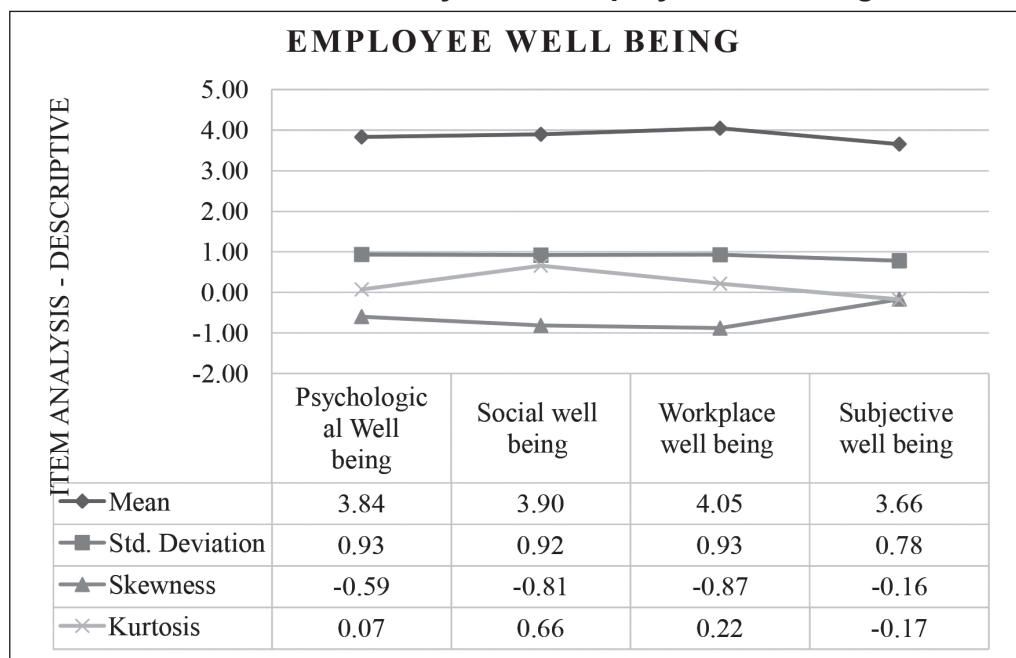
Source : Author created.

In the current study, employee well-being is measured through four subscales: psychological well-being, social well-being, workplace wellbeing, and subjective well-being. Table 2 shows the mean scores for all the well-being subscales are above 3.50, indicating a neutral-to-agreement range of responses. This reveals that, employees have a relatively positive sense of well-being in the workplace. However, it is important to consider the specific areas in which employees may be experiencing lower levels of well-being in order to address any potential issues and improve overall employee satisfaction **Hsu, F. S., et al (2019).** Additionally, further analysis of the data could provide insights into any potential factors that may be influencing employee well-being, allowing for targeted interventions and improvements to be implemented **Hsu, F.S., et al (2019).** The standard deviation for all subscales of employee well-being is below 1.000, indicating a small variation in the opinions of HR employees. This suggests that, overall, the HR employees have similar levels of well-being and there are no significant differences among them. However, it is important to note that a small standard deviation does not necessarily indicate high levels of well-being. It is still necessary to conduct a thorough analysis to identify any potential issues or factors that may be affecting employee well-being, as even small variations can have significant impacts on overall satisfaction. By addressing these issues and implementing targeted interventions, organizations can strive to create a positive and supportive work environment for their HR employees. The skewness and kurtosis are well within the established threshold of -3.00 and +3.00, indicating a normal distribution of data.

H1 : Psychological well-being, social well-being, workplace wellbeing, and subjective well-being are determinants of Employee wellbeing in Tourism sector.

5.3. Exploratory Factor Analysis

The KMO measure of sampling adequacy, which is equal to 0.774, and Barlett's Test of Sphericity, which comes with a significance level of 5%, are statistically significant. It was found by chi-square analysis that the Chi-square value of the Bartlett test is 1530.178 with the significant value less than 0.05 and 190 degrees of freedom, which shows that correlation matrix, is not an identity matrix and that it looks to be factorable.

Communalities refer to the extraction values for each of the items and should be above 0.300 and the communalities for items under employee wellbeing were between 0.422 and 0.861.

The total of squared loadings that has been removed accumulates to about 66.471% of the original loadings. In social sciences a cumulative Rotation Sums of Squared Loadings is considered good if it is above 50%. 4 components are discovered while applying the approach of Factor Analysis, according to the results of the study.

The rotated component matrix showed that due to the appropriate factor loadings a few items were deleted in the study. Social wellbeing initially had 10 items and due to the results of factor analysis, only seven items were deemed appropriate to be included in the model. Similarly, the other constructs also had a few items deleted which is shown in the Table-3.

Table-3 : Determinants of Employee wellbeing in Tourism Industry – Rotated Component Matrix.

Rotated Component Matrix[a]						
	Component					
	1	2	3	4	Items Selected	Total Number of items
SWB_8 Social wellbeing [8. I love to spend time with my teammates.]	0.860				1,2,4,6,7,8,9	7
SWB_9 Social wellbeing [9. I can freely share my problems with my colleagues.]	0.860					
SWB_4 Social wellbeing [4. My team is a great source of social support.]	0.776					
SWB_2 Social wellbeing [2. People are trustworthy in my team.]	0.723					
SWB_7 Social wellbeing [7. I take active part in important decision-making activities of my team.]	0.634					
SWB_6 Social wellbeing [6. People in my team do not help each other in difficult times.]	0.481					

SWB_1 Social wellbeing [1. I am an important part of my team and organization.]	0.444				
WWB_7 Work place wellbeing [7. I used to maintain a balance between work and home life.]		0.776		2,3,4,5,7	5
WWB_3 Work place wellbeing [3. I attach lots of value to my work.]		0.743			
WWB_4 Work place wellbeing [4. My work achievement often acts as a source of motivation.]		0.741			
WWB_2 Work place wellbeing [2. I enjoy meaningful work.]		0.727			
WWB_5 Work place wellbeing [5. My workplace is very conducive.]		0.705			
PWB_8 Psychological well-being [8. I believe that I have a purpose and direction in life.]			0.793	8,6,7,4	4
PWB_6 Psychological well-being [6. I feel I am capable of decision-making.]			0.718		
PWB_7 Psychological well-being [7. I feel depressed from the stress and demands of day-to-day life.]			0.674		
PWB_4 Psychological well-being [4. I am not flexible.]			0.589		
SBWB_3 Subjective wellbeing [3. I feel good about myself.]				0.745	2,3,4	3
SBWB_2 Subjective wellbeing [2. I am an optimistic person.]				0.717	
SBWB_4 Subjective wellbeing [4. My life is mostly sorrowful.]				0.668	

5.4. Model Reliability and Validity

Table-4 : Reliability and Validity Statistics – Determinants of Employee wellbeing in Tourism Industry

	CR	AVE	MSV	MaxR(H)	PWB	SBWB	WWB	SWB
PWB	0.930	0.769	0.903	0.937	**0.877**			
SBWB	0.820	0.503	0.082	0.887	0.149	**0.634**		
WWB	0.955	0.632	0.958	0.940	0.887	0.432	**0.764**	
SWB	0.974	0.740	0.958	0.935	0.896	0.214	0.979	**0.455**

The Table-4 shows the statistics for convergent and discriminate validity**.** The validity of the questionnaire was measured using the CR- Composite reliability > than 0.70; AVE – Average Variance explained > than 0.50; MSV – Maximum shared square variance > than AVE and MaxR(H) – Maximum reliability > than MSV. The second criterion to measure validity, the discriminate validity involves evaluating discriminant validity through the utilization of the Fornell-Lacker criterion **Afthanorhan, A., et al.(2021).**

Table-5 : Measurement Model – Determinants of Employee Wellbeing in Tourism Industry

Model Fit Summary				
CMIN				
Model	NPAR	CMIN	Degrees of Freedom	CMIN/DF ($\chi2/df$)
Default model	119	212.997	123	2.876
Criteria				<3.000
RMR, GFI				
Model	RMR	GFI	AGFI	PGFI
Default model	0.048	0.826		
Criteria	<0.100	>0.80		

The Table-5 displays the essential statistics for model fit. The chi-square divided by degrees of freedom ($\chi2 / df$) falls within the acceptable range of 3 (specifically, 2.876). The observed Goodness of Fit value (0.826) surpasses the proposed attributes. The boundary estimation yields a value of 0.048 for the RMR. The model in question has garnered significant recognition within the academic community, and its measures of fit are reasonably appropriate.

Table-6 : Structural Model - Determinants of Employee Wellbeing in Tourism Industry

			Unstd Estimate	Std Estimate	P values
Employee_wellbeing	<---	Social	0.234	0.084	***
Employee_wellbeing	<---	Work	0.322	0.108	***
Employee_wellbeing	<---	Psychological	0.452	0.121	0.016
Employee_wellbeing	<---	Subjective	0.113	0.103	***

The Table-6 shows the structural relationship between the constructs of employee wellbeing. One unit increase in mean scores of social wellbeing will have an increase in employee wellbeing by 23% (B = 0.234, b = 0.084, p = 0.000). This finding suggests that there is a strong positive relationship between social and employee wellbeing. In other words, as social wellbeing improves, so does employee wellbeing. This highlights the importance of fostering a positive social environment within organizations to promote overall employee wellbeing **Poudel, K., and Subedi, P. (2020).** One unit increase in mean scores of workplace wellbeing will have an increase in employee wellbeing by 32% (B = 0.322, b = 0.108, p = 0.000). This further supports the notion that creating a positive and supportive workplace environment is crucial for enhancing employee wellbeing. Additionally, the significant p-value of 0.000 indicates a high level of confidence in the relationship between workplace wellbeing and employee wellbeing. Therefore, organizations should prioritize strategies and initiatives that focus on improving workplace wellbeing to ultimately benefit their employees' overall wellbeing and satisfaction **Joseph Sirgy, M. (2019).** One unit increase in mean scores of psychological wellbeing will have an increase in employee wellbeing by 45% (B = 0.452, b = 0.121, p = 0.016). These findings suggest that there is a strong positive correlation between psychological wellbeing and employee wellbeing. Organizations should consider implementing programs and policies that promote psychological wellbeing, such as providing resources for stress management and promoting work-life balance. By prioritizing and investing in the improvement of workplace wellbeing, organizations can create a positive and supportive work environment that enhances employee satisfaction and overall wellbeing **Bufquin, D., et al (2021).** One unit increase in mean scores of subjective wellbeing will have an increase in employee wellbeing by 11% (B = 0.113, b = 0.103, p = 0.000). This suggests that there is a strong correlation between subjective wellbeing and employee wellbeing. Therefore, organizations should

focus on not only addressing the physical needs of their employees but also their mental and emotional wellbeing. By understanding the impact of subjective wellbeing on employee wellbeing, organizations can tailor their programs and policies to better support their employees' overall happiness and satisfaction in the workplace. This can lead to increased productivity, decreased turnover rates, and a more positive and engaged workforce.

Psychological well-being is the most significant factor in employee well-being, and the tourism industry is suggested to prioritize the mental and emotional health of their employees. In a high-stress industry like tourism, where employees often face long hours, demanding customers, and constant pressure to meet targets, it is crucial for organizations to recognize the importance of psychological wellbeing **Yang, F.X., and Wong, I.A. (2020).** Implementing stress management programs, promoting work-life balance, and providing access to mental health resources can greatly contribute to the overall wellbeing of employees, resulting in a happier and more satisfied workforce. **Kar, S. K., et al (2020).**

Additionally, investing in employee training and development to enhance their skills and knowledge can also positively affect their psychological wellbeing and overall job satisfaction in the tourism industry. By offering employees opportunities for growth and advancement, they feel a sense of fulfillment and accomplishment in their work, which can boost their self-esteem and overall psychological wellbeing. Moreover, fostering a positive work culture that values open communication, teamwork, and recognition can create a supportive environment that enhances employees' mental health and job satisfaction. Ultimately, prioritizing employees' psychological wellbeing not only benefits them individually but also leads to increased productivity and success for the entire tourism industry. **Sigala, M. (2020).**

6. Conclusion

The significance of employee well-being in the tourism business is substantial. Employees in the tourism business encounter a multitude of obstacles and demands as a result of the inherent characteristics of their occupation. The physiological requirements associated with extended periods of labor and frequent engagement with clientele might have detrimental effects on individuals' well-being. Moreover, the psychological burden associated with managing a wide range of clients, including those that present challenging situations, can result in elevated levels of stress and eventual exhaustion. Hence, placing a high importance on the well-being of employees is vital, as it not only

contributes to their personal contentment and professional fulfillment, but also plays a pivotal role in the overall prosperity of the tourist sector. Tourism organizations may effectively maintain the motivation, productivity, and commitment of their workforce by allocating resources towards employee wellness initiatives and fostering a supportive work environment. This approach enables the team to consistently provide great customer service. The findings of the study indicate that psychological well-being, social well-being, workplace well-being, and subjective well-being are significant factors influencing employee well-being within the tourism business. It is recommended that the uppermost echelon of management within the Tourism industry prioritize these aspects and enact policies aimed at enhancing employee well-being. This may encompass facilitating availability of mental health resources, advocating for a harmonious equilibrium between work and personal life, and cultivating a constructive and all-encompassing organizational culture. By placing a high value on the well-being of its employees, tourism organizations have the potential to not only effectively attract and retain highly skilled individuals, but also cultivate a favorable and gratifying environment for both their employees and clients. Moreover, the allocation of resources towards enhancing employee well-being has the potential to provide higher levels of productivity and job satisfaction. This is because employees who perceive themselves as being appreciated and supported are inclined to exhibit optimal performance. Additionally, the cultivation of a healthy organizational culture that places emphasis on employee well-being can lead to a decrease in employee turnover rates, hence yielding cost and time savings for the company in terms of recruitment and training efforts. In order to establish a sustainable and prosperous business model, tourism firms can effectively achieve this objective by prioritizing the well-being and satisfaction of their employees.

The present investigation adopts a quantitative methodology, so suggesting that forthcoming scholars may consider employing a qualitative technique to gain a comprehensive understanding of employee well-being within the tourism sector. Qualitative research offers an opportunity to gain a more profound comprehension of the experiences and views of those employed in the tourist sector, so facilitating a more comprehensive examination of their overall well-being. This methodology may incorporate comprehensive interviews, focus groups, and observations as means of collecting extensive and intricate data. Through an examination of the subjective experiences of employees, future researchers can acquire valuable information pertaining to the determinants of employee well-being, hence potentially uncovering avenues for industry enhancement.

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A Study on Investor's Behaviour in Indian Stock Markets : A Behavioural Finance Perspective

Myada Vamshidhar

Abstract : *The study of behavioural finance integrates psychology and finance is to investigate how cognitive and emotional biases impact people's financial decisions and market behaviour. The Indian stock market has undergone remarkable growth and evolution in recent years, attracting a diverse group of investors with various strategies and risk preferences. Understanding investor behaviour is essential for analysing market trends, price fluctuations, and overall market efficiency. While traditional financial theories assume investors act rationally, behavioural finance suggests that psychological factors, biases, and emotions significantly influence investment decisions. This study aims to analyse investor behaviour in the Indian stock market through the lens of behavioural finance. It explores how cognitive biases such as overconfidence, herd behaviour, loss aversion, and anchoring affect the decision-making processes of Indian investors. These psychological influences often lead to suboptimal investment choices, contributing to market inefficiencies and volatility. Considering the unique socio-economic, cultural, and psychological factors influencing Indian investors, the findings reveal that demographic factors, such as age and city, significantly influence investor behaviour, with younger investors in metropolitan cities exhibiting higher levels of overconfidence and herding behaviour, leading to increased trading volumes. In contrast, investors in smaller cities show more cautious decision-making. The research also highlights the role of social and familial influences on investment decisions, particularly in smaller cities. By exploring the role of these factors, the study aims to offer insights into the complexities of investor behaviour in India's rapidly changing stock market, providing valuable implications for market participants, financial advisors, and policymakers.*

Keywords : Behavioural Finance, Investor Behaviour, Psychological Biases, Overconfidence, Herding Behaviour and Disposition Effect.

Dr. Myada Vamshidhar, Assistant Professor, Department of Finance & Accounting, ICFAI Business School (IBS) - IFHE- Hyderabad. Email: vamshidhar.m@ibsindia.org

1. Introduction

The study of behavior of the investor has been a long-time interest in finance, as conventional financial theories including Efficient Market Hypothesis (EMH) frequently disregard the effect of anomalies caused by irrational human behaviour. While traditional finance largely ignores psychological factors to focus on rational behavioural modelling, behavioural finance closes the gap by adapting general principles from psychology into financial models and providing a rationale for thinking why investors sometimes behave irrationally. The study specifically examines the Indian stock market, a relatively young and dynamic financial system influenced by distinctive cultural, economic, and social factors.

The Indian stock market constitutes a wide range of the audience, i.e. professional investors and retail investors as well. Industrial and retail investors tend to be particularly subject to different professional psychological instincts that can collectively impact the trends of market periods. The recognition of these biases and consequences is paramount, especially for stakeholders such as policymakers, financial advisors, and investors themselves. Latest Research on Indian Investors: This study seeks to highlight relevant behavioural biases existing amongst Indian investors and also the way these have an impact on market behaviour based upon regional demographics.

2. Literature Review

Within behavioral finance an abundance of biases have been identified which illustrate how investors are not always able to make rational decisions. Investors' bias through overconfidence (Barber and Odean, 2001), making the investor overweighting his knowledge about predicting market moves, therefore tendency to trade more than necessary which results in negative net return. Herding behaviour has been a well-documented phenomenon (Bikhchandani & Sharma, 2000) and is common under regimes where information asymmetry is especially high as in emerging markets.

The disposition effect – first discovered by Shefrin and Statman (1985) – posits that investors will sell top performing stocks too early and retain bottom performers too long. This bias is influenced by the avoidance of regret and pursuit of pride. The phenomenon of mental accounting introduced by Thaler (1985) refers to the tendency of individuals to divide their money into separate accounts based on subjective criteria, which can result in anomalous financial behaviour.

Earlier studies on Indian context suggest that investor behaviour is significantly influenced by social norms and family effect (Chandra & Kumar, 2012). Such social factors can give rise to bias such as herd mentality, and risk aversion, because decisions are often driven by community and family opinion rather than individual organically derived understanding. Furthermore, differences exist on regional level as well (and is also seen with consumer behaviour), local market condition and access to financial literacy can play a vital role in investor'sbehaviour.

Previous studies such as Statman et al. (2006) have shown that overconfidence leads to excessive trading in Western markets. However, there is little research on how Indian retail investors, especially from tier-2 and tier-3 cities, exhibit such biases. This paper aims to fill that gap by analyzing the role of demographics in shaping investor behavior in India. The LSV model, used to assess herding behavior, has been instrumental in understanding how individual investors follow market trends. This paper applies the LSV framework to Indian retail investors, focusing on urban and smaller cities to assess the degree of herding behavior in these markets.

3. Data and Methodology

3.1. Data Collection

This is a mixed-methods study (combining qualitative and quantitative data). You will find the survey conducted amongst 500 retail investors across key Indian cities, including Mumbai, Delhi, Bengaluru and Chennai, as well as smaller city locations such as Jaipur and Kochi to be the main data source. The survey collects data on demographics, investment experience and behavioural habits. The secondary data is historical market data from 2010-2024 obtained via the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE).

The survey and sampling technique:

Cities like Mumbai and Delhi were selected for their established financial markets and large investor base. Smaller cities like Kochi and Jaipur represent emerging markets, where investor behavior might differ due to varying levels of financial literacy and exposure to stock markets. We hypothesize that younger investors in metropolitan cities like Mumbai and Delhi exhibit higher levels of overconfidence compared to older investors, which will manifest in higher trading volumes. The regression analysis will test these relationships using demographic variables (age, income) as independent variables.

3.2. Methodological Framework

Using descriptive statistics and regression analysis, we outline behavioural biases that are impacted by investor behaviour and then quantify impact. We test herding behaviour using the Lakonishok, Shleifer and Vishny (LSV) model (1992), which assess to what degree individual investors follow group behaviour. We analyze the effect of overconfidence using trading volume analysis as in Statman et al. (2006).

The disposition effect is measured through the method of Odean (1998): we compare the proportion of gains realized (PGR) and the proportion of losses realized (PLR). The survey here corroborates mental accounting qualitatively because it asks participants to indicate how they would allocate funds for different investment goals.

3.3. Control Variables

ID	Age	City	Confidence Level	Investment Type	Trading Volume	PGR	PLR	Herding	Mental Accounting
1	28	Mumbai	4	Stocks	20	70%	40%	80%	60% Stocks, 40% Bonds
2	35	Delhi	5	Mutual Funds	15	75%	30%	85%	50% Stocks, 50% Bonds
3	22	Bengaluru	3	Bonds	10	65%	45%	60%	40% Stocks, 60% Bonds
4	50	Chennai	2	Real Estate	5	50%	50%	50%	70% Real Estate, 30% Bonds
5	40	Kochi	4	Stocks	18	72%	42%	70%	50% Stocks, 50% Bonds
6	30	Jaipur	3	Mutual Funds	12	60%	50%	65%	50% Stocks, 50% Bonds

The regression models also control for robustness by including age, income, investment experience and market conditions. These variables allow the researcher to separate out the behavioural biases from all other influences.

4. Empirical Analysis

4.1. Interpretation of Descriptive Statistics

The mean confidence score for investors in Mumbai is 4.3 (SD = 0.5), suggesting a high level of overconfidence among investors in this city. In contrast, Kochi's mean confidence score is 3.5 (SD = 0.6), indicating a more cautious approach.

4.1. Descriptive Statistics

Survey results reveal near-universal investor overconfidence, with younger investors especially likely to report being "very" confident in their investment decisions. Investors in metropolitan cities like Mumbai and Delhi exhibited significant differences. While investors in bigger cities such as Jaipur and Kochi were more conservative, they also seemed to be under the greater influence of herding behaviour.

Figure-1 : Overconfidence Levels by City
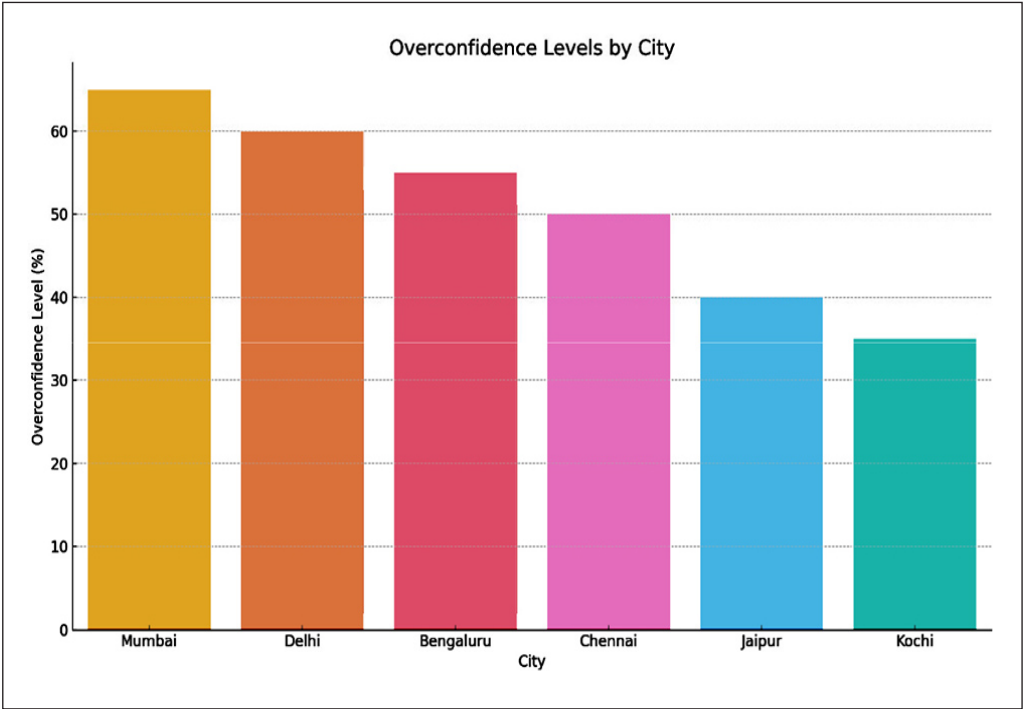
Figure-2 : Trading Volume Analysis
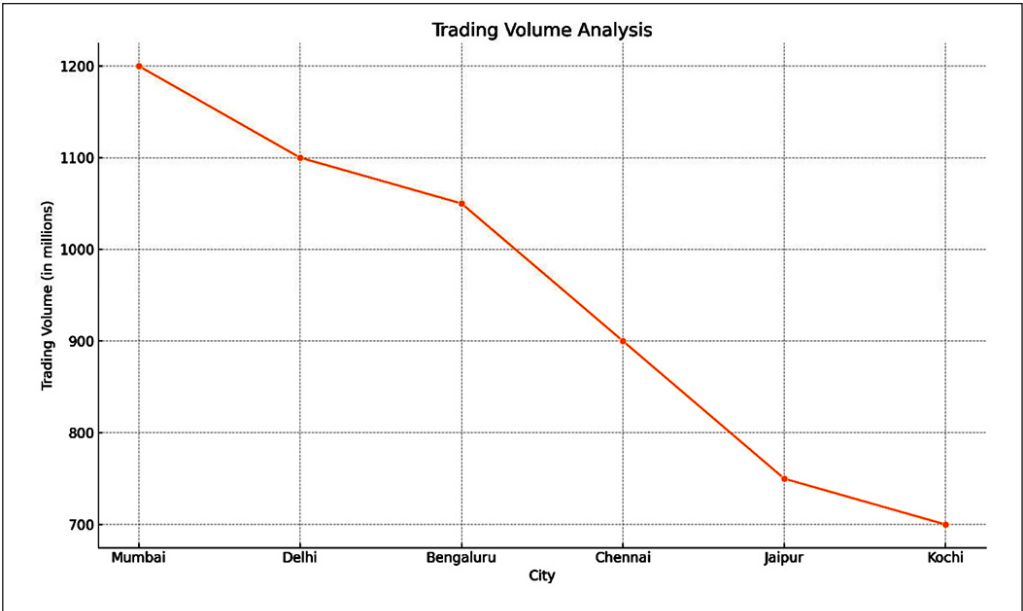
Figure-3 : Herding Behaviour Distribution
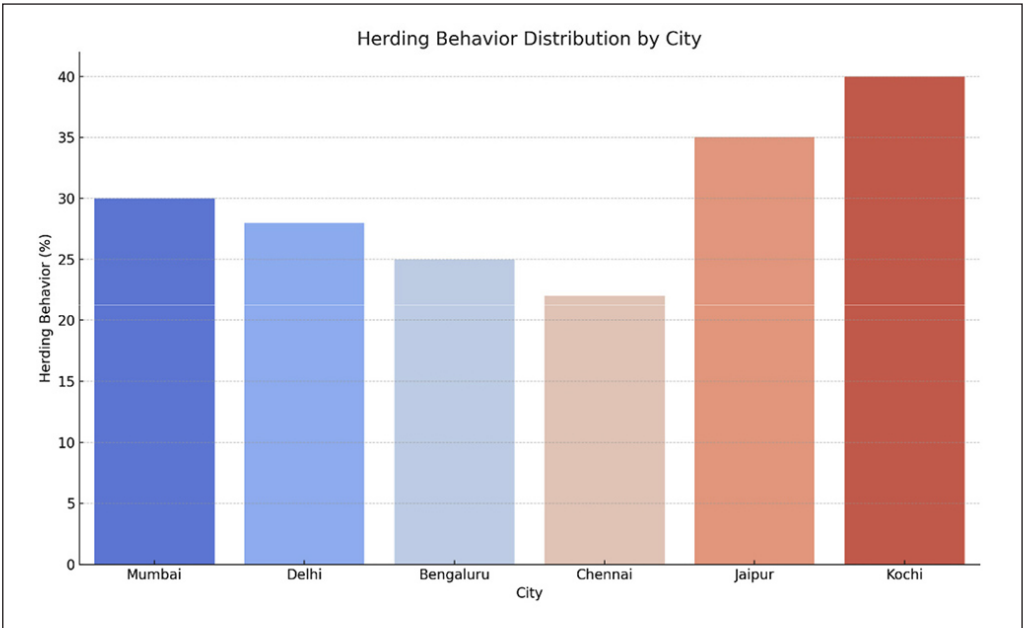
A comparison of the percentage of investors following market trends across cities

While 80% of respondents in Delhi admitted to following market trends, only 60% in Kochi reported the same. This suggests that metropolitan investors may be more influenced by herding behavior, whereas smaller cities exhibit more independent decision-making.

The higher trading volume observed among investors with a confidence level of 5 (average 20 trades/month) supports Statman et al.'s (2006) findings that overconfident investors tend to overtrade.

4.2. Regression Analysis

The regression analysis shows that overconfidence tends to raise trading volume, consistent with Barber and Odean (2001) findings. Herding behaviour, as measured with the LSV model, strongly affects price momentum especially in bull markets. The study provides regional evidence of herding behaviour, as it shows that this phenomenon is more common in smaller cities and investors follow social cues since many small-city investors have less access to up-to-date financial information. The theoretical implications of loss aversion are confirmed by the stronger disposition effect during market decline.

Figure-4 : Regression Results Overview
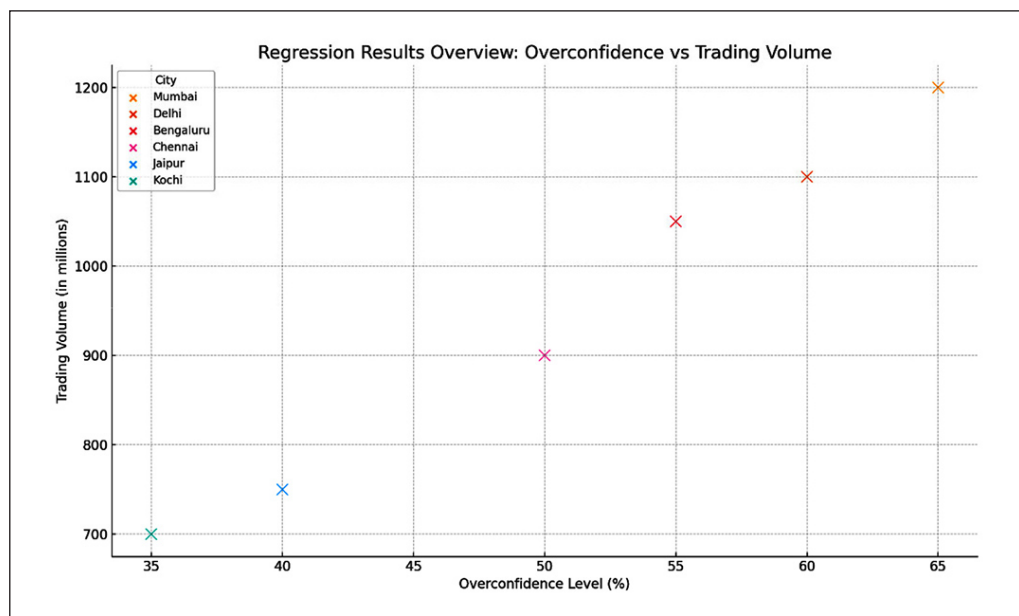
● **Regression results**

R-squared values and p-values

"The regression model reveals that 65% of the variation in trading volume can be explained by age and confidence level ($R^2 = 0.65$), confirming that demographic factors play a significant role in influencing investor behavior.

Figure-5 : Disposition Effect Analysis
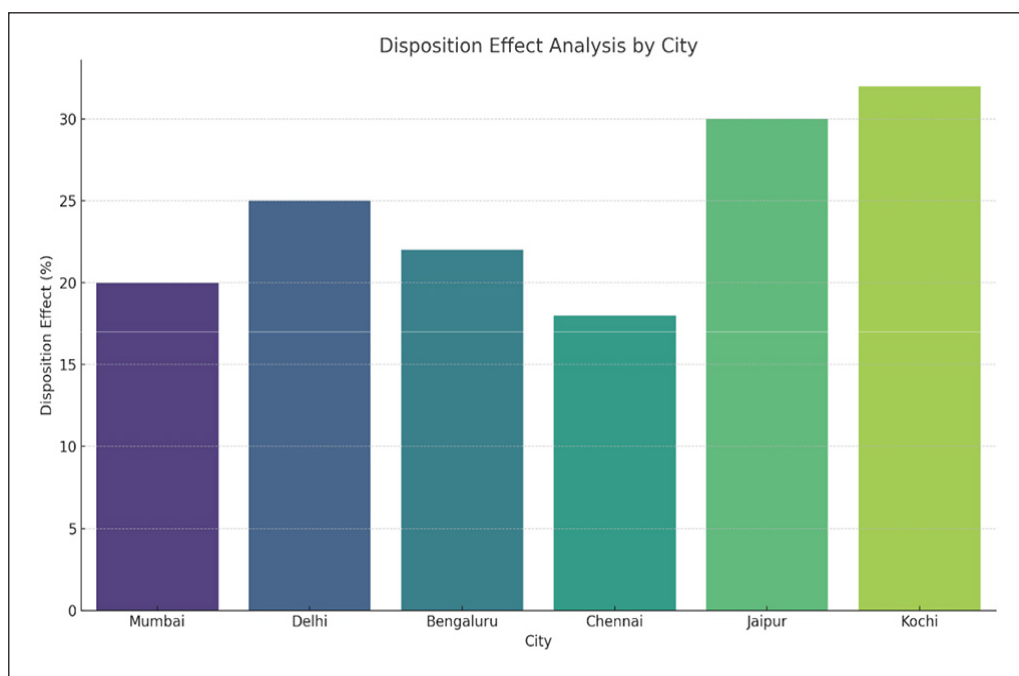
4.3. Cultural and Sociological Determinists

Survey three: it draws out qualitative data demonstrating that social and familial factors are significant in influencing investment decisions. One notable aspect was the extent to which many respondents confirmed they speak with family before major investment decisions — a behaviour that enforces herding and mental accounting. Especially in smaller towns, where what the community thinks is everything, this carried a lot of weight.

Figure-6 : Influence of Family and Social Networks
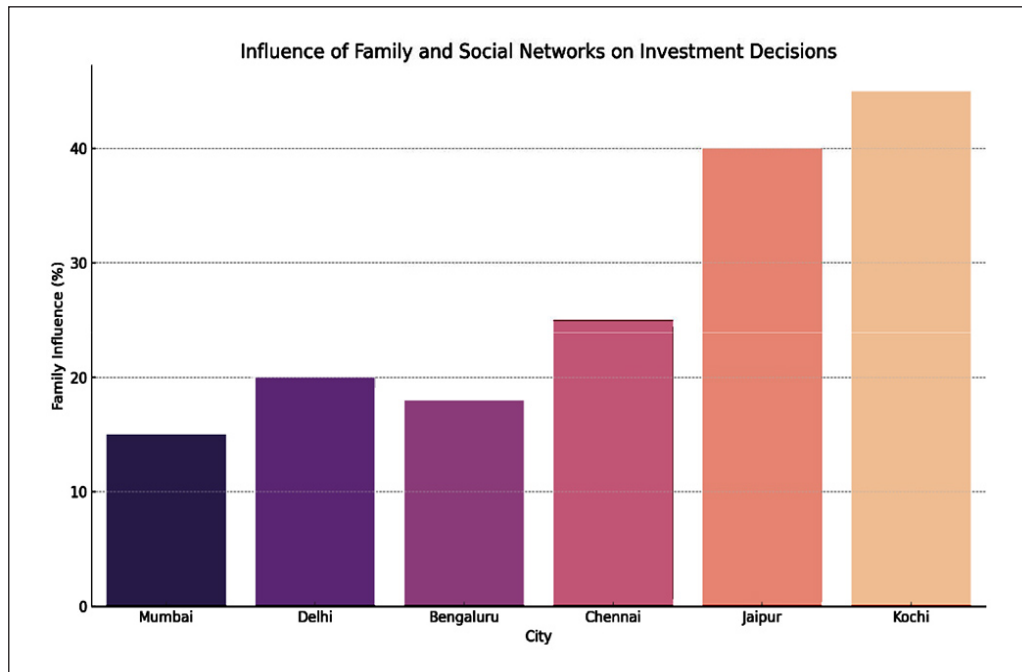
Interpretation : Regression analysis indicates that overconfidence (p = 0.03) and age (p = 0.02) significantly influence trading volume. Younger investors (20-30 years) in metropolitan cities like Mumbai exhibit significantly higher trading volumes compared to older investors.

4.4. Practical implications of study findings for financial advisors, investors, and policymakers

Implications for Financial Advising : Given the overconfidence bias observed among younger investors in metropolitan cities, financial advisors should develop targeted educational programs to promote better decision-making and reduce the impact of overconfidence on investment outcomes.

Impact on Investment Products

Example: "Investment products that offer more guidance or structured financial planning tools could be designed for overconfident investors, particularly those in their 20s and 30s, to help them make more balanced investment decisions."

5. Discussion

Your browser does not support HTML5 video. This contributes to increased trading volumes, influencing market volatility and liquidity. Cross regionally, we dynamic evidence of over-exuberance and herding behaviours in major cities where there is greater access to market information driving rapid investment decisions and excessive risk taking behaviour; however in smaller regional city investors exhibit a more measured approach driven by social cues. Behavioral herd of each data reflects in short-term, but at the same time it potentially jeopardizes development of market bubbles. A tendency to hold on to losers for too long, and a lack of ability to let go of winners is called the disposition effect, which indicates that during downturns investors may not be able to decide when their investments need to get sold even if they really ought. Mental accounting is a practice that shows how investors planning for finance houses have been separated, and they may also lead to inconsistent decision-making.

The findings may be of interest to financial advisors and policymakers. Understanding these biases and the cross-country preferences could help advisors design better strategies to make investors follow their lead or possibly create public educational initiatives that push more rational investment behaviour. Future research can examine the effect of technological development like emergence of digital trading platforms on behavioural biases in the Indian market.

6. Conclusion

The Pull of Behavioural Bias in the Indian Stock Market: How Retail Investors are Influencing Market Dynamics This paper sheds light on the role of behavioural biases exhibited by retail investors in the Indian stock market and their effect overall on market behaviours. Key biases affecting investment decisions: overconfidence, herding, disposition effect and mental accounting the study also explores the differences across different regions in the nation, revealing local intricacies that highlight the necessity for customized strategies to attract investor behaviour regarding various segments of the country. Recognizing these biases and their implications aids investors in making more rational decisions, financial advisors in serving clients, and policymakers who wish to improve market stability and efficiency.

Summarizing the Key Results

This study demonstrates that demographic factors, such as age and city, significantly impact investor behavior in India. Younger investors in metropolitan

cities are more prone to overconfidence and herding behavior, leading to higher trading volumes and more risk-taking."

7. Limitations

The study's focus on select cities may limit the generalizability of the findings to rural or less-developed regions in India

8. Future Research

Future research could explore how technological advancements and financial literacy programs influence investor biases in different regions of India.

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The Role of Indian Knowledge System in Shaping Corporate Social Responsibility in India
(A Study of FMCG and IT Companies in Rajasthan)

AARTI CHOPRA AND RAVI KANT MODI

Abstract : *The Indian Knowledge System is based on ancient texts which is deep-rooted with the Vedas and principles that are based on Dharma (righteousness) and Ahimsa (non-violence), etc. These knowledges are profoundly related to Corporate Social Responsibility (CSR) and influences Indian businesses to lead sustainable development. Additionally, Indian knowledge system encourages to include holistic health, nature, psychology, environment, neuroscience, etc. to address contemporary societal problems. Moreover, Mahatma Gandhi has given the concept of "trusteeship" that advocate viewing wealth as a means for societal good.*

Hence, to conduct this research, survey method is used to collect the data. For sampling, 120 sample size (selected through non-probability sampling method) is used from the employees of different organizations including FMCG and IT companies of Rajasthan to understand whether the firms are using Indian Knowledge System or not and how the use of Indian Knowledge System is assisting to shape CSR practices in India.

1. Introduction

The Indian Knowledge System (IKS) encompasses Gyan, Vignan, Jeevan Darshan, Vedas, Puranas, principles that are based on Dharma (righteousness), Ahimsa (non-violence) and Seva (Selfless Service). IKS actively engage in spreading the rich heritage of India while shedding light on the traditional knowledge in the field of arts, basic sciences, technology,

Dr.Aarti Chopra, Associate Professor, Faculty of Management and Commerce, Poornima University, Jaipur, Rajasthan, Mob : 9928396866, E-Mail id : chopraaarti.1981@gmail.com

Dr.Ravi Kant Modi, Professor and Dean, School of Commerce and Management, Nirwan University, Jaipur, Rajasthan, Mob : 9828571010, Email : ravimodii@gmail.com

literature, agriculture, economics, engineering, architecture, management, etc. (Ministry of Education, 2023).

IKS has played important role in shaping corporate social responsibility (CSR) in India through deeply influencing the values, ethics, and practices of businesses (Rao, 2006). The influence of IKS in CSR is deep-rooted in the ancient Indian philosophies, religious teachings, and cultural practices and all these learning are focused towards emphasizing to social welfare, environmental stewardship, and ethical conduct (Lakshman, 2009). Dharma, Ahimsa and Seva are the ethical foundations from Indian philosophy and are focused towards leading CSR in the Indian culture.

Hence, to conduct this study, IKS is selected while shedding light on the impact of IKS in shaping CSR in India. To develop better understand about the selected topic, niche area is selected. For this purpose, FMCG and IT companies in Rajasthan were selected for study purpose.

The Research Objectives of this research paper are:

● To investigate the role of IKS in shaping the ethical frameworks that are guiding Indian companies to lead CSR initiatives

● To analyze the opportunities of integrating IKS in Indian business practices to create more culturally relevant CSR initiatives

● To identify the challenges Indian business faces while incorporating IKS into their CSR strategies

● To recommend the strategies on the basis of the findings for the businesses to better incorporate IKS into CSR for leading more sustainable and socially responsible business practices.

2. Literature Review

2.1. Indian Knowledge System

IKS can be explained as a knowledge system that has generated from the ancient India and focused towards studying the successes and challenges of the ancient Indian culture while utilizing the traditional knowledge in the sector of health, education, management, environment and other aspects of life (Ministry of Education, 2023). Rueth (2017) explained that IKS has given huge emphasis on ethical living, community welfare, and environmental harmony which has significantly influenced the evolution of CSR in the Indian culture. Integration

of traditional values with modern business practices has the potential to not only assist the Indian companies to comply with legal CSR mandates but also allows contributing to the creation of a just, sustainable, and equitable society.

2.2. Corporate Social Responsibility

Corporate Social Responsibility (CSR) refers to the ethical and sustainable practices businesses adopt to positively impact society, the environment, and the economy (Sharma, 2016). It goes beyond profit-making, requiring companies to consider the welfare of their employees, communities, and the planet. CSR activities include philanthropy, environmental conservation, fair labor practices, and community development. By integrating CSR into their operations, companies build trust, enhance their brand image, and contribute to long-term societal benefits. In many countries, CSR is not just voluntary but also mandated by law, making it an essential aspect of modern business strategy and corporate governance.

2.3. Role of IKS in Guiding CSR initiatives in Indian Companies

In the views of Muniapan (2013), IKS is assisting contemporary businesses to improve the CSR practices but it is also expected that in the future, Indian firms will show likely attitude to shape their business practices with the deep-rooted principles of IKS. The reason behind it is that increasing concern towards adhering IKS can assist the firm to ensure that businesses can force for positive social change.

At the same time, Ghosh, & Mukherjee (2020) elaborated that the concept of 'Dharma' is the central to Indian philosophy and it stresses on the importance of ethical conduct and social responsibilities. Indian businesses are mostly guided by this principle and it helps to align with the broader goals of CSR so that societal and environment benefits can be achieved. Similarly, the principle of 'Ahimsa' encompasses beyond physical harm so that ethical treatment can be offered to the all beings. It helps to lead to CSR initiatives that is focused towards sustainable practices, animal welfare, and community development(Hole, et al., 2019). Additionally, principle of 'Seva' inspires Indian corporations to show engagement in philanthropic (charitable) activities and community welfare programs as part of their CSR strategies. *For instance,* Patanjali Ayurved (FMCG firm) is focused towards providing seva to the community through its ayurveda product range (Chakraborty, 2016).

At the same time, Singh, et al. (2018) explained that in the past, Indian business practices were remained concern towards the creation of guilds (Dharmashalas, trusts, etc.) to taking care of societal needs while doing charity in these institutions which were remain responsible to provide essential services to the community (such as - education, healthcare, food, etc.) so that they can meet their responsibility towards the society in which they were dealing. Moreover, Sharma (2016) pointed that 'Nishkama Karma' is the teachings of the Bhagavad Gita which reflects the concept of selfless action without expectation of results has the potential to encourage businesses to contribute to society without solely focusing on profits. *For instance*, Infosys (IT firm) is focused towards driving its business practices with Nishkama Karma (Ranjan Chatterjee, 2009).

In the views of Muniapan (2013), upanishads and vedas are the ancient texts of IKS which have given greater emphasis on the interconnectedness of life and importance of living in harmony with nature. It supports the businesses to lead CSR practices while prioritizing environmental sustainability and protecting the natural resources. Additionally, the knowledge based on Gandhian theory has given emphasis on rural upliftment and the welfare of poor. It has allowed shaping CSR initiatives in India while driving companies to focus on rural development and giving major emphasis on education, healthcare, and infrastructure development. Similarly, Sadasivan (2018) pointed that three pillars of CSR theory also states that businesses require to focus towards three aspects, they are: profit, planet and people.

2.4. Opportunities of Integrating IKS in Indian Business Practices

Ghosh, & Mukherjee (2020) stated that at present, the level of literacy level and awareness is increasing in the Indian public. Due to which, their demand of purchasing products from the brands that are meeting their CSR practices are increasing. Consumers are expecting from the businesses to show positive contribution towards the social and economic upliftment of the communities. It is creating opportunity for the businesses to attract the target market audiences while promoting their businesses through ethical practices. In regards to this, adherence of IKS can assist Indian businesses to meet their responsibility towards the society in which they are dealing. At the same time, Rueth (2017) opined that businesses that integrate their CSR strategies with IKS become able to strengthen their brand identity as it allows them to promote cultural heritage and appeal to customers who value Indian tradition and sustainability which further also helps businesses to create unique selling points (USP).*For instance,* TCS (IT firm) integrates the concept of Dharma in business

which helps it to promote ethical practices and creates its brand awareness as a responsible technology that focuses education, health, and environment (Zubko, & Sahay, 2010).

In the views of Khuntia (2014), according to the Companies Act, 2013, it is essential for the organizations to reflects the traditional values of ethical responsibility (Dharma); non-violence, promoting environmental sustainability (Ahimsa); etc. aspects that are mentioned in IKS in their CSR initiatives while emphasizing on community welfare, and long-term sustainability. Additionally, at present, Indian government has increased focus towards preserving cultural heritage and promoting sustainable development in the businesses and influencing integration of IKS into their CSR strategies. Moreover, Dharmapala, & Khanna (2018) pointed that the legal framework for CSR in India is unique as it is deeply surrounded with the principles that are derived from the IKS and contribute towards social and environmental causes. Due to this reason, involvement of IKS in CSR strategies is assisting businesses to create opportunities to gain partnerships, grants, or tax benefits.

Ghosh, & Mukherjee (2020) determined that IKS inspires long-term view of business success, while aligning it with sustainable development goals so that long-term impacts of CSR practices can be gained rather than short-term gains. *For instance,* ITC utilizes the concept of Ahimsa to promote eco-friendly products and sustainable sourcing under "Mission Sunehra Kal" (ITC, 2017).

2.5. Challenges Indian Business Faces While Incorporating IKS

Gatti, et al. (2019) explained that community-centric business model was introduced by the Mahatma Gandhi which was focused towards trusteeship where traditional Indian businesses were focused towards the community welfare and the profits were mostly reinvested into social causes. In the past, this theory has deeply influenced firms where businesses were seen as trustees of the resources and their duty was to use profits for the common good.

However, Ghosh, & Mukherjee (2020) argued that in the contemporary Indian business, there is huge competition in the market and to survive in the industry, it is highly essential to invest funds in business to remain competitive. In such scenario, focusing towards only upliftment of communities is not practical for the current businesses. In support of this, Wagner-Tsukamoto (2019) explained that Carroll's CSR theory also explained that the foremost responsibility of the business is to meet their economic responsibilities by being profitable. Then only it can survive in the market and can fulfill further responsibilities. Carroll's

theory also highlights that businesses must obey the law to meet legal responsibilities and should also engage in philanthropic activities by contributing to the societal welfare. Das Gupta (2007) also stated that modern business practices are majorly based on western systems which gives major emphasis on profit maximization (Carroll's theory). Hence, there is a chance of having clash with the holistic and long-term perspectives of IKS.

Moreover, Muniapan (2013) pointed that lack of awareness and understanding about IKS is creating challenge for the current businesses to implement IKS in their CSR. Additionally, vast and diverse knowledge system of IKS is creating challenge to recognize which aspects are relevant to a particular business. Additionally, lack of standard documentation of IKS is also creating challenge of systematizing or codifying it for modern corporate use.

3. Research Methodology

Data Collection and Research Strategy : For data collection, primary method is used as it helps to select the data directly from the population who are facing the issue (Heap, & Waters, 2019). To conduct this research, survey research strategy is selected.

Sampling : For sampling, non-probability method is used and with the help of this method, the sample size of 120 participants was selected. The selected sample were the employees of different organizations of FMCG and IT companies of Rajasthan. The survey questions were focused towards discussing whether the firms are using IKS or not and how the use of IKS is assisting the businesses to shape CSR practices in India.

Research Ethics : While collecting the data, there is special concern given towards meeting the ethical standard of ICA. It is focused to include only original research paper to enhance knowledge and social relevance with maintaining highest quality of transparency while encouraging fair peer review (Bhattacharyya, 2006).

4. Data Analysis

To analyze the collected data through survey questionnaire, quantitative data analysis method is used. For this purpose, MS-Excel software is used which has supported to represent the collected data through tables, charts and graphs.

Section-1 : Demographic Information

From the below pie charts, it can be analyzed that the major population of the sample size belong to the age group of 26-35 (49%) and are male (65%), working

in entry level job profile (53%) and have less than 1 year experience (37%). Moreover, 59% population are working in FMCG whereas 41% working in IT sector.

Figure-1 : Demographic Information

Age
- 18-25
- 26-35
- 36-45
- 46-55
- 56 and above

0% 14%, 9%, 28%, 49%

Gender
Female 35%, Male 65%

Current Job Role
- Executive/C-suite 4%
- Other 8%
- Senior-level/Manager 13%
- Mid-level 22%
- Entry-level/Junior 53%

Working Sector
- FMCG
- IT

41%, 59%

Years of Working
- Less than 1 year
- 1-3 years
- 4-7 years
- 8-10 years
- More than 10 years

11%, 4%, 13%, 37%, 35%
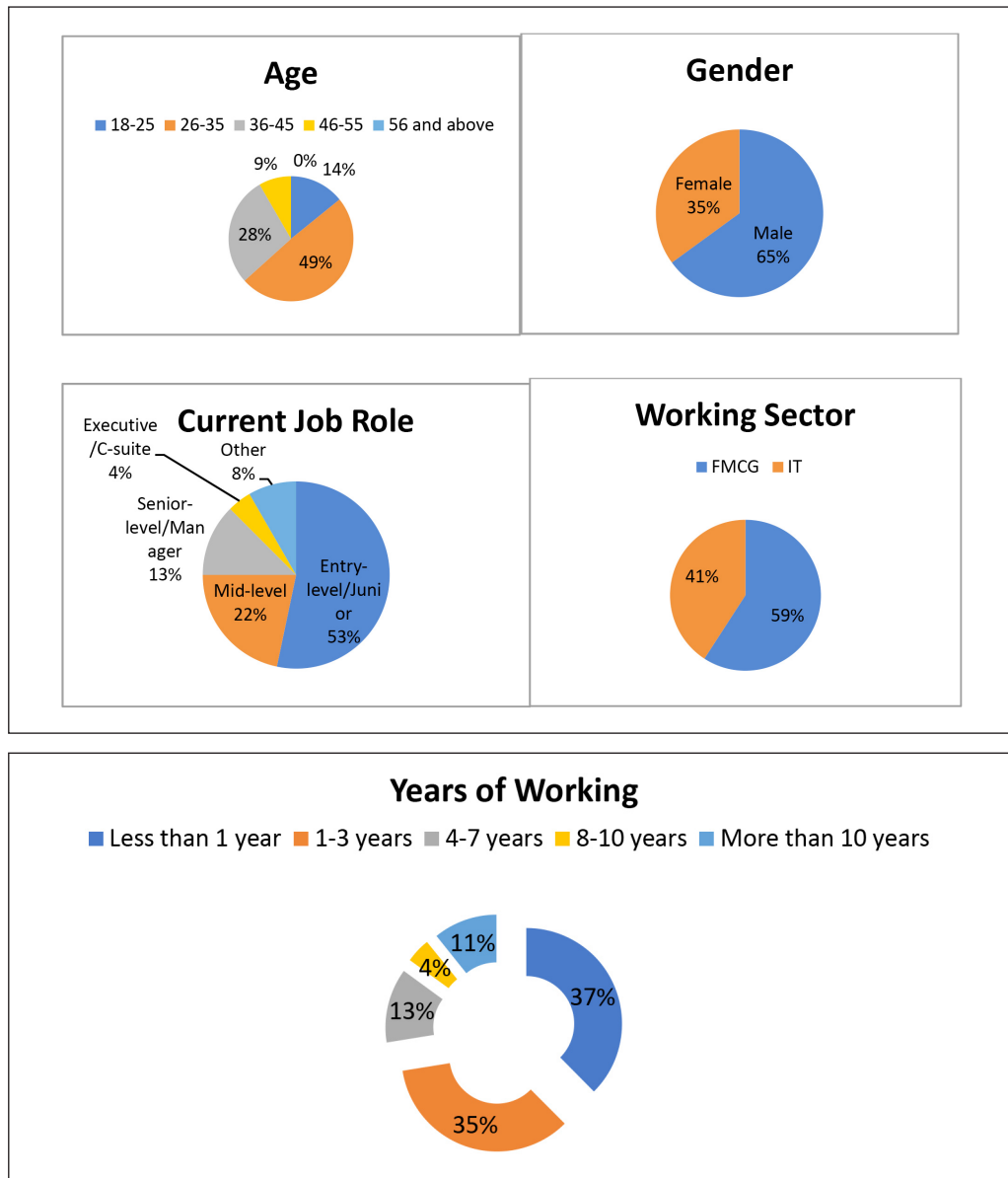
Section-2 : Awareness and Understanding of Indian Knowledge System (IKS)

Figure-2 : IKS Concepts Recognized
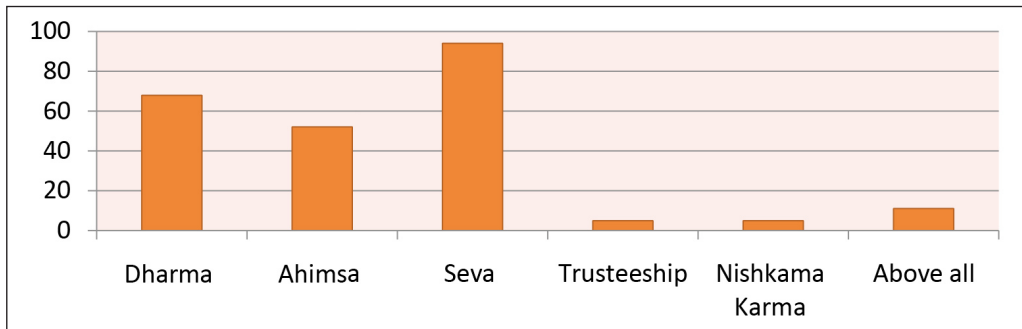
Figure-3 : Influence of IKS on the Indian Organization

From the above graphs, it can be analyzed that according to the views of the selected participants, Seva (94), Dharma (68) and Ahimsa (52) are the major concepts from the IKS that is recognized by them *(Figure-2)*. Moreover, most of the participants believe that IKS influences ethical behavior in the Indian organization at greater extent (59%) *(Figure-3)*. From this, it can be construed that Dharma, Seva and Ahimsa are deep-rooted in the Indian culture. Above finding has shown similarity with the views of Lakshman (2009) that Dharma, Ahimsa and Seva are the ethical foundations as they offer the understanding about leading CSR in the Indian culture.

Section-3 : CSR Practices and Indian Knowledge System (IKS) Influence in India

Below pie chart *(Figure-4)* reflects that most of the participants believe that their organization incorporates principles from the IKS in their CSR activities (70%)

while giving major concern on environmental sustainability *(Figure-5)* i.e. inspired by the IKS of living in harmony with nature. This finding has shown similarity with the views of Muniapan (2013) that in upanishads and vedas, there is greater emphasis given on the interconnectedness of life and importance of living in harmony with nature.

Figure-4 : Organization Incorporates IKS Principles
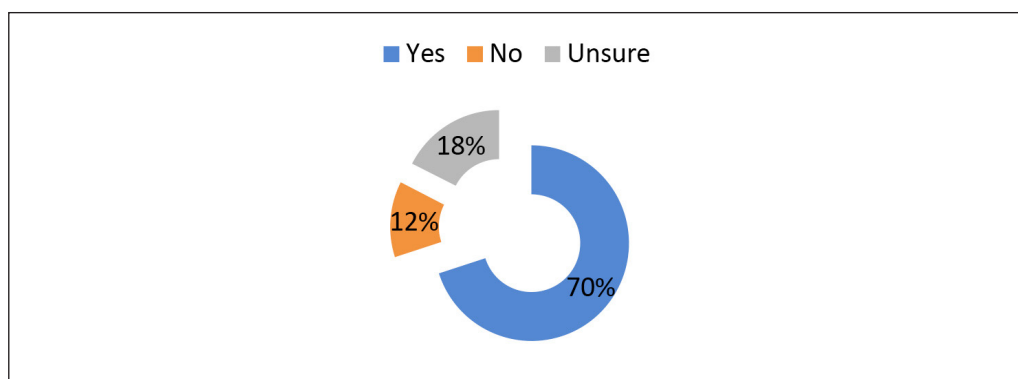
Figure-5 : IKS Principles Reflected in Organization's CSR Initiatives
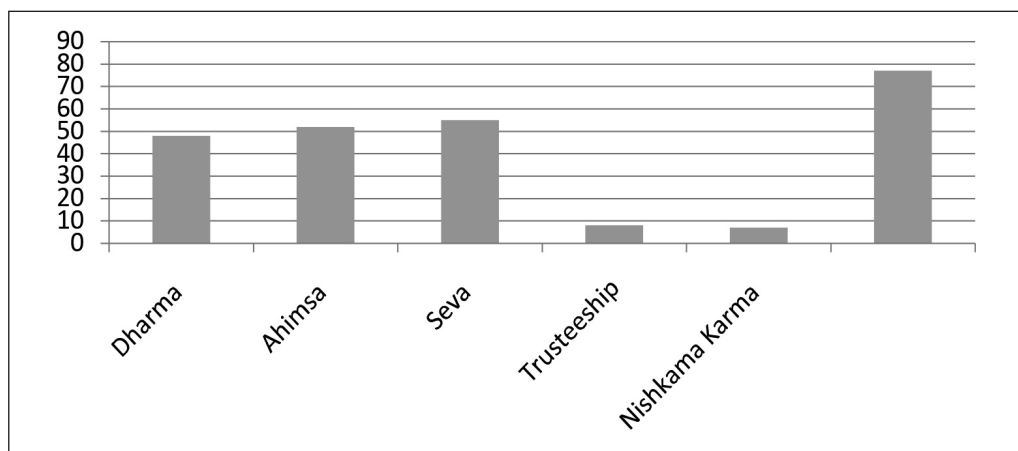
Below graph *(Figure-6)* represents that (12% + 38%) 50% participants have shown consensus from the statement that integration of IKS principles with modern CSR practices can help to improve effectiveness of CSR initiatives in organizations. It allows construing that current FMCG and IT businesses should increase concern towards integrating IKS principles with modern CSR practices.

Views of Rueth (2017) have shown similarity with the above result that integration of CSR strategies with IKS helps to strengthen brand identity while promoting cultural heritage and attracting customers while creating USP.

Figure-6 : Integration of IKS Principles with Modern CSR Practices
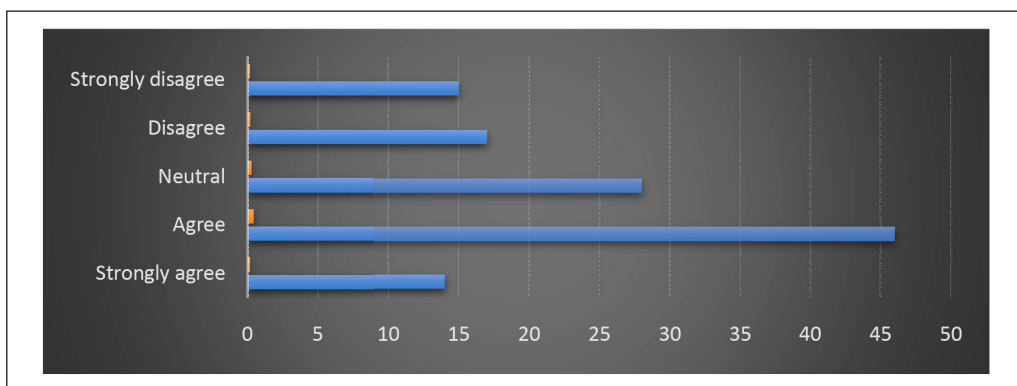
Figure-7 represents that the major challenge faced by current businesses in the adherence of IKS principles are into their CSR activities is due to inadequate resources (40%), difficulty in aligning IKS with modern business practices (29%) and lack of awareness understanding about IKS (23%). Above result has shown consensus from the views of Das Gupta (2007) that modern business practices give major concern to western systems while giving major emphasis on profit maximization which is based on Carroll's theory which creates clash with the holistic and long-term perspectives of IKS.

Figure-7 : Challenges in Increasing Integration of IKS Principles
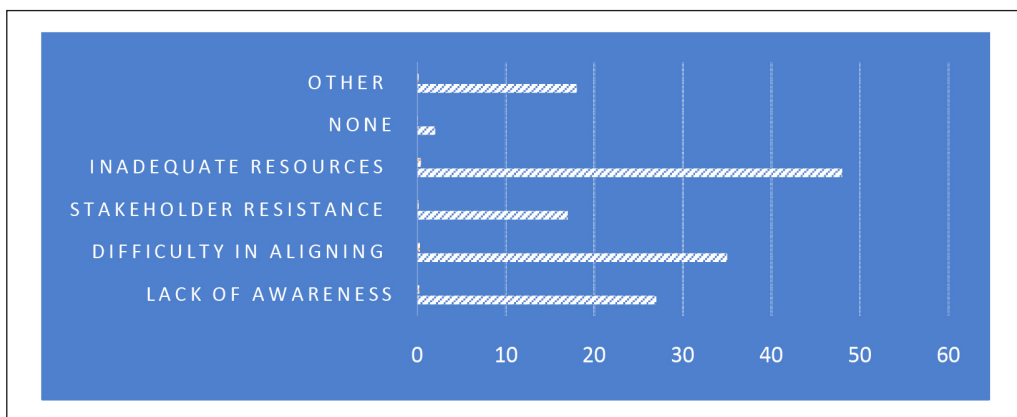
Figure-8 : Opportunities in Increasing Integration of IKS Principles
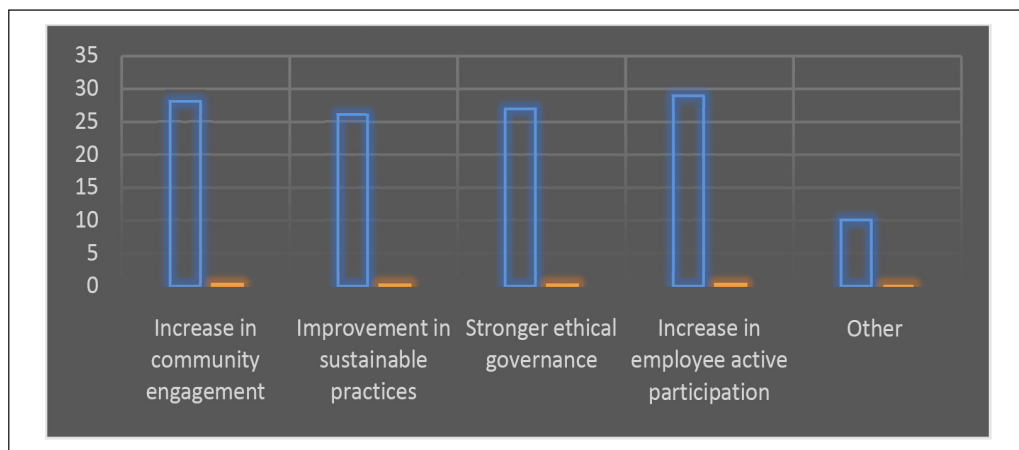
From the above figure *(Figure-8)*, it can be analyzed that different participants have different views regarding the opportunity of the future integration of IKS in shaping more effective CSR strategies in the organization. Hence, it helps to reflect that increase in employee active participation, increase in community engagement, stronger ethical governance and improvement in sustainable practices are the major opportunities. Findings of Ghosh, & Mukherjee (2020) also help to analyze that IKS plays significant role in inspiring long-term view of business success as it aligns CSR practices with sustainable development goals and the long-term impacts.

Figure-9 : Requirement of Training
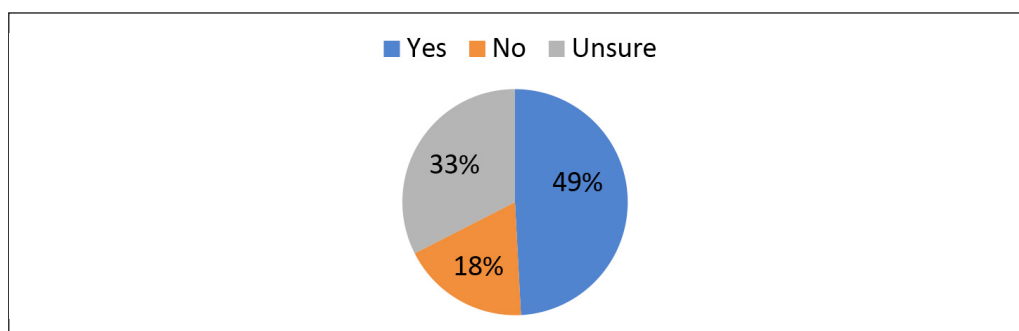
Above pie chart represents that 49% participants agreed that there is a requirement of training or workshops on the application of IKS principles in CSR for their organization so that IKS can be adhered in the system effectively.

However, 18% have shown denial from it which reflects that businesses require concerning towards other aspects too such as availability of proper resources.

Correlation Analysis

Table-1 : Correlation Analysis between Challenges in IKS Integration and Training Need

	Challenges	*Training*
Challenges	1	
Training	-0.175855147	1

From the above table, it can be analyzed that there is weak negative relationship (-0.17) with the challenges that are increasing due to integration of IKS principles into the CSR activities of the organization and training need for the application of IKS principles in the organization. Hence, it can be construed that to deal with the challenges associated with the integration of IKS principles into the CSR activities of the current organizations; training can be effective.

Pivot Table

Table-2 : Pivot Table of Opportunities for the Future Integration of IKS in FMCG & IT Sector

Row Labels	Count of Opportunties
FMCG	**71**
Improvement in sustainable practices	26
Increase in community engagement	25
Increase in employee active participation	4
Other	4
Stronger ethical governance	12
IT	**49**
Increase in community engagement	3
Increase in employee active participation	25
Other	6
Stronger ethical governance	15
Grand Total	**120**

Above pivot table represents that for Indian FMCG sector, opportunities for the future integration of IKS in shaping more effective CSR strategies in the organization is associated with improvement in sustainable practices whereas for IT firms, it is related to increase in employee active participation.

5. Conclusion & Recommendations

From this research paper, it can be construed that Indian FMCG and IT organizations are well-aware about the IKS, especially in regards to the concepts of dharma, ahimsa and seva. Mostly FMCG and IT firms are adhering IKS in their CSR initiatives to incorporate business practices related to environmental sustainability while emphasizing on the interconnectedness of life and giving concern towards living in harmony with nature as it helps to strengthen brand identity which further allows creating USP. However, current businesses also facing challenges in integrating IKS in modern CSR activities as modern business practices give major concern towards profit maximization whereas IKS gives focus towards holistic and long-term perspectives. On the other hand, current businesses are also aware about the associated benefits of future integration of IKS in shaping more effective CSR strategies, especially in regards to increase employee involvement in CSR, increase in community engagement, stronger ethical governance and improvement in sustainable practices which are essential for long-term sustainability in the contemporary highly competitive environment.

It is recommended that involvement of training related to the application of IKS principles can remain effective for the current Indian FMCG and IT organizations and will help to achieve the goal of FMCG sector related to improvement in sustainable practices and IT sector related to increase in employee active participation. Moreover, it can also be recommended that Indian government can increase concern towards providing adequate resources to the FMCG and IT firms do that they can show positive attitude towards the integration of IKS in CSR activities.

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An Introspective Study of the Various DBT Schemes Offered by GOI and their Awareness Level among Citizens Residing in Lucknow

Kapil Ajay Panjwani

Abstract : *Direct Benefit Transfer was started in India on 1ˢᵗ January, 2013 to avoid corruption of middlemen and facilitate the ease of transfer of funds to the citizens of India. The scheme provides funds in many forms including Subsidy, Scholarships, etc. The government has till the year 2022-23 made 7,16,396 Cr. Of DBT transfer totalling number of transfers to 693 under 314 schemes. This paper is a study of secondary data about the achievements by the government of India under the DBT schemes and also the issues faced by common man under to avail the benefits of DBT Scheme. The paper also studies about the awareness level of citizens of Lucknow about the DBT Schemes of the GOI.*

Keywords : Direct Benefit Transfer, India, Lucknow, Awareness, DBT Schemes.

1. Introduction

Direct Benefit Transfer has not only revolutionised the way in which the government distributes transfers, but it has also implanted in the minds of the public the belief that the money they have worked so hard to acquire will not be wasted. Since decades, the government has been involved in aiding the poor sections in the form of necessities. However, it was observed that the services and benefits were not being transferred to the actual beneficiaries. As a result, the government reformed the system in the name of Direct Benefit Transfer on January 1, 2013, to prevent such leakage of funds, wastage, and other similar issues.

This shows that subsidies and other benefits are being channelled directly into the bank accounts of the real beneficiaries, rather than being provided through a third party, in a timely and expedient manner. It was the UPA-2 government

Kapil Ajay Panjwani, Research Scholar, Department of Commerce, University of Lucknow.
E-mail : kapilpanjwani12@gmail.com

that initially proposed such a system, but it was the NDA-2 government that was responsible for putting it into action. It consists of–

1. **Financial Transfers -** This category includes the financial benefits that are distributed by the Government of India to individual beneficiaries. Including but not limited to PAHAL, NSAP, and MGNREGA, along with the following:

    *   Welfare Programmes that include Cash Components

    *   Subsidy Programmes

    *   Monthly stipends and financial aid

    *   Cash prizes for outstanding performance

    *   Pensions and pensions

2. **In-Kind Transfer –** It refers to the advantages that are provided to individuals by the Government of India in the form of in-kind transfers. These benefits include Midday Meal, Swachh Bharat, Training and Skills Development, and other similar programmes.

3. **Other Transfers -** Honorarium, Teachers in Aided Schools, ASHA Workers under NHM, Payment to Third Parties for Providing Service, such as Anganwadi Workers and Non-Governmental Organisations.

When it comes to transfers of this kind, there is always a medium or intermediary that is known as a DBT Enabler. This makes it possible for such transfers to take place. This includes things like Aadhar, bank facilities, network infrastructure, business correspondents, and other similar things. Aadhar is the most desired of all of them since it serves as a financial address, makes it possible to conduct financial transactions without any complications, and enables the transfer of funds using demographic and biometric authentication.

Direct benefit transfers, often known as DBTs, are a method that has been used by the Government of India (GOI) and a number of state governments as a means of transferring benefits and payments digitally to the bank accounts of the recipients. Across 56 ministries, 440 schemes that encompass farm and non-farm subsidies, social protection payments like pensions and public workfare programmes, scholarships, academic fellowships, conditional cash transfers, and other government payments are responsible for implementing direct benefit transfers (DBTs). As of January 2019, the Direct Benefit Transfer Mission of the

Government of India (GOI) reported that a total of 2,16,844 crores were transferred in 2018-19.

Nandan (2011) Janani Suraksha Yojana employed conditional cash transfer in India. In the 2010-11 economic survey, unconditional cash transfers were viewed. It says well-targeted UCT can increase household spending, asset ownership, and ultra-poor food security. In the 2011-12 budget speech, the GOI created a task team under Nandan Nilekani to approve and implement direct subsidy transfer. Cash subsidies were given to beneficiaries directly to spend for market services. Thus, government welfare payments were made directly to beneficiaries via Aadhaar-linked bank accounts. Direct benefit transfers to seven entirely centrally financed Indian government schemes began on January 1, 2013.

Recently, the RBI committee chaired by Deepak Mohanty (Report of the committee on medium-term path on financial inclusion, 2015) recommended that the government transfer cash to farmers equivalent to the fertiliser subsidy because subsidising farmers by reducing prices could be reverting. Indian Reserve Bank). In a similar note, the committee discussed cash transfer in irrigation and power sectors as the most effective financial inclusion method. The Indian government declared in the 2016-17 union budget to trial direct benefit transfer of fertiliser subsidy to farmers in a few districts based on task force and committee on financial inclusion recommendations.

2. Literature Review

Karan Macours (2013) claimed that adequate data from the research has provided support for the concept that cash transfer has assisted in breaking the cycle of poverty by facilitating the expansion of human capital among the young people who come from low-income families.

It has been concluded and indicated by Rajasekaram N (2018) that Basic Savings Bank Depost Account (BSBDA) accounts and Direct Benefit Transfer (DBT) accounts have made significant progress in incorporating individuals who were previously excluded from the financial system. By providing everyone with an Aadhaar card number, the Government of India has been able to overcome the obstacle of "Lack of Legal Documents." Currently, the Aadhaar card is accepted by banks for the purpose of opening a bank account.

Sharma Aman (2018), By extending DBT schemes, the Government of India is projected to save 82,985 crore. According to the most recent official numbers, the system, which involves transferring subsidies directly into the bank accounts

of beneficiaries, saved the Government of India 25,956 crore by eliminating fraudulent account holders.

According to Korde (2015), there were relatively few Aadhaar-enabled accounts during the DBT deployment, there was limited accessibility to banking services, and there was little knowledge of the programme. Since they don't feel safe doing business with others, the majority of rural residents are greatly dependent on others to use financial services, hence they are largely unaware of this arrangement and unable to easily benefit from it.

According to Kumar (2016), every company's primary goal with its DBTL plan is to boost customer satisfaction to boost revenue and customer loyalty. Because 98% of consumers are satisfied with the information and services they receive from the company, distributors, bank, and hotline, there is a high level of awareness regarding database transfer. Clients have connected their bank account to their Aadhaar card.

According to Rashi et al. (2019), DBTs offer a great deal of potential to improve women's lives and advance society. The main obstacles that women encounter were outlined in their report, and these included limited information availability, financial literacy, technology, mobility issues, a lack of compelling use cases, and reputational and social expenses. The government, experts, and regulators have made proposals to overcome these crucial hurdles to create an environment that guarantees women may exercise their agency while utilising these benefits and payments.

According to Justin Joy's (2018) analysis, the government's DBT programme is a work in progress that needs to be continuously monitored and examined to determine its true costs and benefits. The DBT Scheme has its own chances and concerns, just like any other initiative or scheme. DBT is based on two pillars: the Aadhaar card and financial inclusion achieved through bank account opening. Without a question, the former is a cutting-edge instrument with a lot of potential as well as some privacy and freedom issues. The government's implementation of the DBT and subvention schemes has benefited greatly from the latter, but banking institutions should also be encouraged to carry out other, more crucial tasks like credit lending.

Dar (2022) highlights the substantial influence of Direct Benefit Transfer (DBT) implementation in India on bolstering government efficiency, transparency, and accountability in disbursing subsidies and benefits to the populace. The research

delves into the advantages and obstacles linked with DBT, underscoring its significance in fostering financial inclusion, curbing leakages, and refining the precision of welfare scheme targeting. Dar's study offers crucial perspectives on the transformative capacity of DBT in enhancing the well-being of underprivileged communities in India.

3. Objectives

1. To Study about the various benefits achieved by the GOI using DBT Schemes.

2. To study the awareness level of DBT Scheme of the government of India in Lucknow District

3. To study about the problems faced by common man to avail the benefits of DBT Scheme

4. Research Methodology

This research paper is based on primary data as well as comprehensive review of existing literature. To achieve the objectives under study, it synthesizes information from various sources, including academic papers, government reports and industry publications to assess the benefits achieved by the government and problems faced by individuals related to DBT. To check the awareness level a questionnaire was prepared and data was collected from 120 respondents in Lucknow district on a random basis using Convenience Sampling.

4.1. Analysis & Interpretation

Table-1 : Year Wise Benefits Achieved by the Government of India Using DBT Schemes

Year	Total DBT Transfer	Total No. of Transfers	No. of Schemes
2019-20	3,81,631 Cr.	438 Cr.	314
2020-21	5,52,527 Cr.	603 Cr.	314
2021-22	6,30,264 Cr.	717 Cr.	314
2022-23	7,16,396 Cr.	693 Cr.	314
Source : Secondary data.			

The following revolutions have taken place when DBT Schemes were introduced –

1. The PAHAL Scheme, under the Ministry of Petroleum and Natural Gas, the GOI has eliminated 4.11 Crore duplicate, fake or non-existent and inactive LPG connections.

2. The PDS Scheme under the Department of Food and Public Distribution has deleted 4.2 Crore duplicate and fake or non-existent Ration Cards (Since 2013 till 2021)

3. MGNREGS under the Department of Rural Development has estimated 10% savings on wages on account of deletion of duplicate, fake or non-existent, ineligible beneficiaries.

4. NSAP under the Department of Rural Development has deleted 10.84 lakh duplicate, fake or non-existent, ineligible beneficiaries.

5. Scholarship Scheme under the Ministry of Minority Affairs has deleted 27.9 lakh duplicate, fake and non-existent beneficiaries.

6. Scholarship Scheme under Department of Social Justice and Empowerment has deleted 1.98 lakh duplicate, fake or non-existent beneficiaries.

7. Under the Ministry of Women and Child Development there has been a reduction of 98.8 lakh duplicate, fake or non-existent beneficiaries.

8. Under the Department of Fertilizers there has been a reduction of 158.06 Lakh Metric Tons of fertilizer sale to retailers.

9. Up to March 2022, there has been a total savings/benefits of 2,73,093.80 Crores due to DBT and other governance reforms because of which the government has been able to target the genuine and deserving beneficiaries.

10. Under the DBT Performance Ranking of States/ UTs, Haryana has been ranked-1 and Uttar Pradesh has been ranked – 2 whereas Tripura has been ranked number-3.

5. Awareness about DBT Scheme

Table-2 : Demographic Profile of the Respondents

Variable	Description	Frequency	Percentage
Gender	Male	29	24.16%
	Female	91	75.84%
	Total	120	100%
Age (Years)	18-25 Years	67	55.83%
	26-35 Years	45	37.5%
	36-45 Years	6	5%
	46-55 Years	1	0.833%
	56 and above	1	0.833%
	Total	120	100%
Education	Primary	1	0.833%
	Secondary	5	4.167%
	Graduate	50	41.67%
	Post Graduate	56	46.67%
	Other	8	6.67%
	Total	120	100%
Occupation	Private Sector	19	15.83%
	Student	85	70.83%
	Unemployed	10	8.33%
	Farmer	1	0.833%
	Business	3	2.5%
	Public Sector	2	1.67%
	Total	120	100%
Marital Status	Married	22	18.33%
	Unmarried	98	81.67%
	Total	120	100%

Table-2 : Awareness about DBT Scheme

Are you aware about DBT Scheme	Frequency	Percentage
Yes	104	86.67%
No	16	13.33%

The above Table-2 shows that out of the total 120 respondents, 104 were aware about the DBT scheme of the government whereas 16 were unaware about the DBT Scheme. Hence, the awareness level is 87% approx. whereas 13% of the total respondents were not aware of the DBT Scheme.

Table-3 : Beneficiary under DBT Scheme

Are you a beneficiary under DBT Scheme	Frequency	Percentage
Yes	51	41.67%
No	70	58.33%

Table-3 shows that out of the total 120 respondents, 51 were a beneficiary under the DBT Scheme of the government of India whereas 70 did not receive any benefit under the DBT Scheme of the government. Therefore, 58.33% of the respondents were not beneficiary under the DBT scheme whereas 41.67% were beneficiary under the scheme of the government.

Problems Faced by Common Man to Avail the Benefits of DBT Scheme

Under the DBT Scheme the common man has been facing some problems. Some of which are as follows

1. **Lack of Awareness :** Many beneficiaries, especially in the rural areas may not be fully aware of the DBT Scheme and its process of enrollment or accessing the scheme.

2. **Technological barriers :** The population of India is not familiar with the technology and connectivity. Some beneficiaries, particularly the elders and those living in areas with poor internet connectivity have been facing such problems. The common man is also facing difficulties in using banking services, mobile phones, or online platforms may prevent them in accessing their benefits.

3. **Identity and Authentication Issues :** Adhaar Authentication, which is often used for DBT, can sometimes fail due to issues like biometric mismatch or incorrect linking of Aadhaar numbers. This can lead to delays or denials in receiving benefits.

4. **Banking Infrastructure :** Lack of branches and ATMs can also be the reason due to which the beneficiaries face challenges in accessing their bank accounts or withdrawing cash, especially if they have to travel long distance.

5. **Delayed Payments :** Delays in transferring benefits to bank accounts of the beneficiaries can cause financial hardships for those who rely on timely assistance for essential needs such as food, medicine, education, etc.

6. **Exclusion Errors :** There are instances of eligible beneficiaries being excluded from DBT Schemes due to errors in the identification process or data discrepancies.

7. **Corruption or Middlemen :** While DBT aims to reduce leakages and eliminate middlemen, there have been cases of corruption and fraud where intermediaries exploit beneficiaries or siphon off funds meant for them.

6. Conclusion

The DBT system provides guarantee that the funds are reaching the accounts of the beneficiaries as the money flow can be tracked digitally. It also ensures that funds are being withdrawn by the beneficiaries themselves through biometric authentication system. Through the enrolment drive of UIDAI the biometrics collected is available to banks through Adhaar enabled accounts, saving both need and cost of verification of documents and procedures. It is designed to ensure that poor and needy people should be benefitted and get basic necessities like food, health and education. It is expected that the DBT transfers would bring down the poverty and inequality in India. The achievements made by the government of India have been commendable.

Under the study, most of the people were aware about the DBT scheme of the government where the cash gets transferred in the bank accounts of the beneficiaries but there are certain problems too which a common man is facing such as banking infrastructure, delayed payments, etc. The government need to make sure that there is transparency while transferring funds so that there is no corruption. Proper banking infrastructure, on-time transfer of payments are also required to be done on behalf of the government.

7. Limitations of the Study

The research has a few shortcomings.

1. The Primary data was taken from a specific geographical region which acts as a limitation of the study.

2. The primary data includes data collected from students (more than 70%) as compared to farmers, private sector, and other groups of people.

3.   The secondary data includes data collected from websites of the DBT scheme where up to date information might not be available.

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The Financial Literacy of Goat Farmers : Determinants and Implications

M. Muthuveni and G. Nedumaran

Abstract : *This research paper investigates the Financial Literacy levels of goat farmers in Sivaganga District of Tamil Nadu. The study examines the factors influencing financial knowledge and its influence on financial services accessibility. The research design used in the study was quantitative. Collecting data from 220 respondents through structured interviews. The findings highlights that Financial Literacy is predominantly influenced by educational qualifications, with gender, age, and farming experience showing no substantial effects. Access to financial services was found to be positively correlated with financial literacy, highlighting the importance of financial knowledge in navigating financial institutions. The study also reveals that goat farming is primarily a female-driven sector, with equitable Financial Literacy levels observed between male and female respondents. These results underline the need for focused educational interventions and Financial Literacy initiatives that cater to the unique requirements of goat farmers in order to promote sustainable development and financial inclusion. The study contributes to the body of literature by emphasizing the role that financial literacy plays in enhancing the financial stability of households that raise goats.*

Keywords : Agricultural Economics, Educational Interventions, Financial Literacy, Financial Inclusion, Goat Farming, Gender Equity, Sustainable Development.

1. Introduction

The goat farming sector is a cornerstone of agricultural economies worldwide, particularly in rural and economically marginalized areas. It serves as a critical source of livelihood, contributing to food security, rural employment, and

M. Muthuveni, Research Scholar, Department of Commerce, Alagappa University, Karaikudi- 630004. muthuveni305@gmail.com

Dr.G.Nedumaran, Professor, Department of Commerce, Alagappa University, Karaikudi, 630004. drmaran3@gmail.com

financial independence among smallholder farmers. Despite its importance, the financial and operational challenges faced by goat farmers often undermine their productivity and profitability. A growing body of literature highlights the need for improved Financial Literacy among farmers as a vital determinant of sustainable farming practices and enhanced economic outcomes. The capacity to understand and successfully apply financial knowledge and skills is known as financial literacy (FL), and it has become essential for fostering financial well-being and improving decision-making skills in a variety of economic sectors, including agriculture.

Financial literacy is even more important in the context of goat farming because of the particular difficulties faced by the industry, including significant revenue volatility, market risk exposure, and reliance on outside funding. The productivity and profitability of goat farming businesses are greatly impacted by both non-financial and financial aspects, according to studies. The goat industry's financial performance is influenced by a number of elements, including labour input, feed costs, fixed capital expenditures, and the demographics of farmers, according to Tsiouni, Mamalis, and Aggelopoulos (2022). They emphasized the need for effective management practices to overcome financial inefficiencies and bolster economic outcomes. Similarly, research conducted by Jawale and Borde (2021) highlighted the pivotal role of goat farming, specifically Osmanabadi goat farming, in fostering financial independence among Indian farmers, particularly in economically distressed regions. These studies underscore the importance of financial competence in navigating the economic challenges of goat farming. Further, Financial Literacy has been linked to improved management practices and enhanced financial outcomes in farming contexts. Gottlieb and Hansson (2022), in their study on Swedish farmers, demonstrated that Financial Literacy significantly correlates with better accounting practices, higher profitability, and reduced borrowing costs. These findings reinforce the hypothesis that Financial Literacy not only enables farmers to make informed decisions but also enhances their access to financial services, thereby facilitating improved farm performance.

Despite the apparent relevance of Financial Literacy, limited research has explored its determinants, knowledge levels, and implications within the goat farming sector. This study intends to close this gap by investigating the financial literacy levels of goat farmers, with an emphasis on the factors that influence them and how they contribute to better decision-making and access to financial services. The following are the study's particular goals:

1. To identify the factors influencing Financial Literacy among goat farmers.

2. To assess the Financial Literacy knowledge level of goat farmers.

3. To examine the relationship between financial literacy and access to financial services.

This study holds significance as it has the ability to offer insights about goat farmers' financial competencies and their impact on economic outcomes. With a better understanding of the factors that influence financial literacy and its consequences, policymakers, extension organizations, and financial institutions can create focused interventions to improve goat farmers' financial security and resilience.

2. Review of Literature

Effective farm management and access to financial services, particularly for small ruminant farmers, depend on financial literacy. According to studies conducted in Ghana, financial literacy and access to financial services are correlated in a way that reinforces one another (Twumasi et al., 2022). However, access to formal credit remains limited in many regions, with semi-formal credit sources prevailing. Gender disparities in credit access persist, as men generally have greater access to formal financial services than women (Silong & Gadanakis, 2020). Enhanced Financial Literacy can improve market participation and profitability, further underlining its importance for sustainable goat farming practices.

In addition to financial considerations, socio-cultural factors significantly influence livestock investment decisions, often surpassing economic considerations. For example, in Tanzania, cultural practices such as wealth storage, bride price, and ethnic traditions dominate decision-making, emphasizing the need for policies that integrate economic and cultural elements to foster sustainable livestock investments (Mayala et al., 2017). Similarly, in southwest Nigeria, small ruminants provide financial stability for rural women during economic crises, highlighting the necessity of government support to sustain small ruminant husbandry (Oluwatayo et al., 2012). Furthermore, in West Bengal, goat farming serves as a secondary source of income, with improved farming techniques and government assistance recommended to enhance production and socioeconomic outcomes (Bhattacharjee & Dhara, 2023).

Market participation among smallholder livestock farmers is closely linked to Financial Literacy and production dynamics. Factors such as transaction costs,

infrastructure, and human capital significantly affect market engagement. For instance, improved extension services and infrastructure have been shown to enhance market participation among farmers in Namibia (Zuwarimwe & Mbaai, 2015). Meanwhile, training needs assessments conducted in Ekiti, Nigeria, revealed a lack of knowledge and skills in key management areas, necessitating targeted capacity-building programs to address these deficiencies (Alabi et al., 2018).

Despite these advancements, risky health management practices, such as improper antibiotic use and inadequate veterinary support, remain pervasive challenges for small ruminant farmers. In Vietnam, these issues were compounded by limited veterinary collaboration, prompting calls for enhanced biosecurity through targeted training (Cao Ba et al., 2020). Similarly, Ethiopian farmers participating in community-based breeding programs demonstrated higher financial returns, showcasing the benefits of focused livestock development initiatives (Kassie et al., 2021). In Kenya, trypanosomiasis was identified as a major cause of financial losses among small ruminants, with high-cost interventions such as Isometamidium chloride limiting profitability and requiring strategic use (Irungu et al., 2002).

Another key challenge lies in the low awareness of zoonotic diseases among livestock farmers, which is closely linked to education levels and disease management practices. A study in Puducherry revealed significant gaps in awareness, underlining the importance of education campaigns to mitigate associated risks (Rajkumar & Bhattacharya et al., 2016). Such findings underscore the need for widespread awareness initiatives targeting small ruminant farmers.

Furthermore, training programs have demonstrated significant impacts on farmer productivity and knowledge acquisition. For instance, in Kerala, goat husbandry training programs improved participants' knowledge, with on-campus training being particularly effective. However, women favored off-campus options due to accessibility constraints (Bimal et al., 2017). Similarly, in Odisha, frequent interactions with microfinance institution (MFI) officials increased farmers' knowledge compared to those engaging with public sector banks. Nevertheless, underprivileged farmers required continuous training to maximize benefits (Panda et al., 2018). Additionally, in Maharashtra, entrepreneurship training on goat rearing led to a 172% increase in knowledge among marginal farmers, highlighting the transformative potential of tailored interventions (Sharma & Singh, 2023).

Addressing these challenges requires an integrated approach combining financial inclusion, adaptive management strategies, technological innovation, traditional knowledge, and community collaboration. Policymakers and stakeholders must prioritize targeted interventions and capacity-building programs to enhance productivity, sustainability, and socioeconomic outcomes in goat farming (Li & Gao, 2021).

2.1. Research Gap

There is a research need in creating focused, all-encompassing training programs that respond to the unique socioeconomic requirements and knowledge gaps of goat farmers in various geographical areas. Numerous studies emphasize the value of training, but they don't concentrate on demand-driven and region-specific strategies that can address differences in knowledge, especially in the areas of Financial Literacy, health management, and breeding. To ensure sustained development and productivity gains for goat farmers, more research is required to assess and put into practice tailored training and financial assistance approaches that can adjust to both cultural and economic situations.

2.2. Study Framework

Research Approach

This study looks at the financial literacy of goat farmers and the factors that affect it using a quantitative research technique. The research utilizes primary data collected through direct interviews, structured to systematically address the study's objectives. This approach ensures a targeted exploration of Financial Literacy levels and their implications among goat farmers.

2.3. Research Area and population

The research was conducted in Tamil Nadu's Sivaganga District, which is well-known for its extensive goat raising industry. Goat farming in this District plays a critical role in rural livelihoods, making it an ideal location for examining the determinants and implications of Financial Literacy among goat farmers. The target population comprises goat farmers owning at least ten goats, as this level of livestock ownership indicates substantial economic activity and the potential need for financial management skills.

2.4. Sampling Method

The study was carried out in Sivaganga District, Tamil Nadu, which is renowned for its significant involvement in goat farming. This method was chosen to ensure

that the sample includes only farmers with significant involvement in goat farming. Specifically, the inclusion criteria required respondents to own a minimum of ten goats as farmers with smaller herds are less likely to rely on advanced financial practices or experience significant economic impact from their farming activities.

3. Sample Size

The data collection technique involved visits to 230 houses. 220 of them gave their approval to be included in the study, making 220 the total sample size. Due to personal reasons or disinterest, ten households chose not to take part.

3.1. Data Collection Method

An interview schedule was used to administer a standardized questionnaire that was used to collect data. Given the high percentage of illiterate or semiliterate goat farmers in the area, the interview schedule approach was selected to address the target population's literacy levels. This method made it possible for the researcher to clarify the questions aloud, guaranteeing precise comprehension and answers. In order to collect comprehensive data on the farmers' operational procedures, financial literacy, demographic traits, and financial services accessibility, a systematic questionnaire was created.

3.2. Results and Discussions

Table-1 presents the demographic profile of the goat farmers who were sampled for this study. Women made up 82.3% of the respondents, indicating a significant gender gap that highlights the importance of female involvement in goat farming in the area under study. Similar to previous research, small-scale ruminant farming is a vital source of income for rural women in times of economic hardship (Oluwatayo & Oluwatayo, 2012). The age distribution also reveals that 44.5% of respondents are between the ages of 35 and 45, indicating the predominance of economically engaged people in goat husbandry.

Educational qualification reveals that a significant majority (67.3%) have school-level education, while 31.4% are illiterate. This demographic suggests potential limitations in Financial Literacy, consistent with linking education levels to financial decision-making acumen (Gottlieb & Hansson, 2024). Additionally, the data show that almost half of the respondents (49.5%) had been goat farmers for 10 to 20 years. Furthermore, the majority of respondents (90.5%) were married, which illustrates the significance of family ties in these businesses. With 43.6%

Table-1 : Demographic Background of the Respondents

Variables	Group	Frequency	Percentage
Gender	Male	39	17.7
	Female	181	82.3
Age group	below 25	8	3.6
	25-35	25	11.4
	35-45	98	44.5
	45-55	55	25.0
	above 55	34	15.5
Educational Qualification	Illiterate	69	31.4
	School	148	67.3
	Diploma	2	.9
	Degree	1	.5
No. of years in Goat farming	Less than 10 years	22	10.0
	10 to 20 years	109	49.5
	20 to 30 years	80	36.4
	30 to 40 years	9	4.1
Marital Status	Married	199	90.5
	Widow	13	5.9
	Divorced	8	3.6
Distance to Bank	less than 2km	25	11.4
	2-4 km	96	43.6
	4-6 km	68	30.9
	6-8 km	23	10.5
	above 8	8	3.6
Decision-making	Myself	181	82.3
	Partner	23	10.5
	Other members	3	1.4
	Consulting with all	13	5.9

Source : Authors' own creation.

of respondents residing 2-4 km from banking facilities, moderate accessibility to financial services emerges as a notable factor. Decision-making patterns, with 82.3% reporting individual autonomy, further reinforce the independence characteristic of goat farming households. Collectively, these factors illuminate the demographic variables shaping Financial Literacy.

Figure-1 : Demographic Background of the Respondents
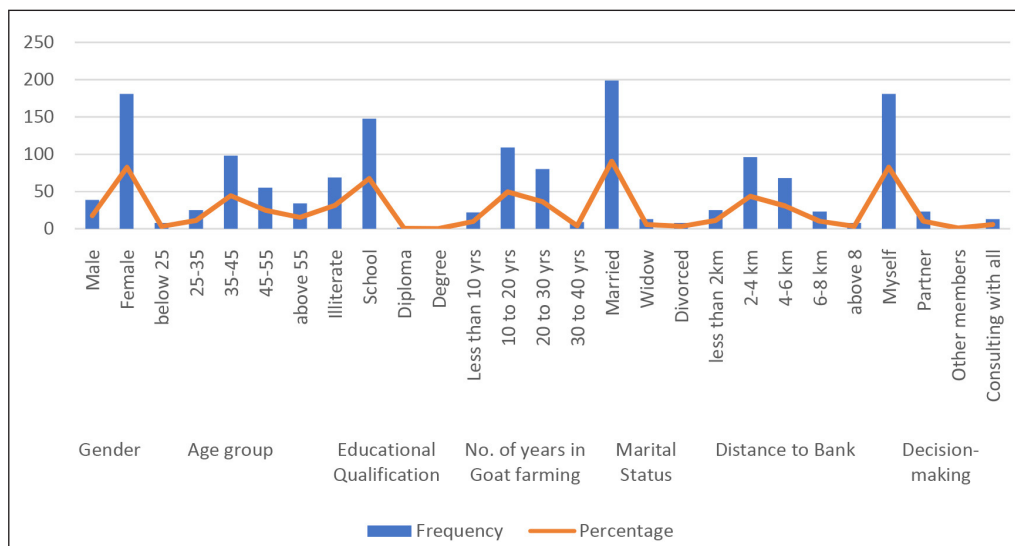
H₀ : There is no significant difference between demographic characteristics and Financial Literacy among goat farmers.

Table-2 : Factors Influencing Financial Literacy

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	2.335	.177		13.158	.000
Gender	-.048	.059	-.043	-.816	.416
Age	-.002	.027	-.004	-.063	.950
Educational Background	.545	.045	.643	12.002	.000
No. of Years	.019	.038	.032	.510	.611
Distance	.004	.024	.010	.183	.855
Marital	.023	.032	.038	.722	.471
Decision	.046	.029	.084	1.586	.114

R=.654[a], R Square=.427, Adjusted R Square=.408, Durbin-Watson = 2.070

Source : Authors' own creation.

Regression analysis results from Table-2 identify educational qualification as the most significant determinant of Financial Literacy as standardized beta coefficient (β) of 0.643 ($p < 0.01$). This is similar to the previous research that explored the pivotal role of education in fostering financial competency among farmers (Gottlieb & Hansson, 2024). Contrarily, variables such as gender, age, years of farming experience, marital status, distance to financial institutions, and decision-making practices exhibit no statistically significant influence, as indicated by their high p-values (> 0.05). The model's modified R-square value of 0.408 indicates that the included predictors account for about 40.8% of the variance in financial literacy. These findings similar to the Twumasi et al. (2022), who emphasized the transformative effect of education on enhancing farmers' financial capabilities and service accessibility.

Figure-2 : Factors Influencing Financial Literacy
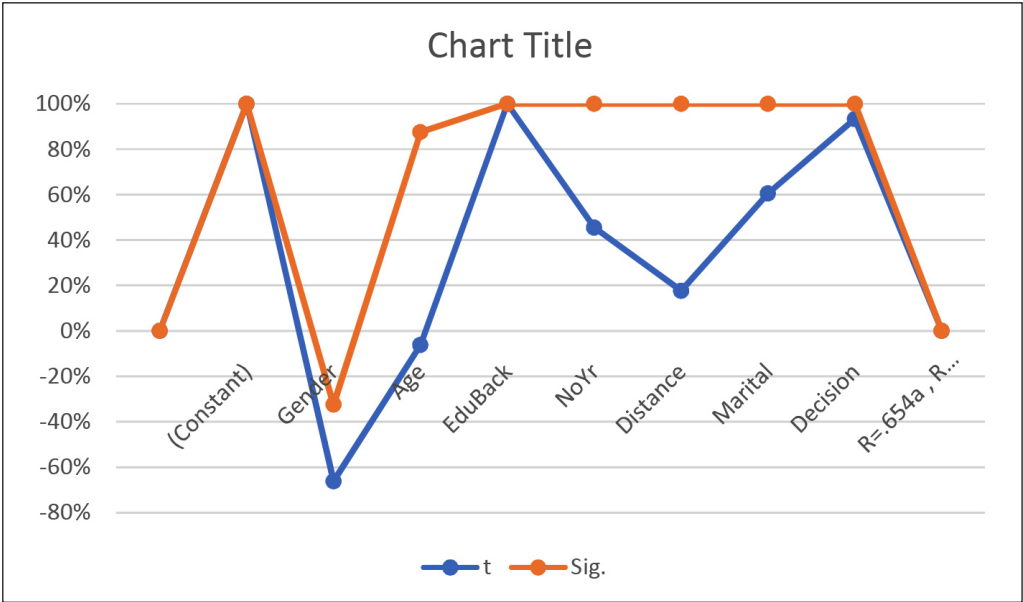
H_0 : There is no Significant Difference in Financial Literacy levels between Male and Female goat farmers.

The independent samples t-test presented in Table-3 reveals no significant gender-based disparities in Financial Literacy levels, such as comprehension of financial terminology, simple interest calculations, and differentiation between savings and current accounts ($p > 0.05$). This finding diverges from broader

Table-3 : Financial Literacy Level among Male and Female

		Levene's Test for equality variances		t-test for Equality of Means		
		F	Sig.	t	Df	Sig.(2-tailed)
I understand basic financial terms such as savings, interest, loans, and insurance.	Equal variances assumed	.319	.573	.496	218	.620
	Equal variances not assumed			.436	49.510	.665
I can calculate simple interest on a loan.	Equal variances assumed	.000	.994	.889	218	.375
	Equal variances not assumed			.785	49.737	.436
I know the difference between a savings account and a current account.	Equal variances assumed	.319	.573	.496	218	.620
	Equal variances not assumed			.436	49.510	.665
I save a portion of my income regularly.	Equal variances assumed	9.467	.002	1.387	218	.167
	Equal variances not assumed			1.788	79.737	.078
I usually save my money in a bank.	Equal variances assumed	.029	.864	-.334	218	.738
	Equal variances not assumed			-.353	58.954	.726

Source : Authors' own creation.

studies reporting gender-based Financial Literacy gaps (Silong & Gadanakis, 2020). It may reflect unique socio-economic conditions in Sivaganga District, where women's active engagement in goat farming could elevate their financial knowledge, narrowing traditional gender disparities. This outcome necessitates further research to elucidate the mechanisms driving this apparent equity.

Table-4 : Relationship between Financial Literacy and Access to Financial Services

		FL	FS
FL	Pearson Correlation	1	.698[**]
	Sig.(2-tailed)		.000
	N	220	220
FS	Pearson Correlation	.698[**]	1
	Sig.(2-tailed)	.000	
	N	220	220

**. Correlation is significant at the 0.01 level(2-tailed).

Source : Authors' own creation.

H : There is no significant Relationship between financial literacy and Access to financial services among goat farmers.

Table-4 shows that access to financial services and financial literacy are positively correlated (ñ = 0.698, p < 0.01). This demonstrates how financial literacy greatly enhances farmers' capacity to interact with and make use of financial systems. This result is in line with other studies by Siaw et al. (2023) and Taurasi et al. (2022), which shown a reciprocal link between financial inclusion and financial literacy. The significant correlation highlights how important financial literacy is for goat producers to successfully negotiate challenging financial landscapes and obtain necessary services.

4. Implications

In order to improve goat farmers' ability to make sound financial decisions, the study's findings underscore the importance of education in forming their financial literacy and the necessity of focused educational initiatives. Conventional wisdom is challenged by the lack of notable gender-based differences in financial literacy, which emphasizes the value of inclusive financial education that capitalizes on women's active involvement in goat farming. Furthermore, the need to enhance rural financial infrastructure in order to guarantee greater financial inclusion is highlighted by the positive link found between financial literacy and access to financial services. Given that a sizable percentage of respondents had been farmers for 10–20 years, mid-career farmers are a potential target audience for Financial Literacy programs, which could

increase their effectiveness. These insights collectively stress the importance of integrating financial education and accessibility into rural development policies to empower goat farmers and enhance their socio-economic resilience.

5. Conclusion

This study highlights the various facets of financial literacy among goat farmers and how important it is for enhancing access to financial services and bolstering economic resilience. The study highlighted the transformative power of focused educational interventions and discovered that education was the primary determinant of financial literacy. Although there are no obvious gender variations in financial literacy, the results show that structural issues such restricted access to financial institutions still exist. The significance of equipping farmers with the information required to successfully navigate financial institutions is confirmed by the high association found between financial literacy and financial inclusion. Policymakers, educators, and development professionals should take note of these findings. It may be possible to promote sustainable growth and enhance economic results by creating training programs tailored to the specific requirements of goat farmers, especially in underprivileged areas. Future research should explore innovative methodologies to measure and enhance Financial Literacy while addressing the socio-economic and infrastructural barriers faced by goat farming communities.

Authors Contribution

Muthuveni M, as the first author, is responsible for conceptualizing the study and writing the research paper. Dr. G. Nedumaran aided in the creation of the literature review, offered direction during the investigation, and supported the analysis. He also contributed to the manuscript's improvement and linguistic correction.

Disparities of Interest

The publishing of this study report does not present any conflicts of interest, according to the authors. Preparing the manuscript, collecting data, analysing it, and conceptualizing the study were all done independently.

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Impact of Fintech Literacy on Financial Performance of Woman Micro-Entrepreneurs

BHAVANI. N J AND C. VETHIRAJAN

Abstract : *This study employs a mixed-method approach to explore the relationship between Fintech Literacy and the financial performance of woman micro-entrepreneurs in Chennai. Using Convenience Sampling, 150 Woman micro-entrepreneurs were surveyed using a Structured Questionnaire. The findings suggest that these entrepreneurs exhibit an above-average understanding of Fintech Literacy. There is a strong positive correlation between Fintech Literacy and Financial Performance, with 'Financial Literacy' being the most influential component. However, the impact of 'Security and Risk Management' on financial performance is relatively weaker. These insights contribute to understanding the connection between Fintech Literacy and financial performance, offering valuable guidance for training and awareness programs in the financial technology sector.*

Keywords : Fintech Literacy, Financial Performance, Woman Micro-entrepreneurs, Financial Literacy, Fintech Products and Services, Security and Risk Management, Regulatory Compliance.

1. Introduction

In the dynamic business environment, the infusion of financial technology (Fintech) stands out as a transformative influence, revolutionizing business practices and performance. This study investigates the vital components of Fintech Literacy among woman micro-entrepreneurs and assesses their influence on the financial performance of such entrepreneurs in Chennai. By exploring these components, the research aims to uncover how woman micro-

Bhavani. N J, Full - Time Ph.D.CS, Research Scholar, Department of Corporate Secretaryship, Faculty of Management, Alagappa University, Karaikudi-630 003, Tamil Nadu, India. E-mail : vaishnavibavani@gmail.com

Dr.C.Vethirajan, Senior Professor & Head, Department of Corporate Secretaryship, Faculty of Management, Alagappa University, Karaikudi-630 003, Tamil Nadu, India. Mobile : 9443493474. E-mail: vethirajanc@alagappauniversity.ac.in

entrepreneurs adeptly utilize Fintech tools to optimize their financial performance in Chennai. This exploration sheds light on how a comprehensive grasp of Fintech components drives operational efficiency and enhances financial performance within the domain of consumer goods and services in Chennai.

2. Research Problem

In the fast-paced contemporary business landscape, characterized by the swift adoption of financial technology (Fintech), the imperative of Fintech literacy among female micro-entrepreneurs emerges as a pivotal factor shaping their Financial Performance trajectory. Despite the proliferation of Fintech solutions, there exists a discernible gap in understanding the nuanced dimensions of Fintech literacy essential for female micro-entrepreneurs in Chennai and its direct correlation with their financial performance. The primary challenge lies in gauging the levels of Fintech literacy among female micro-entrepreneurs, encompassing aspects such as Financial Literacy, comprehension of Fintech Products and Services, adeptness in Security and Risk Management, and knowledge of Regulatory Compliance.

This study endeavours to scrutinize the impact of Fintech literacy on crucial Financial Performance indicators, delving into inquiries regarding operational efficiency levels and financial outcomes associated with enhanced Fintech literacy. As Fintech solutions progressively embed themselves into business frameworks, comprehending the extent of Fintech literacy among female micro-entrepreneurs and its direct ramifications on Financial Performance assumes paramount importance. This research aims to bridge the existing gap in literature by offering an in-depth exploration of the multifaceted relationship between Fintech literacy and financial performance, specifically tailored to the context of female micro-entrepreneurs operating in Chennai.

3. Fintech and Fintech Literacy

Financial technology, or fintech, encompasses innovative technologies aimed at improving and automating the delivery of financial services. As defined by the Financial Stability Board, fintech involves technology-driven innovations in financial services that can lead to new business models, applications, processes, or products significantly impacting the provision of financial services (Financial Stability Board, 2017). Fintech activities span various financial service sectors, covering both retail and wholesale levels, including payments, clearing, settlement, deposits, lending, insurance, investment management, and market support (Financial Stability Board, 2017).

According to Zait and Bertea (2014), Financial Literacy comprises multiple dimensions, focusing on knowledge acquisition and the ability to utilize that knowledge. Conversely, digital literacy involves the use of technologies to search, create, evaluate, and communicate information, necessitating cognitive knowledge and technical skills (Alexander et al., 2016). The Organisation for Economic Co-operation and Development (OECD, 2018) outlines aspects of digital financial literacy, including understanding digital financial products and services, awareness of digital financial risks, and familiarity with consumer rights and redress procedures. Fintech Literacy, in a broader context, refers to the level of understanding and competency individuals or organizations possess in navigating and utilizing fintech products, services, and concepts. It encompasses various areas, from familiarity with digital payment methods to understanding blockchain technology and being aware of regulatory frameworks to make informed decisions about adopting fintech solutions.

In the domain of Woman Micro-entrepreneurs, Fintech literacy specifically pertains to the proficiency these entrepreneurs have in leveraging financial technology to enhance their business operations. It involves acquiring skills and knowledge to strategically integrate fintech solutions, streamline financial processes, and adapt to the evolving digital transaction landscape. Fintech literacy for Woman Micro-entrepreneurs is crucial in the contemporary digital economy, fostering competitiveness, operational efficiency, and delivering a seamless and secure shopping experience for customers. The strategic integration of fintech solutions is vital for driving business growth in the retail sector. In this study, components such as Financial Literacy, understanding of Fintech Products and Services, Security and Risk Management, and Knowledge of Regulatory Compliance are considered as aspects of Fintech Literacy influencing the Financial Performance of Woman Micro-entrepreneurs.

4. Financial Performance

"Financial Performance" involves a comprehensive evaluation of how effectively an organization is meeting its objectives and delivering outcomes across various dimensions. This evaluation encompasses both quantitative and qualitative assessments, considering financial metrics, operational efficiency, customer satisfaction, and other factors contributing to overall success and sustainability. For Woman Micro-entrepreneurs, this evaluation involves analyzing sales revenue, profit margins, inventory turnover, customer satisfaction, and market share, offering insights into their ability to meet customer demands, manage inventory, optimize pricing, and adapt to market trends.

The significant impact of Fintech literacy on the Financial Performance of Woman Micro-entrepreneurs lies in its ability to empower them to adeptly use financial technology tools. Particularly crucial for small businesses like Woman Micro-entrepreneurs, Fintech literacy enables entrepreneurs to strategically manage resources, leveraging financial information to enhance enterprise profitability (Morrison, 2006). Woman Micro-entrepreneurs with high Fintech literacy seamlessly integrate digital payment methods, optimize point-of-sale systems, and utilize analytics for customer insights, thereby accelerating transaction speed, enhancing the customer experience, and improving operational efficiency.

5. Literature Review and Research Gap

Numerous researchers explored the relationship between financial/fintech literacy and Financial Performance across various regions, including India and globally. Fatoki (2014) underscored the significance of financial literacy in equipping entrepreneurs with the requisite knowledge and skills for making informed financial decisions, thereby enhancing the financial health of their businesses. In the realm of financial technology (fintech), Alimirruchi and Kiswara (2017) scrutinized the operational and financial performance of a fintech firm, revealing noteworthy impacts on both fronts.

Rahadjeng et al. (2023) delved into the relationship between financial literacy, financial technology, and financial inclusion, discovering a positive and significant effect of financial literacy on the Financial Performance of SMEs. Similarly, Lontchi et al. (2023) affirmed the positive and significant correlation between fintech, financial literacy, and SME performance, emphasizing the mediating role of financial literacy. Additionally, Dasilas and Karanoviæ (2023) explored the impact of fintech on bank performance in the UK, unveiling positive effects on net interest margin and yield on earning assets.

Despite the abundance of research in these domains, no prior study has specifically analysed the major components of Fintech Literacy and their influence on the Financial Performance of Woman Micro-entrepreneurs in Chennai. This study endeavours to bridge this research gap by offering a comprehensive analysis of these pivotal aspects.

6. Methodology

Employing an exploratory and descriptive research methodology, this study utilizes a mixed-method approach, integrating both qualitative and quantitative analyses. Focusing on female micro-entrepreneurs engaged in consumer goods

and services in Chennai, Convenience Sampling is employed to select 150 Woman Micro-entrepreneurs from diverse backgrounds. Primary data is gathered through a Structured Questionnaire, and a blend of descriptive and inferential statistical techniques. This methodological approach allows for a thorough exploration of Fintech literacy components and their impact on the Financial Performance of Woman Micro-entrepreneurs in Chennai.

7. Woman Micro-entrepreneurs' Perception on the Components of Fintech Literacy – Mean Analysis

To assess the Fintech Literacy perception among Woman Micro-entrepreneurs, a structured questionnaire comprising 12 questions related to four components—Financial Literacy, Fintech Products and Services, Security and Risk Management, and Knowledge on Regulatory Compliance—was administered. The questionnaire utilized a Likert scale format with three statements for each component. Below are the results obtained from the respondents.

Table-1 : Components of Fintech Literacy – Mean Analysis

S. No.	COMPONENTS OF FINTECH LITERACY	N	Mean	RANK
1.	Financial Literacy	150	12.32	FIRST
2.	Fintech Products and Services	150	11.42	SECOND
3.	Security and Risk Management	150	10.01	FOURTH
4.	Knowledge on Regulatory Compliance	150	10.84	THIRD
WOMAN MICRO-ENTREPRENEURS' PERCEPTION ON THE COMPONENTS OF FINTECH LITERACY		**150**	**44.59**	

Source : Primary Data.

Based on the data presented in Table-1, it can be inferred that Woman Micro-entrepreneurs in Chennai exhibit a higher perception of 'Financial Literacy' (M = 12.32) compared to other components of Fintech Literacy, while they perceive 'Security and Risk Management' relatively lower (M = 10.01). The perception of Woman Micro-entrepreneurs on all four components of Fintech Literacy surpasses the average level, as indicated by Mean values exceeding 10 out of 15 (two-thirds). The Overall Mean Score of Woman Micro-entrepreneurs'

Perception on the four components of Fintech Literacy in Chennai is 44.59, equivalent to 74.32% (calculated as 44.59/60 x 100), which signifies an above-average level and is commendable.

Figure-1 : Woman Micro- Entrepreneurs' Perception on the Components of Fintech Literacy
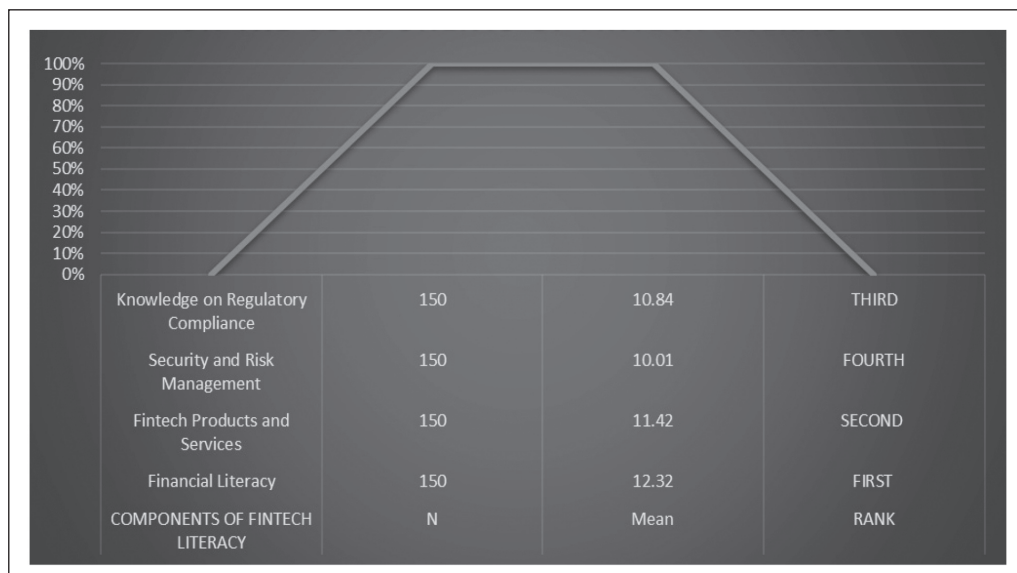
Source : Primary data.

8. Relationship Between Fintech Literacy and Financial Performance of Woman Micro-entrepreneurs

Correlation Analysis

H_0 : There is no significant relationship between Fintech Literacy and Financial Performance of Woman Micro-entrepreneurs.

A Pearson product-moment correlation was run to determine the relationship between Fintech Literacy and Financial Performance of Woman Micro-entrepreneurs.

As the P values are lesser than Sig. Value (0.01) in all the above relationship, the Null Hypothesis is rejected. There is a high positive correlation (r = 0.758) between

Table-2 : Relationship Between Fintech Literacy and Financial Performance of Woman Micro-entrepreneurs

VARIABLE	N	'r' VALUE	P - VALUE	RELATIONSHIP	REMARKS SIGNIFICANT	RESULT
Fintech Literacy - Financial Performance	150	0.758**	0.000	Positive	Significant	REJECTED

**. Correlation is significant at the 0.01 level (2-tailed).
Source : Primary Data.

Fintech Literacy and Financial Performance of Woman Micro-entrepreneurs. Hence, there is a significant relationship between Fintech Literacy and Financial Performance of Woman Micro-entrepreneurs.

9. Impact of Fintech Literacy on Financial Performance of Woman Micro-entrepreneurs

Multiple Regression Analysis

Multiple Regression Analysis was conducted to determine the best linear combination of the Fintech Literacy components for predicting Financial Performance of Woman Micro-entrepreneurs. The combination of all the four independent variables i.e., Fintech Literacy Components, significantly predicts the dependent variable i.e., Financial Performance of Woman Micro-entrepreneurs, $F_{(4, 125)} = 286.354$, *p values are* lesser than 0.01 and 0.05 (Sig. Value 2-tailed) and Adjusted R Square is 0.769 or 77% which is large effect according to Cohen.

Out of four Fintech Literacy components, "Financial Literacy" (0.352) is the strongest influencing component in predicting 'Financial Performance' of Woman Micro-entrepreneurs. From the unstandardized coefficient, it is found that the one unit increase in "Financial Literacy" component would increase the Financial Performance of Woman Micro-entrepreneurs by 0.530 units. Fintech Products and Services (0.248), Security and Risk Management (0.104) and Knowledge on Regulatory Compliance (0.213) components also influence the Financial Performance of Woman Micro-entrepreneurs significantly but lesser than "Financial Literacy".

Table-3 : Fintech Literacy Components – Financial Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.633	.835		1.783	.076
	Financial Literacy	.530	.105	.352	7.236	.000**
	Fintech Products and Services	.273	.112	.248	4.445	.000**
	Security and Risk Management	.155	.128	.104	2.456	.043*
	Knowledge on Regulatory Compliance	.257	.120	.213	3.457	.002**

Dependent Variable : Financial Performance of Woman Micro-entrepreneurs

(1% and *5% Level of Significance)**

Figure-2 : Model Unstandardized Coefficients Standardized
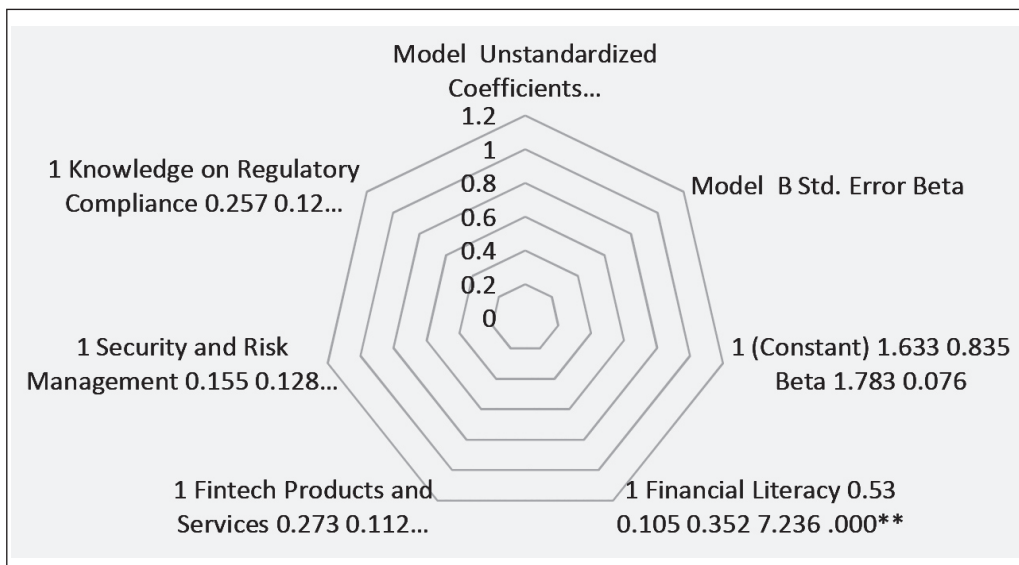
Source : Authors' Compilation.

10. Suggestions

Drawing from the study's findings, it is suggested/recommended that Woman Micro-entrepreneurs persist in investing in training and awareness initiatives to deepen their grasp of financial technology. Special attention should be directed towards refining skills related to "Security and Risk Management" to bolster Woman Micro-entrepreneurs against potential risks inherent in the dynamic Fintech environment. It is essential to establish a continuous evaluation and feedback mechanism. Woman Micro-entrepreneurs should regularly assess the efficacy of Fintech literacy programs, integrating feedback from employees and stakeholders into their improvement processes.

11. Conclusion

The findings of the research emphasize that Woman Micro-entrepreneurs in Chennai demonstrate an above-average perception of the key components of Fintech Literacy. A pivotal conclusion drawn from the research is the robust, positive, and significant correlation between Fintech Literacy and the Financial Performance of Woman Micro-entrepreneurs in Chennai. Upon closer examination of the components, it becomes evident that among the four major aspects of Fintech Literacy, the "Financial Literacy" component exerts a more pronounced influence on Financial Performance. Conversely, the impact of the "Security and Risk Management" component on the overall Financial Performance of Woman Micro-entrepreneurs in Chennai appears relatively weaker. These insights contribute significantly to understanding the interplay between Fintech Literacy components and the Financial Performance of Woman Micro-entrepreneurs within the specific context of Chennai.

This study's analysis addresses the crucial relationship between Fintech literacy and Financial Performance in Chennai, shedding light on the specific competencies required by Woman Micro-entrepreneurs to effectively navigate the evolving Fintech ecosystem. The research findings hold significance for academia, offering valuable insights into the changing dynamics between Fintech literacy and Financial Performance within the consumer goods and services sector. Moreover, it provides practical implications for Woman Micro-entrepreneurs aiming to enhance their operations through strategic Fintech integration, thereby promoting growth and resilience in today's technology-driven marketplace.

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NEP2020 : Outcome Based Education –
Some Empirical Evidences

HEENA SUNIL OZA AND SRF KRISHNA M. KHAMAR

Abstract : *NEP 2020 envisions higher education landscape of Bharat to create human capital that can regain India's legacy of Vishva Guru. Outcome Based Education transforms the traditional education to be learner centric by clearly defining the Outcome expected from the Graduate Program through various courses and their Course outcomes. This paper explores the implementation of OBE in Indian Higher Education institutions imparting Commerce Education using NAAC accreditated HEIs database for selection of 20 HEIs as sample. The Data related to extent of application of OBE is collected from individual website of sample HEI. The findings provide insights into the varying levels of implementation for HEIs, offering valuable insights to effectively implement OBE reforms at HEIs imparting Commerce Education. The strategies to follow in future are discussed to strengthen further the effective implementation of OBE to achieve the vision of NEP 2020.*

Keywords : NAAC Accreditation, NEP 2020, Outcome Based Education, PO-CO Attainment.

1. Introduction and Context of the Study

This National Education Policy 2020 envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower (NEP 2020 p6). It is the first and most contemporary education policy of the 21st century, 34 years after the last Education Policy in 1986. It addresses

Dr. Heena Sunil Oza, Principal, Sheth C.D. Barfiwala College of Commerce, Surat, Gujarat. Mobile : +91 97371 14382. Email : heenaoza@rediffmail.com

SRF Krishna M. Khamar, Research Scholar, Sheth C.D. Barfiwala College of Commerce, Surat, Gujarat (affiliated with Veer Narmad South Gujarat University, Surat.). Mobile : +91 6355032832. Email : krishnakhamar99@gmail.com

to various crises present in India's education system and "expected to play a key role in creating a new India and future-ready youth" (PM Narendra Modi 2021); aligning GSDG 4 goal by pioritizing the need for high-quality education that is inclusive, multidisciplinary, and oriented towards holistic development (NEP 2020 p.3); to strengthen the economic and social indicators to promote sustainable human and environmental development (NEP 2020).

Among many other changes the policy's vision includes two most relevant key changes to the current education system namely (1) moving towards faculty and institutional autonomy and (2) revamping curriculum, pedagogy, assessment, and student support for enhanced student experiences (NEP 2020 clause 9.3, p.34)

To achieve the institution autonomy NEP 2020 has directed a stage-wise mechanism for granting graded autonomy to colleges, through a transparent system of graded accreditation, to be established. Colleges will be supported, encouraged, mentored, and financially motivated to progressively meet the minimal standards needed for each accreditation level. Every college is expected to grow into either an autonomous college that grants degrees over time or a constituent college of a university, in which case it would become an integral component of the institution. If they so choose, autonomous degree-granting colleges might develop into research- or teaching-intensive universities with the right accreditations. (NEP 2020; Clause 10.4, pp.34-35) and phase down the "affiliated colleges" system over a fifteen-year period using a graded autonomy system; the latter should be implemented in a challenge mode.

In order to make the system fairer and the results more comparable, HEIs will use a criterion-based grading system that evaluates student success in accordance with the learning objectives for each program. Additionally, HEIs will transition from high-stakes exams to more ongoing and thorough review. (NEP 2020; p.38; clause 12.2)

Thus, NEP 2020 emphasis a shift from traditional education system to outcome based education (OBE) system. The following section discusses the salient features of OBE and how it's different from the traditional education system.

2. Outcome Based Education

The educational approach known as outcomes-based education, or OBE, centers all aspects of a system of instruction on objectives, or outcomes. By the time the educational experience ends, every student ought to have accomplished the

objective. OBE does not have a single prescribed method of instruction or evaluation; rather, all classes, activities, and evaluations should support students in achieving the predetermined goals. Depending on the desired results, the faculty member's position changes to that of an instructor, trainer, facilitator, and/or mentor.(Spady, William 1994)
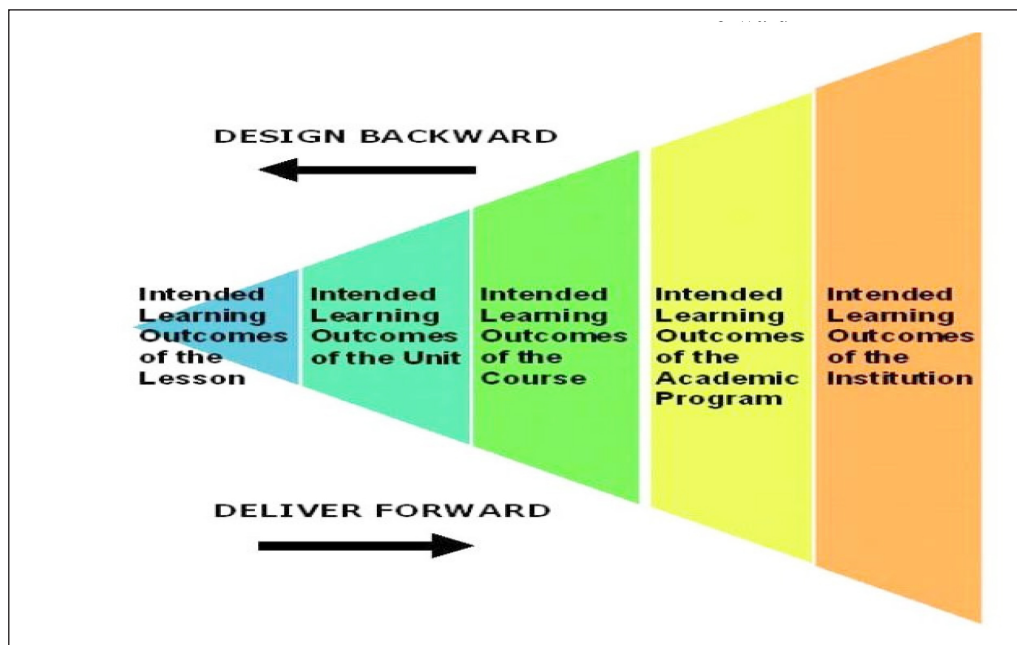
The Benefits of OBE include Clarity about a clear expectation of what needs to be accomplished by the end of the course; Flexibility to structure their lessons around the student's needs; Comparison or performance and outcomes and active involvement of learner.

The OBE is implemented by a systematic process starting with defining outcomes, measurement of CO and PO attainment and finally measurement of PEO and Graduate attributes as shown in Figure-1 to deliver forward as

Figure-1 : OBE Framework
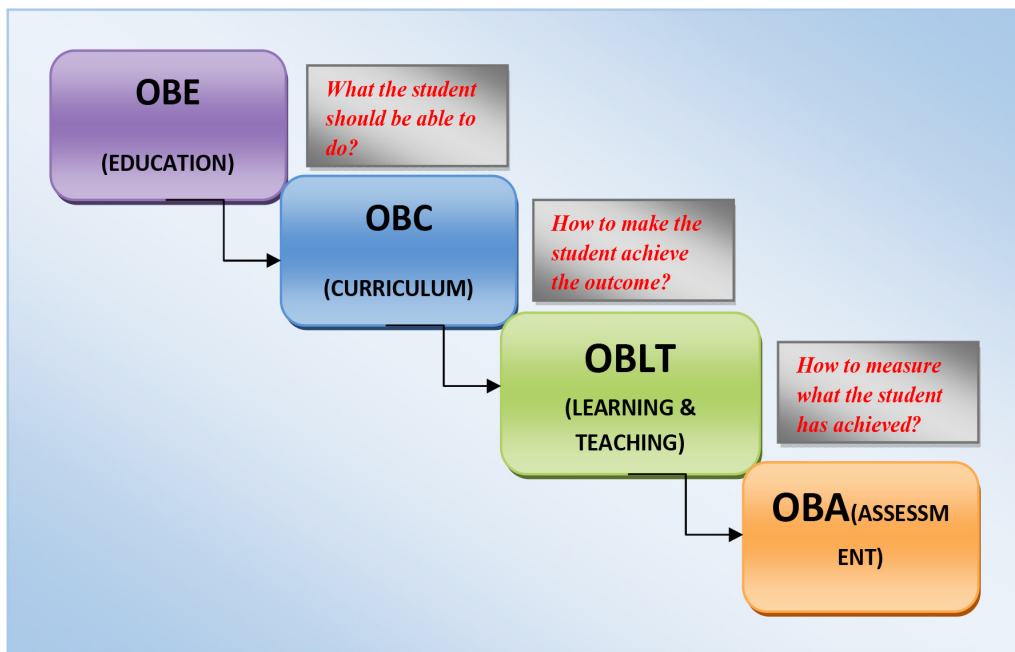
Source : M. Jaykumar. (n.d.).

Figure-2 : OBE Design of Deliver Forward

Traditional method of education in HEIs is Teacher centric where the goal of this education is to present the knowledge and skills of an older generation to the new generation of students, and to provide students with an environment in which to learn. The process paid little attention (beyond the classroom teacher) to whether or not students learn any of the material Constance Kamii & Ann Dominique 1998). The traditional education system is input oriented where the HEIs are assessed in terms of faculty qualification, books & journals, classroom facilities. Majority of the time, faculty controlled teaching methods, students role is marginal leading to rote learning. The system Assumes all are motivated, have same prior knowledge and interest level is same. The standardization in teaching methods and assessment and ignores the variation in learning pace of learners.

Three key components set OBE apart from typical education methods: a systematic framework for education, a particular approach to instructional practice, and an educational theory. (Killen, Roy (2007) It organizes the entire educational system towards what are considered essential for the learners to successfully do at the end of their learning experiences. Uys, Leana; Gwele,

Nomthandazo (2005) In this model, the term "outcome" is the core concept and sometimes used interchangeably with the terms "competency, "standards, "benchmarks", and "attainment targets". Uys, Leana; Gwele, Nomthandazo (2005) OBE also uses the same methodology formally and informally adopted in actual workplace to achieve outcomes. (Meyer, Salomé M.; Niekerk, Susan E. Van 2008)It focuses on the following skills when developing curricula and outcomes. It focuses on Life skills; Basic skills; Professional and vocational skills; Intellectual skills; and Interpersonal and personal skills(Meyer, Salomé M.; Niekerk, Susan E. Van 2008).

Figure-3 : Difference in Traditional Education System and OBE System
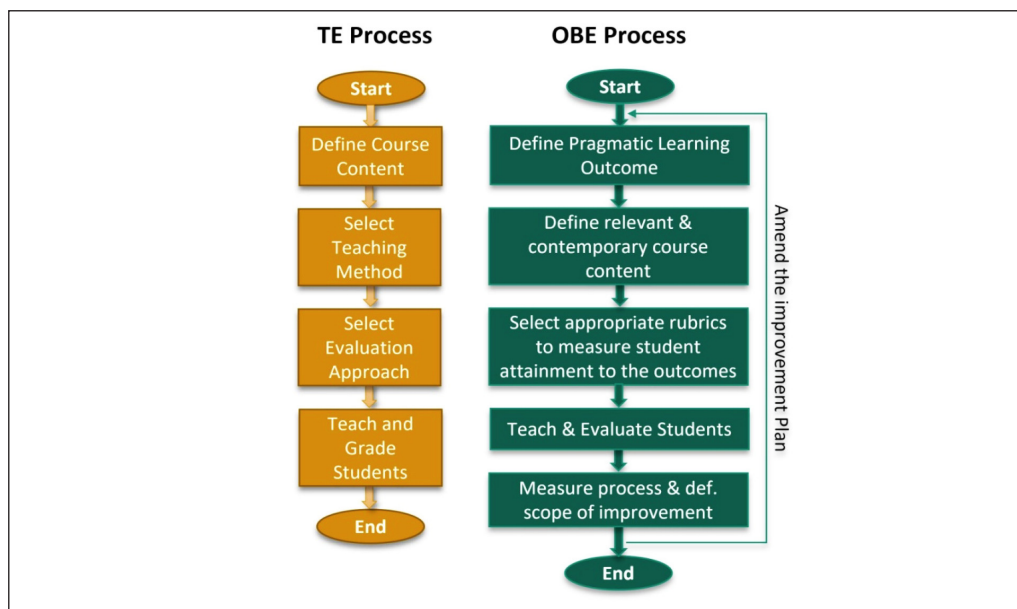
Source : Mahnunul Syeed et. al. (2023)

3. Research Objectives

The Washington Accord is an agreement that was made in 1989 to accept degrees in undergraduate engineering that were earned via the use of OBE techniques. India is also one of the signatioes of the said accord. At present professional courses like engineering and MBA programs are certified by NBA in India. Also the HEIs from other faculties like Arts, Commerce (known as general stream also) and Science faculty have some exposure due to NAAC accreditation

assessing the HEIs on OBE aspect though not mandated like professional courses of Engineering and management in pre NEP 2020 paradigm.

The present paper attempts to explore the current scenario of extent of application of OBE in HEIs imparting Commerce Education. Commerce education is of growing importance as Bharat aspires to be one of the largest economies of the world therefore; the quality of human resource development in this faculty is of crucial importance. Accordingly the study has following research objectives:

1. To explore the implementation of OBE in Indian Higher Education institutions imparting Commerce education

2. To suggest strategies to follow in future in order to strengthen effective implementation of OBE to achieve the vision of NEP 2020.

4. Research Methodology

The official website of NAAC was visited to obtain a list of Affiliated PG colleges (UG and PG Colleges) and Autonomous colleges that have been accredited from January 1, 2023, to October 31, 2023. There were two separate lists extracted: one for colleges that are affiliated with universities that provide post-graduate programs and another for autonomous colleges. The former consisted of 70 colleges; the latter had 96 colleges. The official website of all the colleges on the list was visited to exclude colleges that do not provide commerce programs from the current list. A few colleges were removed from the list as their websites were not accessible at the moment. There were 48 affiliated PG colleges and 48 Autonomous colleges that offer programs in commerce whose results were declared within the given time frame. In all 10 Colleges from each category which hare engaged in Commerce education were taken as sample for this study using systematic random sampling. For this, the colleges were arranged in sequential order according to their AISHE ID. From both lists, colleges that come in 1st, 6th, 11th, 16th, 21st, 26th, 31st, 36th, 41st, and 46th place in the sequence, i.e., keeping an equal interval and including every 5th ordered college in the sample for the study, were taken as samples. In all 10 HEIs from each category totaling 20 HEIs are selected as sample.

After selection of sample colleges the website of each college was explored to know the extent of OBE applied in HEI giving the following score. Score 0: If no information of Pos and COs available on website of HEI.

Score 0 : If information of Pos and COs not available on website.

Score 1 : If the website of the selected HEIs displays their PO, PSO and COs only (and the course objectives are renamed as COs).

Score 2 : If the website of the selected HEIs is displaying POs, PSOs and COs and they are as required by OBE.

Score 3 : If the website of the selected HEIs displays the attainment of these POs, PSOs, and COs on their websites.

5. Findings of the Study

Table-1 shows the summary of scores for 10 affiliated HEIs, 10 Autonomous HEIs and total 20 HEIs and also weighted average score of Affiliated HEIs; Autonomous HEIs and their combined weighted average score. Table 2 shows HEI wise score as per NAAC accreditation score.

Table-1 : Table Showing Score and Weighted Average Score of Affiliated HEIs, Autonomous HEIs and Combined Score

Score	Affiliated HEIs		Autonomous HEIs		Total HEIs		
	No. of HEIs	Weighted Score	No. of HEIs	Weighted Score	No. of HEIs	Weighted Score	% of HEIs
0	3	0	1	0	4	00	20%
1	2	2	2	2	4	04	20%
2	2	4	6	12	8	16	40%
3	3	9	1	3	4	12	20%
Total	10	15	10	17	20	32	100%
Average		1.5		1.7`		1.6	

As shown in Table-1 and Graph-1 the weighted average score of all HEI is 1.6 out of 3 meaning the extent of OBE implementation is between score 1 (HEIs display their PO, PSO, and COs only (and the course objectives are renamed as COs) and score 2 (HEIs are displaying POs, PSOs and COs and they are as required by OBE) with individual weighted average score of 1.5 for affiliated colleges and 1.7 for autonomous colleges. In terms of percentage 20% of HEIs have not implemented OBE at all; 20% HEIs have framed the POs, and COs ; 40% HEIs have framed POs and COs as required by OBE system and 20% HEIs have done PO-CO attainment analysis which is crucial to achieve the results expected from OBE system.

Graph-1 : Graph Showing Number of Affiliated, Autonomous and Total Colleges in Different Score Category
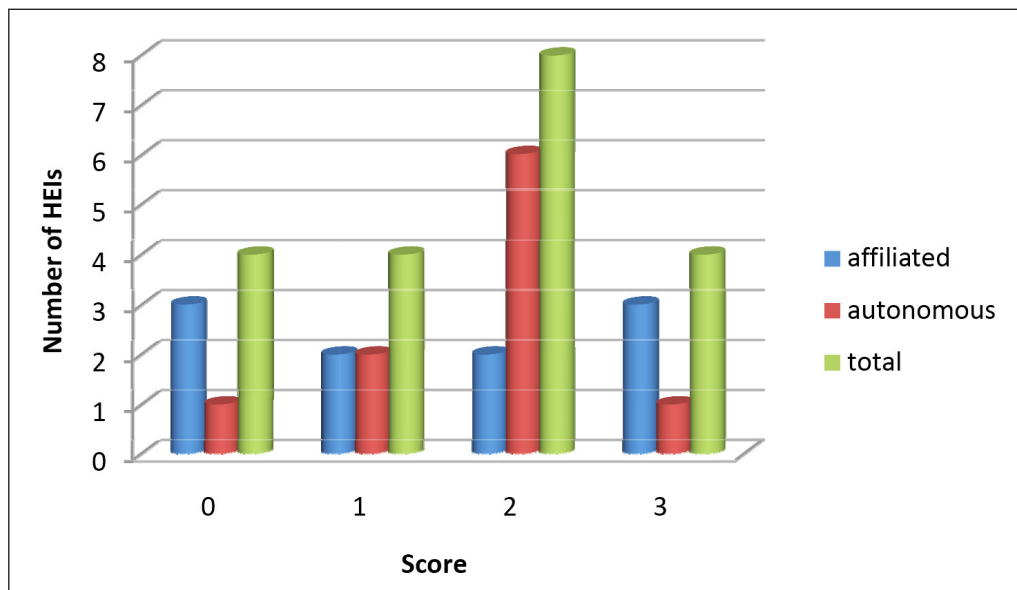

Table-2 : Table showing NAAC Accreditation Category Wise Score for Each HEI in Affiliated HEI Category and Autonomous HEI Category

Score	Affiliated HEIs		Autonomous HEIs	
	No. of HEIs		No. of HEIs	
0	3	C Grade =1	1	A+ Grade = 1
		B Grade =2		-
1	2	B++ Grade =2	2	B+ Grade = 1
		-		B++Grade = 1
2	2	B++ Grade =1	6	B+ Grade = 1
		B Grade =1		A Grade = 2
		-		A++ Grade = 3
3	3	B Grade =1	1	A Grade = 1
		A+ Grade = 2		-
Total	10		10	

As shown in Table-2 and Graph-2 and 3, in the set of autonomous colleges and PG colleges, it was observed that the grades and the scores of the colleges go hand in hand bearing a few exceptions (College number 36 affiliated college and College number 16 and 21in autonomous colleges. There was only one

autonomous commerce college that scored 3, and the NAAC accreditation grade was A. Three colleges with A++ grades, one with A+, one with A, and one with B+ have scored 2. There were two colleges that scored 1, and their NAAC accreditation grades were B++ and B+. In the case one college which has A+ grade has uploaded well framed POs, PSOs, and COs for all other programs but not for B.Com so its score is 0.In affiliated PG Commerce colleges, there were three colleges that scored 3: two with an A+ and one with a B. Two colleges with NAAC accreditation grade B and one with grade C scored 0. There were three colleges that were accredited with B++; one of them scored 2, and the other two scored 1. One college with NAAC accreditation grade A scored 2.

A graphical representation in Graph-2 and 3 shed light on significance of presentation of program outcomes, program specific outcomes and course outcomes for getting higher grades. This is very clearly observed in graph-2 and graph-3. In both the graphs X axis represents order of the college and Y axis represent grade and score. For this purpose the grades were converted in to numerical values as grade C=1; B =2; B+ = 3; B++ = 4; A = 5; A+ = 6 and A++ = 7to make input of alphabetical grades into graph showing numerical values. In both the graphs red line shows score and blue one shows grade.

Graph-2 : Graphical Representation of Comparison of Grades and Score of PG Commerce Colleges
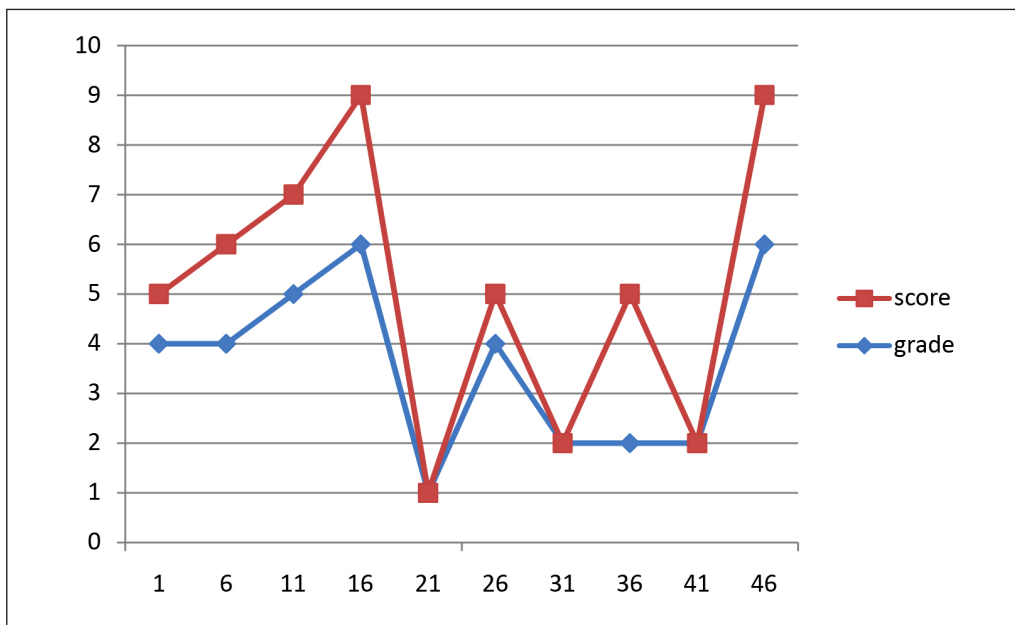
Graph-3 : Graphical Representation of Comparison of Grades and Score of Autonomous Commerce Colleges
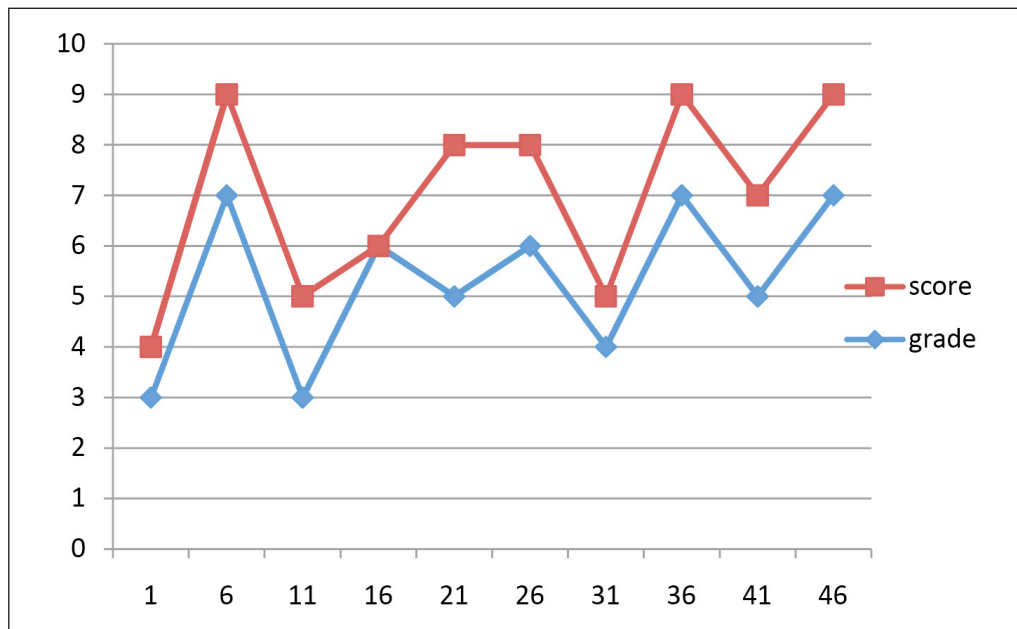
6. Discussion

The study gives important insight about the current scenarios of implementation of OBE in HEIs imparting Commerce education. The study indicates that to make OBE successful a lot has yet to be done by majority of HEIs. The findings reveal that a lot needs to be done for achieving full potential of OBE in HEIs imparting Commerce education.

To decide the strategies about what needs to be done the two important empirical findings are relevant as mentioned hereunder.

In a study by Mohd Yasir et. al (2023) using PESTEL Analysis to identify and statistically rank the biggest obstacles to NEP-2020 implementation in India, the findings show that social and economic factors, with 84% and 60% respectively play a significant role while political and technical factors are also important and come in second place since they each represent 25% and 34% of the barriers to the implementation of the NEP-2020.

Further the empirical findings on factors affecting the application of OBE by Md Shahadat Hossain Khan et. al. (2023 show that depends on many aspects

including (a) Students' awareness, (b) Teachers' commitment, (c) Institutional support, (d) Perceived easiness, (e) Students' motivation and (f) Self-efficacy.

Thus, based on the empirical findings, the authors propose the following strategies to improve the efficacy of OBE system by HEIs in collaboration with HEIs and policy makers and regulatory bodies.

Strategies to Improve the Efficacy of OBE System

Teachers' preparedness :
*Massive scale awareness programs on OBE to unlearn traditional methods and embrace OBE philosophy is a starting point to make the OBE work
*Seminar and workshop by experts in the fileds for Capabilities development for identifying end program outcomes in collaboration with industries, alumni, students and peers and leaders in the society.
followed by workshops for framing syllabus, assessment and teaching padagology reqd for OBE
*Hand-holding/paramash scheme of UGC for hands on support in capabilities development for measuring CO-PO attainment/ OBE.

Students' preparedness
*Massive scale awareness programs at Higher secondary level itself Training from Class 11 in school/ career counseling guidance for OBE based UG/ PG programs and making the students aware of how to assess the outcomes of programs and select one's career path.
*Publishing the outcomes on websites of HEIs for easy access by prospective students and other stakeholders

HEI support / Academic Administrators
*Encourage OBE implementation by resource allocation, training, workshop, physical infrastructure, ICT infrastructure and so on
*Resource allocation for OBE based teaching padagology, assessment, teaching-learning
*Resource allocation for installation of ERP program for mapping PO- CO attainment for students and programs
Training of support staff

Regulatory authorities' support
*Organize awareness programs for different stakeholders
Organizing training and workshops on OBE
*Reducing the students –teacher ratio to make effective changes in syllabus, teaching padagology, assessment
*Gradual shift of academic autonomy to HEIs for successful implantation of OBE paradigm

Parents/ Society/ media
*Awareness programs
*Support the new education system to achieve its fruits for the youth and nation

Industries/Trade and business associations
*Awareness programs
*Active collaboration with HEIs for OBE implementation

Once the HEIs are able to apply OBE to traditional method of teaching, the next iteration they can be encouraged to go for autonomous status enabling them to frame syllabus and learning and assessment methods to suit the attainment of OBE. The autonomous HEIs can evolve further as envisioned by NEP 2020 to evolve further for imparting quality education.

7. Conclusion

The previous studies on OBE success especially outside India shows mixed results. The NEP 2020 has advocated the Indian version of OBE rather than using Bloom's taxonomy in totality. As the Indian HEIs imparting Commerce education get maturity in using OBE in iteration, they should further evolve the Indian version of OBE to achieve the vision of NEP 2020.

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Office Bearers of ICA

Prof. K. S. Thakur
President – ICA,
Hon'ble Vice-Chancellor
Govind Guru Tribal University,
Banswara

Prof. Ajay Kumar Singh
Past President - ICA, Senior Professor, Head & Dean
Department of Commerce, Faculty of Commerce and
Business, Delhi School of Economics
University of Delhi, Delhi.

Prof. M. Jayappa
Vice President & 76th Conference Secretary – ICA,
Former Principal, RBANMS First Grade College,
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Dean, Faculty of Commerce
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Department of Applied Economics & Commerce
Patna University

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Managing Editor, Indian Journal of Commerce
Treasurer - ICA
Head, Department of Commerce
Osmania University, Hyderabad

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