ISSN: 0973-9335 • July-September, 2023 • Volume 28 • Issue 3

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The Journal of Indian Management & Strategy

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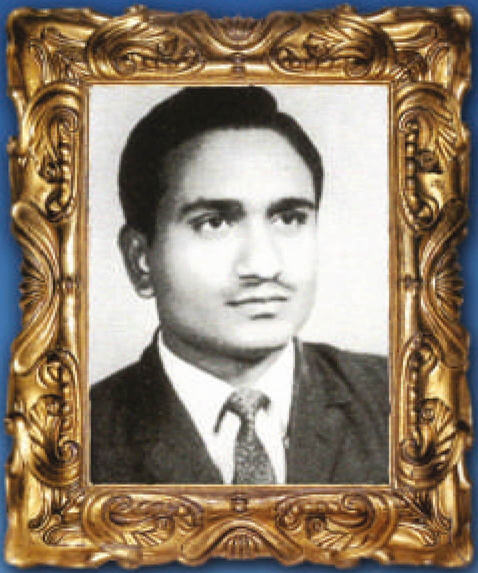
A TRUE VISIONARY

"You see things and you say **Why***? But I dream of things that never were and say* **Why** *not?"*

- George Bernard Shaw



Shri Jagannath Gupta
(1950 - 1980)

Also a true visionary...who dared to dream!
He lives no more but his dreams live on....and on!

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And more dreams to come!

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Available Online at www.indianjournals.com
RNI No. 64562/96
Online ISSN No: 0973-9343
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Editor's Desk

India's Phenomenal Decade of Growth: A Journey of Progress and Potential

In the span of the last decade, India has emerged as a global economic powerhouse, orchestrating a remarkable transformation that has left the world in awe. The nation's growth trajectory over these years has been nothing short of phenomenal, propelling it to the forefront of the global stage. As we reflect upon India's journey of the past decade, it becomes evident that the nation's growth has been multifaceted, encompassing economic, technological, and societal dimensions. Economic Metamorphosis: Over the past ten years, India's economy has undergone a significant transformation. The adoption of pro-business policies, economic reforms, and emphasis on entrepreneurship has led to a substantial increase in foreign direct investment. The 'Make in India' initiative spurred manufacturing and contributed to the nation's position as a manufacturing hub. Sectors like information technology, pharmaceuticals, and renewable energy have flourished, creating new avenues for growth and employment. India's consistent GDP growth rate has bolstered its status as one of the world's fastest-growing major economies. Technological Advancements: In the technological sphere, India has rapidly advanced, leveraging its vast pool of skilled IT professionals. The 'Digital India' campaign has fostered digital literacy and access to technology across the country, narrowing the urban-rural divide. India's software services have been instrumental in driving global innovation, and the startup ecosystem has witnessed a surge, with a flurry of unicorns making their mark on the global stage. The 'Atmanirbhar Bharat' initiative has further underscored the country's commitment to technological self-reliance. Societal Progress: The last decade has seen significant societal progress in India. There have been substantial improvements in sectors such as healthcare, education, and women's empowerment. Initiatives like 'Swachh Bharat Abhiyan' have led to enhanced sanitation and cleanliness, impacting the quality of life for millions. While challenges remain, the nation has shown its resilience in addressing issues like poverty, malnutrition, and access to basic amenities. Geopolitical Significance: India's growth over the last decade has not only benefited its citizens but also positioned the nation as a crucial player on the global stage. Strengthening diplomatic ties, trade relationships, and international collaborations have enhanced India's geopolitical significance. The 'Act East' policy has deepened India's engagement with Southeast Asian nations, while the nation's role in forums like BRICS and G20 has grown in prominence. Challenges on the Horizon: As India charts its path forward, there are challenges that need attention. Income inequality, environmental sustainability, and infrastructure development are pressing concerns that require concerted efforts. The country must ensure that growth is inclusive and benefits every stratum of society. In conclusion, India's growth story of the last decade is a testament to the nation's resilience, adaptability, and potential. The strides made in the economic, technological, and societal realms have positioned India as a global leader, poised to shape the course of the 21st century. However, with great progress comes great responsibility. As India continues its journey, it must remain committed to sustainable growth, social equity, and international collaboration, thus ensuring that the next decade is even more transformative and generative.

(**Madhu Vij**)

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CHANGING FINANCIAL LANDSCAPE THROUGH MUDRA YOJANA – A JOURNEY TOWARDS ENTREPRENEURIAL ECOSYSTEM

Vikram K. Joshi*

Purpose: *The government of India launched Pradhan Mantri Mudra Yojana (PMMY) on 8 April, 2015 to fund the unfunded. This initiative has high potential to change the entrepreneurial ecosystem in country and achieve economic inclusion of the informal sector members. Hence, the study is proposed to evaluate the said potential of the initiative.*

Design/Methodology/Approach: *The study is descriptive study based on primary data of 288 Mudra loan beneficiaries and 42 bank officials of Nagpur district of Maharashtra State, India. The data collected was quantitative based on various attributes using a structure questionnaire for beneficiaries pre and post-Mudra loan and bank officials to evaluate the impact of Mudra loans on Entrepreneurial activity of small and informal businesses.*

Findings: *The analysis shows that the beneficiaries in Nagpur district received loans as per their requirements. The employment, average salary paid, number of suppliers, monthly purchases from suppliers, investment in fixed capital and approximate profits all have increased significantly in all the categories of Mudra loan and in overall Nagpur district post-Mudra loans and created good expansionary effect for businesses.*

Originality/value: *A new process of Loan disbursal is recommended to avoid the leakage in the process and avoid possible defaults. The new process can help not only to achieve the financial inclusion, but also will create an entrepreneurial ecosystem that will foster equity for every participant member.*

Key Words: *Informal Businesses, Formal Banking System, Pradhan Mantri Mudra Yojana.*

JEL Classification Code: *E26, E51, I38*

The Economic Survey of 2018-19 released on July 4, 2019 mentioned that almost 93% of the total workforce is informal. According to Niti Aayog's Strategy for New India at 75, released in November 2018, 'India's informal sector employees approximately 85% of all workers'. ILO in its recent report says that close to 81% of all employed persons in India make a living by working in the informal sector. Unfortunately, the members of this sector have suffered through economic exclusion even after 30 years of globalization era which is evident from the fact that Crisil Inclusix Index registered the score of 50.1 at the end of fiscal 2013 and increased marginally to 58.0 at the end of FY16 (Crisil Inclusix Report 2018). To ensure the effective participation of these economic agents and to give boost to the economic activity, it is necessary to change the economic architecture of the country. This demands for evolving a mechanism where money-deficient informal sector gets an access to money through formal banking system. Identifying the gap rightly, the Government of India launched Pradhan Mantri Mudra Yojana (PMMY) on 8 April 2015. Under this initiative a new institution called Micro Units Development and Refinance Agency Bank (MUDRA Bank) has been set up for the development of micro units and refinance of Micro Finance Institutions (MFIs) to encourage entrepreneurship in India & provide the funding to the non-corporate small business sector. The initiative has completed more than 5 years of operations and hence it is necessary to evaluate the performance of PMMY initiative from the perspectives of beneficiaries who are at the receiving end. The present study tries to address the following research questions: RQ1: Whether the initiative has contributed significantly in employment generation, business and profit expansion? RQ2: How much is the contribution of the initiative in creating startup and entrepreneurial ecosystem through expansionary effect it has created in the market in terms of employment, income and profit growth? RQ3: Are there any leakages in the loan disbursal process? RQ4: What should be the model for better deliverables? The study is presented in six sections: Section I reviews the performance of initiative based on Mudra data, Section II presents the summary of literature review, Section III discusses the data and methodology, Section IV discusses the performance of the initiative from beneficiaries' perspective, Section V presents the new process evolved from the study and Section VI concludes.

Review of Performance of PMMY during 2015-20

Under the Pradhan Mantri MUDRA Scheme, MUDRA Bank has launched its three-initiative products: MUDRA Bank Shishu Loans up to Rs 50,000; MUDRA Bank Kishor Loans between Rs 50,001 and Rs 5 lakh & MUDRA Bank Tarun Loans of Rs 5-10 lakh. They signify the stage of growth and funding needs of the micro units or entrepreneur.

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The scheme has a total corpus of Rs 20,000 crore which can lend between Rs 50,000 and Rs 10 lakh to small entrepreneurs and banks and Micro-finance institutions can draw refinance under the MUDRA Scheme after becoming member-lending institutions of MUDRA. A brief review of performance of PMMY initiative based on Mudra data is presented below:

Credit Accounts Opened & Amount Disbursed under PMMY

The credit accounts opened and amount disbursed under PMMY during the year 2015-16 to 2019-20 in 36 States /Union territories of India is presented in table 1:

Table 1: MUDRA Loan – Credit A/Cs & Amount Disbursement

	No. of Credit Accounts Opened (India)				**Women**	**New Entrepreneur A/Cs**	**SC / ST / OBC**
Year	**Shishu**	**Kishore**	**Tarun**	**Total**			
2015-16	3,24,01,046 (92.89)	20,69,461 (5.93)	4,10,417 (1.18)	3,48,80,924 (100)	2,76,28,265 (79.21)	1,24,74,668 (35.76)	1,84,01,499 (52.75)
2016-17	3,64,97,813 (91.93)	26,63,502 (6.71)	5,39,732 (1.36)	3,97,01,047 (100)	2,91,46,894 (73.42)	99,89,470 (25.16)	2,25,00,194 (56.67)
2017-18	4,26,69,795 (88.65)	46,53,874 (9.67)	8,06,924 (1.68)	4,81,30,593 (100)	3,35,58,238 (69.72)	1,25,59,327 (26.09)	2,62,24,114 (54.49)
2018-19	5,15,07,438 (86.90)	66,06,009 (11.15)	12,56,871 (2.96)	5,92,70,318 (100)	3,70,62,562 (62.53)	1,33,93,802 (22.60)	2,81,35,095 (47.47)
2019-20	5,44,90,617 (87.54)	64,71,873 (10.40)	12,85,116 (2.06)	6,22,47,606 (100)	3,91,03,349 (62.82)	1,19,13,903 (19.14)	2,97,50,100 (47.79)
Growth	13.63 %	42.54 %	42.62 %	15.69 %	8.30 %	-0.89 %	12.33 %
	Amount Disbursement (In Rs Crores)						
2015-16	62,027.69 (46.65)	41,073.28 (30.89)	29,853.76 (22.45)	1,32,954.73 (100)	63,190.43 (47.53)	58,908.08 (44.31)	49,196.33 (37.00)
2016-17	83,891 (47.85)	51,063.12 (29.13)	40,357.13 (23.02)	1,75,312.13 (100)	78,249.77 (44.63)	69,973.96 (39.91)	66,279.82 (37.81)
2017-18	1.04,228.05 (42.29)	83,197.09 (33.76)	59,012.25 (23.95)	2,46,437.41 (100)	1,00,170.55 (40.65)	93,656.61 (38.00)	83,686.97 (33.96)
2018-19	1,39,651.55 (44.79)	99,868 (32.03)	72,291.84 (23.18)	3,11,811.38 (100)	1,29,153.23 (41.42)	1,00,925.58 (32.37)	98,023.68 (31.44)
2019-20	1,62,813 (49.38)	91,427 (27.73)	75,475 (22.89)	3,29,715 (100)	1,42,846.22 (43.32)	94,896.09 (28.78)	1,12,029.49 (33.98)
Growth	32.49 %	24.52 %	30.56 %	29.59 %	25.21 %	12.21 %	25.54 %
	Average Amount Disbursement (In Rs)						
2015-16	19,143.73	1,98,473.32	7,27,400.66	38,116.75	22,871.66	47,222.16	26,734.95
2016-17	22,985.45	1,91,714.21	7,47,725.35	44,158.06	26,846.69	70,047.72	29,457.44
2017-18	24,426.66	1,78,769.53	7,31,323.52	51,201.82	29,849.76	74,571.36	31,912.22
2018-19	27,112.89	1,51,177.51	4,11,480.63	52,608.35	34,847.35	75,352.45	34,840.35
2019-20	29,879.09	1,41,268.22	5,87,301.10	52,968.30	36,530.43	79,651.55	37,656.84

Source: Author's Computation on the basis of PMMY Overall Performance Report 2015-16, 2016-17, 2017-18, 2018-19 & 2019-20. Mudra Bank (www.mudra.org.in)

() – represents percentage of total.

As seen in table 1, the total credit accounts opened has almost doubled and the total amount disbursed has tripled during 2015-16 to 2019-20, i.e., in just 5 years' time. The simple growth rate is calculated for the same and it is observed that the total number of credit accounts opened increased at 15.69% and the amount disbursed increased at 29.59% during the same period. The credit accounts opened increased at higher rate for Kishore (42.54%) and Tarun (42.62%) compared to Shishu (13.63%), but the amount disbursed increased at higher rate for Shishu (32.49%) compared with Kishore (24.52%) and Tarun (30.56%).

In case of Women and SC/ST/OBC it increased with good numbers but increase is relatively low for New Entrepreneurs. Secondly, during 2018-19 to 2019-20, the number of accounts opened in Kishore, Tarun and New Entrepreneurs category has declined, but increased in case of Shishu and for Women & SC/ST/OBC category. It is noteworthy that pandemic situation erupted in India during February-March 2020. However, the rise in credit a/cs opened in Shishu, Women and SC/ST/OBC is indicative that the decline in Kishore and Tarun category loans cannot be attributed to the impact of pandemic.

Thirdly, the percentage of credit accounts opened and the loan amount disbursed is highest in Shishu followed by Kishore and Tarun category during 2015-16 to 2019-20. But, the average loan amount disbursed increased in Shishu, but declined in Kishore and Tarun loans during the same period. Also, the percentage of credit a/cs opened by Women and SC/ST/OBC seems to high but, the percentage of amount disbursed seems to be less, whereas the percentage of credit accounts opened is relatively high in comparison with the loan amount disbursed. Thus, it can be inferred that most of the loans given to Women and SC/ST/OBC are Shishu loans, as the average amount disbursed to Women (Rs 22,871.66 – 36,530) and SC/ST/OBC (Rs 26,734.95 – 37,656.84). But the average loans given to New Entrepreneurs (Rs 47,222.16 – 79,651.55) include mostly the beneficiaries of Kishore and Tarun loans since the maximum limit of Shishu loan is Rs 50,000.

Thus, looking at the higher percentage of credit accounts opened and loan amount disbursed in Shishu category, it can be drawn that the micro and small businesses which were denied credit by formal banking system are benefited most by this initiative. The women entrepreneurs are also adequately served by the initiative which is evident from the rise in average amount disbursed to them. Also, the financial needs of the budding entrepreneurs belonging to SC/ST/OBC category is also fairly addressed.

I. Review of Literature

The summary of various similar initiatives is presented below that are taken by the other countries to uplift the members of informal sector and micro and small enterprises and its comparison is done with MUDRA Loan initiative:

Table 2: Funds in Other Countries catering to SMEs – Criteria & Activities

SN	Name of Fund /Country/Year	Referred Studies	Criteria	Activities / Remarks	MUDRA Loan
1	**PCF – People's Credit Fund Vietnam (July 1993)**	• Seibel and Thac, 2012 • SBV, Annual Report, 2018	• To fulfil the needs of the poor and marginalize classes. • Offers tailor-made affordable financial products. • Collaterals required.	• Training provided to the members.	• Fulfils the needs of poor and marginalize classes with affordable financial products. • Collateral free. • No training component.
2	**Uwezo Fund – Kenya (Published on 21 February, 2014)**	• Uwezo Fund • Uwezo Fund Guide, 2013 • Otieno, 2014 • Olima, 2016	• Disbursed to group or Institutions with members aged between 18-35. • Collaterals required. • Eligible qualifying amounts for a group shall be minimum of Kshs 50,000 and a maximum of Kshs 500,000 at any one time.	• Training provided to groups. • Training certificates are issued. • Offers non-financial services like – information, skills and mentorship.	• Disbursed to individuals. • No collaterals. • Three loan products: Shishu upto Rs 50,000, Kishore upto Rs 5 lakhs and Tarun upto Rs 10 lakhs. • Top-up loan can be taken after 1 year in case of prompt repayment. • No training. • No non-financial services.
3	**KUR – Kredit**	• International	• Designed for MSMEs	• For KUR Mikro,	• In Mudra: Shishu

	Usaha Rakyat – Indonesia (2007)	Finance Corporation Report, 2016; Bank Mandiri • The Jakarta Post, 2019	who have feasible business but are not bankable. • Collateral Free Loan for KUR mikro and KUR migrant workers. Security required for KUR Retail.	Indonesian rupiah 25 million, max tenure 2 years, for KUR Migrant, Indonesian rupiah 25 million, max tenure 12 months, for KUR Retail, between Indonesian rupiah 25-500 million, max tenure 3-5 years.	upto Rs 50,000, Kishore upto Rs 5 lakhs and Tarun upto Rs 10 lakhs. • Max teneure 5 years. • After one loan repayment, another Mudra loan can be taken. • Collateral free loans. • For micro, small and informal businesses.
4	**SEFA – Small Enterprise Finance Agency – South Africa (1 April, 2012)**	• Zeleke Worku, 2016 • SEFA Fund • Leadership Magazine, April 2017 • SEFA Services	• Caters to the financial needs of informal and micro entrepreneurs • Collaterals required • Survivalists and microenterprises – Loans between R500 and R5000. • Small Enterprises – Loans between R50000 and R1million. • Medium Enterprises – Loans between R1 million and R5 million.	• Offers skill-based training on entrepreneurial activities. • Offers post loan business support and institutional strengthening support during the life cycle stages of the business.	• Caters to the financial needs of micro, small and informal businesses. • No skill-based training. • No non-financial business support.
5	**SMEDCO – Small and Medium Enterprise Development Corporation – Zimbabwe (Formed in 1983, amended in Feb. 2014)**	• Reserve Bank of Zimbabwe • Zeparu & Baz, 2014 • SMEDCO	• Caters to members of informal sector. • Provides Microloan - $500 and less, tenure 4 months, moveable property is collateral. • For loans within the threshold of $501-$5000, collateral security & business plan or proposal.	• Vocational and technical training is provided to rural enterprises.	• Caters to the financial needs of micro-small and informal businesses. • Collateral free with max tenure of 5 years. • No training.
6	**FAMPE – Fundo de Aval para as micro e-pequenas Empresas – Brazil (1996)**	• Roberto Zavatta, 2008 • ILO, 2014 • SABREA, Small Business Experts	• Caters to the needs of informal business activities. • Collaterals required. • Provides guarantees typically up to US$40,000, the guarantee can cover up to 50% of the value of the loan, but in some special cases the limit can be raised to 80%.	• Offers financial and non-financial support in the form of entrepreneurial education, promoting, production and competitive environment for small business linkages between small and large	• Caters to the financial needs of micro, small and informal businesses. • Collateral free. • No non-financial support is provided.

				companies.	
7	**YSEF – Youth Self Employment Fund – Nepal (2009)**	• YSEF, Government of Nepal • Chaudhary & Manoj Kumar, 2018 • Shrestha, 2020	• Offers educated and uneducated unemployed youth in the age group of 18-50 years collaterals free loan. • The loan amount provided is NRs 200,000 for an individual and upto NRs 5,000,000 for a group of maximum 25 members. • Proposal submission is necessary for loan.	• 7 days orientation training is mandatory to apply for loan. • Insurance cover provided to beneficiaries.	• Loan is provided to the individual irrespective of education level. • Proposal submission is necessary for Tarun loan. • No training. • No insurance cover to the individuals opting for loan.

Source: *Compiled from the Literature Review of various funds.*

From the table 2, it is observed that the other countries are providing non-financial services which are beyond funding the businesses while tackling the challenge of funding informal sector and small businesses. Training seems to be the important component amongst the other non-financial services.

Review of Studies on MUDRA Loan:

SN	Studies	Remarks / Conclusions
1	Venkatesh & Lavanya Kumari (2015)	• Capacity to hugely contribute through financing small business entrepreneurs and can create an ecosystem for entrepreneurship.
2	Shahid & Irshad (2016); Haris & Subash (2018); Vijai (2018)	• Small manufacturing units and self-employed individual in rural and urban areas will be benefited, formalize the informal sector and fill the finance requirement gap by funding the unfunded. • Boost morale of aspiring young educated and skilled workers to kick-start entrepreneurial activity and reduce the indebtedness through access to formal banking.
3	Rudrawar & Uttarwar (2016)	• Will act as a catalyst for growth of GDP, employment generation and entrepreneurship at large in the country.
4	Kumbhare & Ujjwal Kumar (2016); Aravindaraj & Bala (2018)	• Less awareness amongst the prospective beneficiaries especially those belonging to SCs and OBCs due to less exposure to banking services, so possibility that many prospective beneficiaries may be deprived of the initiative and is a matter of concern to addressed immediately.
5	Joshi V. K. (2017)	• The initiative appears to be encouraging for small businesses and self-employed as evident from the number of accounts opened and amount disbursed. It may enhance the socio-economic status of small business owners and has capacity to create multiplier effect, change the financial inclusion landscape and create entrepreneurial ecosystem in the economy. • The possibility of default must also be appropriately addressed as the loans are collateral free.
6	Agarwal & Dwivedi (2017); John et. al. (2018)	• Will be a game changer in financial inclusion by funding the unfunded population, and will create fair competition.
7	Biswas (2019)	• Not only encouraged educated youth but also underprivileged for self-employment. Contributed significantly in women empowerment and making them self-reliant.
8	Mahajan (2019)	• Served fairly well to small businesses as most of the loans disbursed are Shishu category. But the actual impact on income generation, employment generation and business expansion needs to be evaluated.

Source: *Compiled from the Literature Review of MUDRA Loans.*

Thus, keeping the above aspects in mind, the present study tries to analyze the Mudra loan initiative in terms of its prospects and leakages by surveying the beneficiaries of Mudra loan in selected Nagpur district.

II. Research Design and Methods

The descriptive study is based on field survey of actual beneficiaries of MUDRA Loan in selected talukas of Nagpur district. Nagpur district comprises of 14 talukas namely; Katol, Kalmeshwar, Kuhi, Kamptee, Narkhed, Umred, Ramtek, Nagpur rural, Nagpur city, Saoner, Parsheoni, Hingna, Bhiwapur and Mouda. Out of these, total eight talukas were selected using convenience sampling. Two talukas Parsheoni and Hingna are combined due to nonThe sample composition area/taluka wise is presented below in table 3:

Table 3: Sample Composition and Sample Size

SN	Area/Taluka	MUDRA Loan Beneficiaries					Bank officials (All Nationalized Banks)	
		Shishu	**Kishore**	**Tarun**	**Total**	**Target**	**Actual**	**Target**
1	Kalmeshwar	14	12	5	31	30	02	02
2	Kamptee	11	13	8	32	30	02	02
3	Katol	9	11	11	31	30	02	02
4	Nagpur	33	40	23	96	90	30	30
5	Nagpur Rural	14	13	07	34	30	02	02
6	Narkhed	14	09	08	31	30	02	02
7	Parsheoni+Hingna	14	15	04	33	30	02	02
8	**Total (Nagpur District)**	109	113	66	**288**	**270**	**42**	**42**

Source: *Author's Computation based on Primary data.*

Nagpur city being the highest populated taluka 90 sample size (30 each category) and from other talukas 30 sample size (10 each category) of Mudra beneficiaries is considered as representative sample. Similarly, for bank officials, 30 sample from Nagpur city and 02 each from other talukas is considered as representative sample based on availability of banks in the region. Total targeted sample of beneficiaries was 270 and actual beneficiaries surveyed were 288, and total targeted sample of Bank officials were 42 and 42 actual officials were surveyed. The sample of beneficiaries and officials is taken based on convenience sampling method. A structured questionnaire was designed to take the responses of bank officials and beneficiaries of Mudra loan in selected talukas of Nagpur district.

III. Results and Discussions

Mudra Loan Disbursements and Impact Analysis

The impact analysis of Mudra loans is done firstly, on the basis of average amount disbursed to beneficiaries in Nagpur district in comparison with National average, and secondly on the basis of various business indicators viz., employment generation, average salary paid, number of suppliers, purchases from suppliers, investment in fixed capital and profit pre and post Mudra loan. This impact analysis ignores the businesses not opting for any loans or opting for other types of loans or finances other than Mudra loans. Hence, the Mudra loan beneficiaries are considered as the niche group to analyse the impact pre and post Mudra loans.

Average Amount Received by Beneficiaries of Mudra Loan

The average amount received by beneficiaries under each Mudra loan category and area/taluka wise and overall is presented in below in table 4:

Table 4: Area/Taluka wise Average Amount Received by Beneficiaries

Area/ Taluka	n	Shishu	Kishore	Tarun	Average
Kalmeshwar	31	48,214 (n = 14)	2,85,833 (n = 12)	8,30,000 (n = 5)	2,66,290
Kamptee	32	46,818 (n = 11)	3,40,000 (n = 13)	7,25,000 (n = 8)	3,35,469
Katol	31	48,889 (n = 9)	3,23,636 (n = 11)	7,77,273 (n = 11)	4,04,839
Nagpur	96	47,682 (n = 33)	3,12,300 (n = 40)	8,73,913 (n = 23)	3,55,891
Nagpur Rural	34	43,143 (n = 14)	2,23,462 (n = 13)	8,32,143 (n = 7)	2,74,529
Narkhed	31	46,071 (n = 14)	2,74,444 (n = 9)	9,12,500 (n = 8)	3,35,968
Parsheoni +Hingna	33	45,000 (n = 14)	2,80,333 (n = 15)	7,67,500 (n = 4)	2,39,545
Overall (Nagpur District)	288	46,628 (n = 109)	2,96,300 (n = 113)	8,30,227 (n = 66)	3,24,165

National Average (2019-20) [Taken from Table 1]	--	29,879	1,41,268	5,87,301	52,968

Source: *Authors' Computation based on Primary Data.*

The disbursement of loans in Nagpur district seems to be highly commendable and much higher than the national average of 2019-20. Thus, it is pertinent to note that the majority of beneficiaries received the loans in respective categories as per their requirements due to fulfilment of all the necessary documentation the important amongst which is the registration of business.

Impact of Mudra Loan on Various Business Indicators

The impact of Mudra loan on various business indicators viz., Employment, Average salary paid, Number of suppliers, Purchases from suppliers, Investment in Fixed Capital and Profit is shown below in table 5:

Table 5: Business Indicators – Impact Analysis

Mudra Loan Category	Mean		Mean Diff.	Paired t-test value	P value	Remarks
	Pre-Mudra	Post-Mudra				
Employment Generation						
Overall (n=288)	1.552	2.333	0.781	10.504	2.2e-16	Significantly increased
Shishu (n=109)	0.477	0.761	0.284	5.439	0.0000	Significantly increased
Kishore (n=113)	1.566	2.353	0.787	5.708	0.0000	Significantly increased
Tarun (n=66)	3.303	4.893	1.590	9.761	1.15e-14	Significantly increased
Average Salary Paid to Workers Employed						
Overall (n=288)	5053.819	6986.458	1932.639	15.255	2.2e-16	Significantly increased
Shishu (n=109)	2146.789	3041.284	894.4954	6.580	8.69e-10	Significantly increased
Kishore (n=113)	5517.699	7677.876	2160.177	10.114	2.2e-16	Significantly increased
Tarun (n=66)	9060.606	12318.182	3257.576	12.473	2.2e-16	Significantly increased
No. of Suppliers						
Overall (n=288)	6.701	9.256	2.555	22.619	2.2e-16	Significantly increased
Shishu (n=109)	5.100	7.229	2.128	15.423	2.2e-16	Significantly increased
Kishore (n=113)	6.955	9.451	2.495	15.356	2.2e-16	Significantly increased
Tarun (n=66)	8.909	12.272	3.363	10.584	4.43e-16	Significantly increased
Monthly Purchases from the Suppliers						
Overall (n=288)	24880.21	43072.57	18192.36	17.259	2.2e-16	Significantly increased
Shishu (n=109)	9866.972	18962.39	9095.413	16.476	2.2e-16	Significantly increased
Kishore (n=113)	32247.788	54168.14	21920.35	10.863	2.2e-16	Significantly increased
Tarun (n=66)	37060.606	63893.94	26833.33	12.07	2.2e-16	Significantly increased
Investment in Fixed Capital						
Overall (n=288)	25,760.42	93,907.99	68,147.57	7.485	4.39e-13	Significantly increased
Shishu (n=109)	6,302.752	20,766.06	14,463.3	11.871	2.2e-16	Significantly increased
Kishore (n=113)	17,274.336	65,371.68	48,097.35	6.375	0.0000	Significantly increased
Tarun (n=66)	72,424.242	2,63,560.61	1,91,136.4	5.741	0.0000	Significantly increased
Approximate Profit						
Overall (n=288)	32,282.92	59,355.87	27,072.95	21.877	2.2e-16	Significantly increased
Shishu (n=109)	15,726.85	32,138.89	16,412.04	18.28	2.2e-16	Significantly increased
Kishore (n=113)	36,181.82	65,109.09	28,927.27	12.395	2.2e-16	Significantly increased
Tarun (n=66)	53,857.14	95,968.25	42,111.11	19.104	2.2e-16	Significantly increased

Source: *Author's Computation based on Primary data.*

From the table 5, it can be seen that the employment, average salary paid, number of suppliers, monthly purchases from suppliers, investment in fixed capital and approximate profits all have increased significantly in all the categories of Mudra loan and in overall Nagpur district at 1% level of significance. Thus, the Mudra loan initiative not only expanded the businesses of the beneficiaries, but also helped in creating the jobs in the market, increased salary per worker, generated the indirect employment in terms of increase in average number of suppliers, increased purchases from the suppliers, increased fixed capital of the businesses required to run the businesses in the long run and also increased significantly the average profit earned by the beneficiaries across all the categories of Mudra loan. Thus, the initiative is an achievement for the government for creating an ecosystem for entrepreneurship as evident from the business flourishment post Mudra loans.

Expansionary Effect of Mudra Loan

The expansionary effect is evaluated in terms of employment generation potential, income generation potential and profit generation potential of the initiative. The proxy used for expansionary effect of the initiative is the multiplier effect. It shows the snowball effect of economic change (capital infusion) of any kind and its effect on various aspects of economic activity. The study attempted to find this snowball effect on the economy in terms of employment generation (proxy used employment multiplier given by R.F. Kahn in 1931), income generation (proxy used is income multiplier given by J.M. Keynes in 1936) and profit generation (derived on the same lines as that of income multiplier) to understand the infusion of investment through Mudra loans based on the following formulas from the date of receipt of loan till October 2020. These values are calculated based on the data available with respect to direct and indirect employment generated, income generated by the known participants and profit earned by the businesses till mentioned dates. The possible unknown participants who are directly or indirectly benefited are not included in the measurement hence, the numbers are just an indicative measure.

Employment Multiplier, K = $\frac{\Delta N}{\Delta N_1}$, where K stands for the employment multiplier, ΔN for the increase in total employment, and ΔN_1 for the increase in primary employment.	Income Multiplier, M = $\frac{Y}{I}$, where Y stands for the total income generated, I for the change in investment
Net Profit Multiplier, P = $\frac{\Delta P}{I}$, where ΔP stands for total net profit pre & post-Mudra, P for total profit earned, and I for total investment. In calculating the profit multiplier, the profits made by the businesses are only taken into consideration.	Total Profit Multiplier, P = $\frac{P}{I}$,

The expansionary effect for employment, income and profits are measured for overall Nagpur district, Mudra loan category wise and are/taluka wise from the date of receipt of Mudra loan till October 2020 and the results are presented below in table 6:

Table 6: Expansionary Effect: Post Mudra – Area/Taluka and Mudra Loan Category Wise – Till October 2020 & Year wise

Mudra Loan Category/Area/ Taluka	No of beneficiaries	Employment expansion = ΔN/ΔN1	Income Expansion = (Y/I)	Net Profit Expansion = ΔP /I	Total Profit Expansion = P /I
Overall	288	1.404291	2.122704	2.1395	4.5232
	Year wise Expansionary Effect				
2016	15	1.61971	5.91392	7.58416	12.8853
2017	42	1.43131	3.22306	3.16333	6.8763
2018	110	1.43510	2.21735	2.40939	5.0257
2019	98	1.37417	1.53717	1.24474	2.9003
2020	23	1.30396	0.57949	0.70471	1.8041
	Mudra Loan Category wise Expansionary Effect				
Shishu	109	1.432566	6.17635	9.64663	18.2122
Kishore	113	1.385254	2.464169	2.35021	5.1264
Tarun	66	1.405707	1.53806	1.31446	2.8849
	Area/Taluka-Wise Expansionary Effect				
Nagpur	96	1.42449	2.10008	1.95305	4.1111
Nagpur Rural	34	1.779817	3.157414	3.96035	7.1731
Kalmeshwar	31	1.429658	1.765354	2.37807	4.5439
Kamptee	32	1.358255	2.130694	1.78658	4.0012

Katol	31	1.325641	1.484502	1.62852	3.7575
Narkhed	31	1.414634	1.851224	1.60297	4.1151
Parsheoni + Hingna	33	1.316017	2.731942	2.54383	5.6161
Source: Author's Computation based on Primary data.					

As can be seen in table 6, in overall Nagpur district, the employment expansion coefficient is 1.40; implying that 1 primary employment created 1.40 total employment (1 primary & 0.40 secondary (indirect) employment). The indirect employment is in the form of number of suppliers increased for the businesses. The year-wise employment generation coefficient during 2016-20 lies in the range 1.30 – 1.61 and area/taluka wise lies in the range 1.31 – 1.77. Thus, it is evident that the Mudra loan initiative has significantly contributed in employment generation in the economy and have high potential to contribute more in days to come.

In overall Nagpur district, the income expansion coefficient is 2.12. This implies that for one unit rise in investment, the total income in the economy increased by 2.12 units indicating high amount of income generation. The income expansion coefficient for 2016-2020 is in the range of 0.57 – 5.91. The area/taluka wise income expansion is in the range 1.48 – 3.15. It can be inferred that the income expansion in the economy created by Mudra loan initiative is highly encouraging as it has contributed significantly in generation of income in a short time span of just 4 – 5 years.

In overall Nagpur district, the net profit expansion coefficient is 2.1395 and total profit expansion coefficient is 4.5232. This implies that for one unit rise in investment, the net profit increased by 2.13 units and total profit increased by 4.52 units indicating high amount of profit expansion effect. The year-wise and area/taluka wise, the profit expansion is highly commendable. It is evident from the profit expansion coefficient that the Mudra loan initiative has contributed significantly in generation of profit in a time span of just 4 – 5 years and is likely to contribute further in years to come. This shows that the PMMY initiative is significantly changing the landscape of non-corporate businesses in terms of growth and employment generation.

Mudra Initiative – Issues of Concerns

Irrespective of success of the initiative, there are certain concerns related to Mudra scheme expressed by various scholars like non-repayment of loans, problems faced by the borrowers etc. These issues of concerns are evaluated by interviewing 42 bank officials in various talukas/areas and obtained the data. The results are presented below in table 7:

Table 7: Avg No of Loans Distributed by Banks and Prompt Repayment (%)

SN	Mudra Loan Category	Average No. of Loans	Average Percentage of Borrowers Making Prompt Repayment
1	Shishu	43	74.28 %
2	Kishore	29	88.19 %
3	Tarun	15	94 %
4	Total (Nagpur District)	29	85.48 %

The percentage of defaulters is less in all the categories of Mudra loans as evident from the figures in table 7. The borrowers not making the prompt repayment is highest in Shishu category. Also, there are few borrowers in all category of loans who are making delayed repayments. The reasons for non-repayment as identified by bank officials are: ill intentions; the belief of the borrowers that 'since it is the government money, so they need not have to pay back'; misuse of funds by beneficiaries; business failure and business losses; poor economic and financial condition; inability to handle the business or manage the business activities properly; and unethical behaviour on the part of some beneficiaries. The possible solution suggested by the bank officials to tackle these issues are: mandatory training to prospective beneficiaries, awareness about business registration formalities, business guidance, etc., which will make them ethical in behaviour.

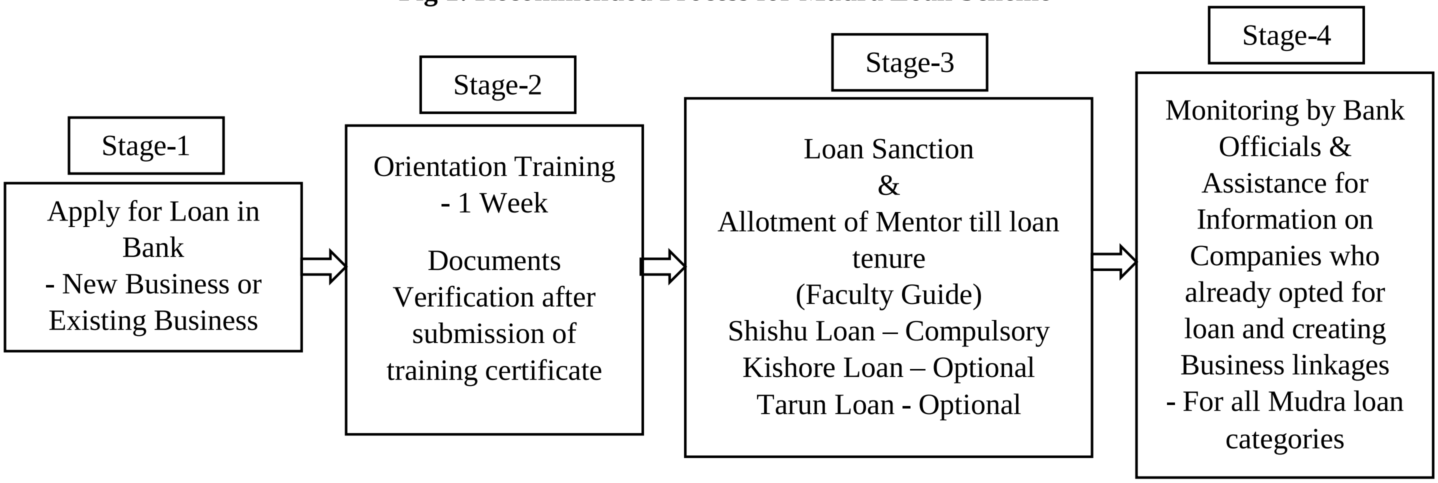
The beneficiaries were also asked about the difficulties they faced during the process of Mudra loan availability based on certain parameters viz., access (which consists of existing rules and regulation, formalities and procedures, repayment rules and conditions, repayment duration, existing rate of interest), level of funding (which includes receipt as per request, fulfilment of business needs, receipt of loan in stipulated duration, sufficiency of loan) and support services from bank (which includes encouraging role of bank, availability of adequate information from bank, gestation period after loan sanction) on five point Likert scale (1 – Strongly disagree and 5 – Strongly agree). The beneficiaries expressed their satisfaction about the process of obtaining the loan under this scheme at 1% level of significance. The beneficiaries were also asked whether they make regular repayment. There were some beneficiaries who did accept that they could not repay the loans on time due to reasons which include; unfavourable business conditions, sudden crisis at home, unforeseen challenges at family level. But they affirmed that they were not the defaulters and would pay lump-sum.

As far as the issue of obtaining the loan from the bank is concerned, the possibility of applicant resorting to corrupt mean like bribery or using the influence may not be denied. But it is worth mentioning that the beneficiaries strongly contended that they need not have to resort to such tactics for obtaining the loan.

New Process Recommendation for Mudra Loan

Considering the overall performance of Mudra Scheme on the basis of responses of beneficiaries of Mudra loans, an urgent need to revamp the process is felt to ensure the better deliverables. Also, on the basis of literature review of similar funds in other countries, it is found that the training is an essential component before sanctioning of the loan which is missing in Mudra Scheme. Further, the components like mentoring, business plan preparation, marketing and promotion and networking are also needed to be incorporated. The existing process have only two Stages; Stage 1: Apply for loan, Stage 2: Documents verification and loan sanction/rejection. Hence, the new process is recommended which comprise of the four stages which are given as below in figure 1.

Fig 1: Recommended Process for Mudra Loan Scheme



Source: *Author's Recommendation*

In **Stage-1**, the prospective beneficiary will apply for loan in bank. In **Stage-2**, the applicant will be provided the list of training centres to pursue training. The institutes may be empanelled by the banks by signing the Memorandum of Understanding (MoU) with the educational institutes or established industries after verification of infrastructure facilities. The faculties or industry expert from these institutes can act as a trainer and/or mentor for small businesses. The institute will provide the certificate of completion to the prospective beneficiary, which will be submitted in the bank by the candidate. The bank will verify all the documents and complete the documentation part for further process. In **Stage-3**, the loan amount will be sanctioned and disbursed. If the beneficiary belongs to Shishu Loan category, then the mentor must be allotted. Shishu category loan beneficiaries are the candidates with relatively low profile in terms of educational qualifications and economic backgrounds. So, they need mentor for guidance in businesses. Kishore category and Tarun category beneficiaries may be offered this facility if it is desired by them as their educational and economic background is better than Shishu category beneficiaries. In **Stage-4**, all the beneficiaries must be monitored by the bank officials on regular intervals may be in 3 to 4 months and must be asked for progress report. This will help the bank to monitor and understand the difficulties the borrowers are facing in businesses, and recommend for possible solutions. Also, the bank maintaining the information of all the borrowers who borrowed money for business purposes, such information in the form of list and contact details must be shared with the other beneficiaries so that they can develop the networking and create business linkages which will support their businesses to grow.

IV. Conclusion

The PMMY initiative has given the stimulus to start-up and entrepreneurship ecosystem as every member of the society irrespective his educational background can now think of opting for Mudra loan at the primitive stage of the business. One can dream of entrepreneurship by starting initially with meagre capital and then can opt for Mudra loan. It is a need of an hour to take up the start-up and entrepreneurship activities by the members, as the creation of employment opportunities for the youths is the major challenge the government is facing and is likely to aggravate further. Better penetration and more awareness are necessary, so that prospective beneficiaries will not be deprived of this facility. The initiative is contributing significantly in financial and economic inclusion as registration of the business is mandatory to get the loan. The initiative has proved to be a boon for the members of informal businesses as well as other micro and small businesses in real sense as it has significantly raised the standard of living and helped in business expansion. To sum up, the PMMY initiative with new process recommended if implemented, will create better lender-borrower relationship, ensure better monitoring and control, increase industry-institute interaction, scrutinization of genuine borrowers, and require less resources with high gains, will create innovative ideas arising out of student-faculty-entrepreneur interactions and fast problem-solving mechanism.

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GREEN INSOLVENCY: AN INTERTWINED CONNECTION BETWEEN CLIMATE CHANGE AND CREDIT RISK

Shefali Sethi*Anand Sharma**

Purpose: This study contributes to the literature of the novel concept of green insolvency, its growing importance in India and how it can be introduced in the current legislation.

Design/methodology/approach: A meta-analysis of literature has been performed using information which has been supported by publications from various agencies such as Task Force on Climate-Related Financial Disclosures and Oxford Law.

Findings: It suggests that in order to effectively manage the risk of insolvency and bankruptcy, environmental damages should be included in administrative charges, environmental claims should be given priority in liquidation proceedings, concept of insurance fund should be created and incentives in the form of grants in exchange for mandatory climate reporting should be introduced.

Originality/value: By synthesising and assessing the extensive literature on climate change and insolvency risk, the current study offers a fresh perspective which no study in India has done till date.

Keywords: *Insolvency, Bankruptcy, Green, Climate change, sustainability, credit risk*
JEL Classification Code: *Q01, G33, G38*

The concept of sustainability development has expanded tremendously and been incorporated into many professions in the last two decades. A German forester named Hans Carl von Carlowitz coined the phrase for the first time several centuries ago to describe how forests should be managed over the long term. In the middle of the 1980s, the commission led by former Norwegian Prime Minister Gro Brundtland became the centre of this discussion, which resulted in the ground-breaking report Our Common Future (Development, 1987). This study provided the widely accepted contemporary definition of sustainable development:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

Over the past few years, the discussion of climate change has moved into the mainstream as a result of increased public awareness, frequent extreme weather occurrences, and mounting scientific data. Climate change provides a serious threat to ecosystems and habitats, and as solvency risk increases, it also offers a challenge to the existence of enterprises. Businesses are particularly susceptible to the consequences of climate change if they work in the energy, transportation, agricultural, or forestry industries. Natural resources are important inputs for a variety of industries, and their depletion or scarcity can have a negative impact on the production processes of these industries, leading to higher costs and supply disruptions. At the same time, physical risks to the survival of businesses are posed by extreme weather conditions or natural disasters like floods, storms, wildfires, etc. Changes in climate patterns, such as persistent temperature increases, may eventually damage some enterprises' production activities. Certain companies, like oil conglomerates, are now facing massive litigation costs as more lawsuits are being filed against enterprises, holding them responsible for damages owing to environmental damage that may have been caused by their acts or omissions. Businesses that do not adapt to climate change, "including enterprises in the financial system, will go bankrupt without question, and yet there are tremendous riches to be earned," as former Governor of the Bank of England Mark Carney famously said, "will go bankrupt without question." This study, the first of its type, examines the green insolvency regime's underlying principles and how they interact with the Insolvency and Bankruptcy Code. The paper's main goal is to establish justifications for the nation's development of a climate-sensitive insolvency and bankruptcy law.

I. Review of Literature

Studies already conducted concentrate on the relationship between climate change and an economy's financial stability. According to (Gangi et al., 2020) environmental damage and climate change provide serious financial concerns and endanger economic viability. According to an American study (Saha and Viney, 2020) hurricanes and flooding might cause the US to lose more than 10% of its GDP. Due to the fact that businesses in a wide range of industries rely on the natural environment for vital resources, the state of the environment is deteriorating, which has led to a number of problems(Wagner, 2010). Economic experts have long warned of the negative impacts of climate change on the economy and the possibility of a financial collapse brought on by the explosion of the carbon bubble (Institute for Public Policy Research,2012).

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The flip side is the switch from an economy based on carbon to one that is predominantly fuelled by renewable resources results in a kind of danger known as transition risk which can have an impact on the global capital markets by slowly changing the price of commodities, corporate bonds, and stocks (Rudebusch, 2021). Another risk is the cost of complying to environmental regulations which can negatively impact its profitability by raising production costs and lowering productivity. For instance regulations requiring more stringent air controls may cause manufacturing plants to produce less than 5% , costing the industry as a whole USD 21 million annually (Greenstone et al., 2012).

Risk to businesses

Corporate community is becoming aware of the risk posed by climate change. According to the Australian Bureau of Agricultural and Resource Economics, farmers have lost more than AUD $1 billion due to the changing climate in 20 years mostly due to drought (Gooday&Hughes, 2021). Similarly, almost all U.S. ski resorts could have a 50% shorter season by 2050 and up to an 80% shorter season by 2090 as a result of decreasing snowfall brought on by rising temperatures. As a result of wildfires making popular hiking destinations dangerous, the United States, Turkey, and Australia are losing money from tourism (Wobus et al.,2017). India is most vulnerable to climate change as it has one of the highest disaster risk levels in the world, ranking 38th out of 191 nations in the 2022 (Inform Risk Index,2022). This is due to the country's significant susceptibility to disasters like floods, tropical storms, and drought. According to a study services, manufacturing, retail, tourism, construction, and transport would be the most affected industries, with these industries losing an average of more than USD 1.5 trillion in value added to the GDP year by 2070 (Deloitte Economics Institute,2021). Particularly susceptible to risk is the MSME sector which constitutes large portion of business in India and lacks resources to integrate climate risk (Gulati, 2001). On the other hand (Macwilliams et al., 2019) in their report looked at market variables to determine investor expectations for exposure to climate risk and expected cost distribution. They witnessed that investors think that the cost rises brought on by climate change won't have a significant influence on the present value of their investments until a very long time from now.

Hence, according to (Gonenc & Scholtens, 2017) businesses that actively adopt and incorporate pro-environmental strategies to reduce negative externalities would increase their market-competitive edge and assure their continued existence. A company's participation in corporate environmentalism may lower its risk of insolvency in a variety of ways because it influences decisions about the company's goods and services, consumer purchasing and brand engagement, as well as stakeholders' perceptions(Rahman et al., 2021). Additionally, corporate environmentalism lessens the danger to a company's reputation, which is the single biggest risk a company can face(Gasbarro et al., 2017). (Cai et al., 2016) using a sample of US businesses from 1990 to 2012, have examined the relationship between firms' Corporate Environmental Responsibility and risk and discovered convincing evidence that enhancing environmental performance lowers financial risk for businesses.(Aziz et al., 2021) revealed that businesses with strong green performance will see a decreased chance of bankruptcy as their z score rises.

Prior to recently, the intersection of bankruptcy law and environmental law did not receive enough attention. Business Enabling Environment (BEE), a new indicator developed by the World Bank to measure the business and investment climate of nations which examines good environmental regulatory practises during insolvency proceedings and addresses environmental obligations in bankruptcy is an effort in this direction. (Zou et. al, 2015) revealed that in order to comply with a 50% decrease in carbon footprint, the European Central Bank dropped a number of issues from its portfolio. Similarly, the central banks in France and Sweden have adjusted their investment strategies to take climate risk exposure into consideration after accepting the inescapable fact. Both domestically and abroad, the number of cases are rising claiming that corporations who have not appropriately disclose the dangers of climate change are guilty of securities fraud because these risks have an impact on stock prices. The plaintiffs in these lawsuits contend that climate change concerns are "material facts" that should have been disclosed because investors base their decisions on the financial value of the assets held by the corporation (Byrnes&Setzer,2019).

Objectives

- To examine growing importance of Green Insolvency in India followed by case study analysis.
- To analyse the current scenario of Green Insolvency in India.
- To recommend policy changes that could be made to the existing legislation.

II. Research Design and Methods

In order to respond to the research questions and present a case for an Indian green insolvency regime, numerous secondary sources have been used. To back up the claims and provide evidence, reports from eminent research and insights teams at multinational corporations (such KPMG and Deloitte) have been employed. A meta-analysis of the literature has been conducted to provide the backdrop for India's green insolvency policy using publications from the Task Force on Climate-Related Financial Disclosures (TCFD), OECD, Oxford Law, and British Columbia. Meta-analysis is the process of using statistical tools to compile the findings of various independent investigations. A meta-analysis does supplementary statistical analysis on the findings of comparable research in addition to critique and integration. Empirical data on economic and financial losses attributable to climate change has been included which provides evidence to support the research statements such as the report of the Climate Disclosure Standard Board (CDSB) describes how climate change might result in financial hazards when combined with poor corporate governance. Similarly, according to a study by International Water Management Institute,2007 by 2025, it is predicted that Indian businesses will more than triple their water consumption. The price and productivity of highly water-intensive businesses would be negatively impacted by the dwindling fresh water supply and rising demand. Also, according to a recent survey, Indian businesses calculated that the overall intrinsic financial impact of climate risks was $7,138 billion, with an average risk of $92 billion per business (CDP India Annual Report 2020).

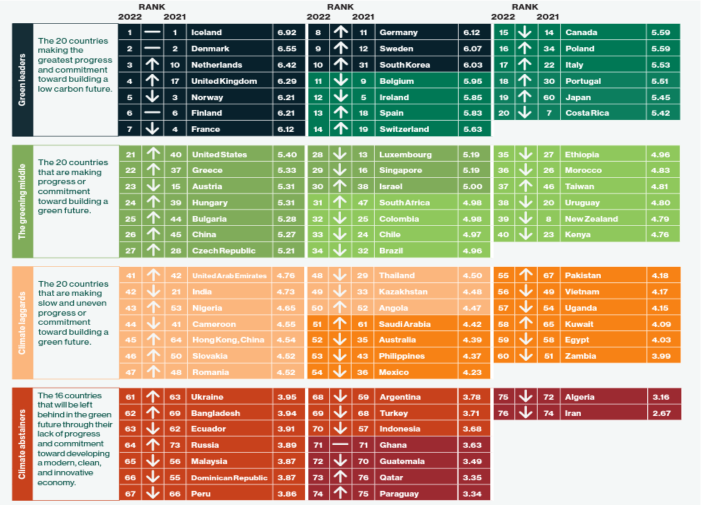
III. Results and Discussion

Growing Importance of Green Insolvency in India

Over the past few years, the discussion of climate change has moved into the mainstream as a result of increased public awareness, frequent extreme weather occurrences, and mounting scientific data. According to the National Centers for Environmental Information, which monitors weather and climate events in the United States, 2017 was "a historic year of weather and climate disasters," with three tropical cyclones, eight severe storms, two inland floods, a crop freeze, drought, and wildfires contributing to a total cost of more than $300 billion. (NOAA National Centers for Environmental Information ,2022). The Reserve Bank of India noted that "the immediate policy issue is to jump-start the global economy" in a paper titled Green Finance in India: Progress and Challenges published in January 2021(RBI, 2021). (World Economic Forum,2019) categorised extreme weather, inadequate climate change adaptation, and natural catastrophes as the top three threats, in that order, according to the "probability" that they will occur. According to the United Nations Environment Programme, if things continue as they are, global temperatures could increase by more than 3°C this century. Such a spike in temperature has the potential to destroy economies, stymie trade, halt development, and drive more people into poverty (United Nations,2022). By 2050, the global GDP is expected to have been reduced by up to 18% and will have lost an estimated 10% of its current worth (Swiss Re Institute, 2021). For a nation like India, where the government hopes to nearly quadruple the size of the economy to $10 trillion by 2030 from roughly $2.75 trillion at present, this magnitude of loss in economic value is not promising. The goal of generating net-zero emissions by 2070 was pledged by Indian Prime Minister Narendra Modi during the brainstorming session held at COP26 in Glasgow last year. He also announced an ambitious goal for India to develop 500 GW of energy from non-fossil sources and cut carbon intensity to 45% by 2030 as part of the five-pronged commitment "Panchamrit." In addition, the prime minister promised to reduce anticipated carbon emissions by 1 billion tonnes from 2021 to 2030 (www.pmindia.gov.in, 2021).

The Green Future Index 2022 is the second annual comparative evaluation of 76 countries and territories based on their capacity to create economies and society that are sustainable and low-carbon. India is ranked currently 42^{nd} as compared to its previous ranking of 21 in the year 2021.It has been categorised as climate laggards which means it is making slow and uneven progress towards building a green future. Although, India continues to be one of the world's most active investors in renewable energy generation (solar, especially), and has started to make firmer policy commitments to decarbonization. Plans call for India's state coal companies to install 5.56 gigawatts of renewable power generation capacity by 2030(Singh, 2021) Below is the figure showing Green Future Index country ranking,2021-22:

Figure 1: *Green Future Index rankings, 2021-22*



		RANK					RANK					RANK				
		2022		2021			2022		2021			2022		2021		
Green leaders	The 20 countries making the greatest progress and commitment toward building a low carbon future.	1	—	1	Iceland	6.92	8	↑	11	Germany	6.12	15	↓	14	Canada	5.59
		2	—	2	Denmark	6.55	9	↑	12	Sweden	6.07	16	↑	34	Poland	5.59
		3	↑	10	Netherlands	6.42	10	↑	31	South Korea	6.03	17	↑	22	Italy	5.53
		4	↑	17	United Kingdom	6.29	11	↓	9	Belgium	5.95	18	↑	30	Portugal	5.51
		5	↓	3	Norway	6.21	12	↓	5	Ireland	5.85	19	↑	60	Japan	5.45
		6	—	6	Finland	6.21	13	↑	18	Spain	5.83	20	↓	7	Costa Rica	5.42
		7	↓	4	France	6.12	14	↑	19	Switzerland	5.63					
The greening middle	The 20 countries that are making progress or commitment toward building a green future.	21	↑	40	United States	5.40	28	↓	13	Luxembourg	5.19	35	↓	27	Ethiopia	4.96
		22	↑	37	Greece	5.33	29	↓	16	Singapore	5.19	36	↓	26	Morocco	4.83
		23	↓	15	Austria	5.31	30	↑	38	Israel	5.00	37	↑	46	Taiwan	4.81
		24	↑	39	Hungary	5.31	31	↑	47	South Africa	4.98	38	↓	20	Uruguay	4.80
		25	↑	44	Bulgaria	5.28	32	↓	25	Colombia	4.98	39	↓	8	New Zealand	4.79
		26	↑	45	China	5.27	33	↓	24	Chile	4.97	40	↓	23	Kenya	4.76
		27	↑	28	Czech Republic	5.21	34	↓	32	Brazil	4.96					
Climate laggards	The 20 countries that are making slow and uneven progress or commitment toward building a green future.	41	↑	42	United Arab Emirates	4.76	48	↓	29	Thailand	4.50	55	↑	67	Pakistan	4.18
		42	↓	21	India	4.73	49	↓	33	Kazakhstan	4.48	56	↓	49	Vietnam	4.17
		43	↑	53	Nigeria	4.65	50	↑	52	Angola	4.47	57	↓	54	Uganda	4.15
		44	↓	41	Cameroon	4.55	51	↑	61	Saudi Arabia	4.42	58	↑	65	Kuwait	4.09
		45	↑	64	Hong Kong, China	4.54	52	↓	35	Australia	4.39	59	↓	58	Egypt	4.03
		46	↑	50	Slovakia	4.52	53	↓	43	Philippines	4.37	60	↓	51	Zambia	3.99
		47	↑	48	Romania	4.52	54	↓	36	Mexico	4.23					
Climate abstainers	The 16 countries that will be left behind in the green future through their lack of progress and commitment toward developing a modern, clean, and innovative economy.	61	↑	63	Ukraine	3.95	68	↓	59	Argentina	3.78	75	↓	72	Algeria	3.16
		62	↑	69	Bangladesh	3.94	69	↓	68	Turkey	3.71	76	↓	74	Iran	2.67
		63	↓	62	Ecuador	3.91	70	↓	57	Indonesia	3.68					
		64	↑	73	Russia	3.89	71	—	71	Ghana	3.63					
		65	↓	56	Malaysia	3.87	72	↓	70	Guatemala	3.49					
		66	↓	55	Dominican Republic	3.87	73	↑	76	Qatar	3.35					
		67	↓	66	Peru	3.86	74	↑	75	Paraguay	3.34					

Source:*MIT Technology Review Insights,2022*

Similarly, global nations are evaluated according to the Environmental Performance Index based on indicators like waste management, air quality, biodiversity & habitat, fisheries, ecosystem services, and climate change. India is ranked 180 with EPI score of 18.9 which is lower than even Bangladesh, Myanmar, Pakistan, and Vietnam. The nation has also performed poorly on several metrics, including government performance, rule of law, and corruption control. The chief of the UN Development Program has warned that more than 50 of the world's poorest developing nations face the threat of going into default on their debt and effectively going bankrupt unless the developed world provides immediate assistance.

The impact of climate change is becoming a significant consideration for businesses. Climate change will now impact a company's prospects for resolving its insolvency if it were to start the insolvency resolution procedure. For instance, a resolution applicant would consider a firm's present and potential carbon footprint for technological innovation and the implementation of energy-efficient operations to minimise it. The value of the company as a continuing concern could be negatively impacted by the reputational harm resulting from insolvency brought on by climate change.

Case studies

Pacific Gas &Electric Case study

The utility PG&E, which is based in California, submitted a second modified plan of reorganisation at the beginning of 2020. In response to more than $30 billion in litigation claims made against it for its claimed participation in starting California wildfires, PG&E filed for Chapter 11 bankruptcy. It is termed as the first climate change bankruptcy in the wake of wildfires that engulfed its service region in 2017 and 2018. The severe weather, which was exceptionally hot and dry and led to more frequent and severe fires, was largely to blame for the massive damage. The conditions, according to the recently fired CEO of PG&E, were brought on by climate change and global warming and many experts have agreed **(**Macwilliams J. et. al.,2019). The spill over of such climate induced bankruptcy is:

1.PG&E's stock fell 85%, causing more than $20 billion in losses for shareholders.

2. Huge expenses will be incurred by insurers as a result of losses in every type of insurance imaginable, including life, health, property, disability, and others.

3. During the next three years, customers, who now pay the second-highest rates in the nation, will see yearly increases of 12 to 24%. Rate rises are expected to continue for many years.

The example of PG&E's bankruptcy shows how financial stress brought on by climate change can cause businesses to declare bankruptcy. The bankruptcy-related effects of climate change lead to higher debt costs and a decline in stock prices.

The Redwater Case

In the case of Orphan Well Association v. Grant Thorton Ltd. (also known as Redwater) an Albertan oil and gas firm that owned more than a hundred wells, pipelines, and facilities, filed for bankruptcy. The laws governing how oil and gas firms operate in Alberta also mandate that they "abandon" their pipelines and wells and "reclaim" or "restore" the land. The Supreme Court of Canada decided this matter and held that the trustee could not disclaim the site in favour of the Alberta Energy Regulator. Additionally, it decided that Redwater's environmental commitments could not be disregarded, regardless of whether they were funded by their own funds. Prior to settling any other claims, the environmental responsibilities resulting from reclamation and abandonment were to be met. This is a significant ruling since environmental commitments are not given top consideration in insolvency cases.

Current Scenario in India

In India, there have been numerous instances of commercial interruptions brought on by climate change. The following are some examples:

- Over the course of 2014–2015, India had dry spells that had a negative impact on enterprises across a variety of industries.
- Due to the drought and warmer temperatures in 2016, there was a 12% decrease in tea production in southern India.
- Due to a lack of available water for cooling, a coal power station in West Bengal had to shut down for ten days.
- The catastrophe in Uttarakhand lead to loss of innumerable assets and it will be difficult to reconstruct many of them.

The PHD Chamber of Commerce estimates that lost potential tourism costs have reduced the gross state product by 11%. The cost of the lost ecosystem services is incalculable, and the hundreds of billions of rupees now needed to rebuild something that was largely avoidable could have been used in other ways. Climate change risks are predicted to have a catastrophic financial impact of 7,138 billion (about $100 billion) on Indian enterprises in the next five years (CDP India Annual Report, 2020). According to a study, the majority of coal plants in India only ran at 60% of their full potential and were at risk of going out of business soon. Only 36% of Indian businesses disclosed their greenhouse gas emissions in 2016, which is a very low number for a nation that is home to some of the world's most polluted cities (Down to earth,2018). Large Indian firms are already being charged with intentionally concealing facts about their environmental impact by a significant number of investors from around the world (Sengupta,2020).

Both voluntary and compulsory disclosures are still in their infancy in India. Some SEBI disclosure requirements such as Regulation 24 and 70 of the SEBI (Issue of Capital and Disclosure Requirements) Regulations, 2018 mandated disclosure of material information and Schedule VI of the ICDR regulations mandates disclosure of material risk factors but it is not clear whether climate change disclosures come within its ambit. The "Voluntary Guidelines on Corporate Social Responsibility" were introduced by MCA, who urged businesses to publicly acknowledge their contributions to society. The National Voluntary Guidelines on Social, Environmental, and Economic Responsibilities of Business ,2011 came after this. Environmental, social, and governance (ESG) reporting has accelerated significantly in India and investor demand for these disclosures has increased, especially in light of the epidemic. In 2011the UN-backed Principles of Responsible Investment (PRI), "a global network of investors that tries to integrate ESG norms into investment processes," was signed by Kotak Mutual Funds, the first asset management firm (Souvik,2020). This will motivate businesses to develop sustainable practices that will benefit them in long run and have a wider impact. While it undoubtedly promotes openness for all parties involved, a firm's management of the climate risk is the only information provided, not the degree to which firm is exposed to the risk.

Policy Recommendations

Following policies must be adopted by the Government and industry:

1. The relationship between climate change and insolvency policy needs to be investigated in order to effectively manage the risk of insolvency and bankruptcy as well as to minimise and manage the loss of asset value. Environmental damages made by government agencies are not considered operational debt. Such claims should be included in the administrative charges or costs of the insolvency resolution procedure. A business should not be able to obtain a competitive edge over rivals and escape compliance with environmental rules by simply declaring bankruptcy.
2. Environmental authorities are currently not considered operational creditors under the Insolvency and Bankruptcy Code, 2016. Environmental claims are usually in the form of fines, penalties which are mostly unliquidated due to vast majority of environmental laws and insolvency professionals are not quantifying correct value of these claims as seen in the case of Essar steel vs Satish kumar gupta & ors(Essar Steel India Limited v. Satish Kumar Gupta and Ors, 2020). In an effort to make a firm accountable for environmental harm, such procedures may be detrimental. Environmental claims should be given priority even before secured creditors. This will promote the larger objective of sustainable environmental goals. Moreover, taking this action could ultimately improve the credit market by allowing financial creditors to make environmental compliance a required prerequisite in the future, in line with The Equator Principles.
3. The government ought to offer incentives in the form of grants or subsidies that aid in corporate reorganisation. The policies should include mandatory climate reporting as a condition of receiving new investments or resurrection. Firms that undergo restructuring or revival based on climate-sensitive principles can also raise more money and maintain themselves as a "going concern."
4. When dealing with insolvencies brought on by climate change, insolvency experts will need to set up temporary financing, manage a variety of claims resulting from sudden incidents or long-term climate effects, and maintain effective corporate governance, including climate change disclosures.
5. Before approving the resolution or liquidation of a corporation, the courts that handle bankruptcy cases would also need to consider how public policies and regulatory frameworks are changing in response to climate change. This would enable an appraisal of the company using the ESG criteria and provide fresh investment prospects.
6. Government should create insurance legislation against catastrophes, much like California did in the PG&E case. A safety certificate for the utility should be issued, and an advisory board should be established to assess the utility's unique safety criteria. To access the insurance fund, the issuance of this certificate would be necessary. This encourages utilities to take appropriate safety precautions and switch to more environmentally friendly methods if they want to be saved in the event of a climate change-related catastrophe.
7. To finance the switch to low-carbon manufacturing and to finance climate resilience, a wide range of financial instruments would need to be created. Companies should be required to make climate-related disclosures to reduce the information asymmetry in securities market.The task force on Climate change related financial disclosures(TFSD) has developed consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders.Similar to New Zealand and UK ,India should mandate such disclosures .
8. For the benefit of financial institutions and investors, numerous ratings organisations, data companies, and actuaries would also need to create a new set of criteria to gauge the resilience of businesses to climate change threats.

Discussion

The relationship between insolvency laws and sustainability research has not been explored till now. By synthesising and assessing the extensive literature on climate change and insolvency risks, a case is made in favour of a climate-sensitive insolvency regime. It draws attention to the need for a "green insolvency regime” in India by presenting strong justifications and supporting data from around the globe, particularly from India. The study suggests that going forward environmental damages should be included in the administrative charges, environmental claims should be given priority in liquidation proceedings, concept of insurance fund should be created and incentives in the form of grants in exchange for mandatory climate reporting should be introduced. Courts that handle bankruptcy should consider how public policies and regulatory frameworks are changing in response to climate change and make climate change related financial disclosures mandatory.

IV. Conclusion

There is a vast body of economic literature suggesting that climate change may trigger the next bankruptcy crisis and it is past time for regulators to intervene to prevent a financial catastrophe. Even while climate change will bring many difficulties for businesses in the future, there are also chances for them to become more competitive and discover new market opportunities. Businesses can gain an advantage in their industry by developing new, less carbon-intensive products and services as a result of climate change. The current regulatory framework in India gives SEBI plenty of room to take legal action against companies that fail to disclose climate change concerns. Amendments in the Insolvency law can go a long way in changing the way society perceives business failures and promote the objective of sustainable businesses. Although PG&E's bankruptcy may have been the first and only one related to climate change, it is undoubtedly not the last. Businesses may experience solvency issues if they don't act quickly to incorporate climate change disclosures and preparedness into their business strategies. Action on climate change is urgently needed to protect human lives and livelihoods, the environment, and the economy.

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A STUDY OF WORKPLACE SPIRITUALITY AND JOB COMMITMENT WITH THE MEDIATION OF OCCUPATIONAL STRESS

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Purpose: *This research aims to look into the direct and indirect links between employees' spirituality and their organizational commitment.*

Design/methodology/approach: *Occupational stress has been examined as a relationship mediator. We collected data from 447 respondents by means of a structured survey. The data were analyzed using the SmartPLS version 3.3.2 partial least square structural equation modeling.*

Findings: *Workplace spirituality affected the stress of the employees negatively and the three forms of commitment i.e., affective, continuance, and normative commitment positively. Occupational stress has a detrimental influence on all categories of commitment and plays the role of mediator between spirituality and affective type of commitment.*

Originality/value: *This work is critical for the HR departments of IT organizations to become more familiar with the spiritual side of their staff and to develop timely, suitable policies to increase their commitment to the organization.*

Keywords: *Workplace spirituality, commitment, structural equation modeling, PLS-SEM, mediation, stress*

JEL Classification: *M50*

In organizational psychology, one of the most essential and studied variables is organizational commitment. The importance of organizational commitment is critical because it leads to a number of favorable organizational outcomes once it is developed. This research focuses on spirituality-related situational variables i.e., workplace spirituality as an antecedent of organizational commitment.

This paper examines the direct impact of workplace spirituality on work-related stress and all three dimensions of commitment as well as the indirect impact of workplace spirituality on commitment via occupational stress among Indian IT employees. Workplace spirituality literature lacks the studies on mechanism through which it attains its objectives, this study fills this gap by making an effort to test occupational stress as a mediator between spirituality at the workplace and organizational commitment.

This document is organized as follows to accomplish the objectives. We begin by reading the literature on commitment, spirituality, and stress and then forming hypotheses. Then, we'll go through the research instruments and procedures that were employed in this research. Then, the results of the survey will be presented, which include measurement model assessment as well as structural model assessment. Finally, we look at the findings, implications in practice, and the research's limitations.

I. Review of literature

Organizational Commitment

An employee's organizational commitment describes the nature of their relationship with their employer and minimizes the possibility of them leaving the organization (Allen and Meyer, 2000). Allen and Meyer, (1990) define three types of commitment in organizations: affective commitment, continuance commitment, and normative commitment. Affective commitment entails how much a person identifies with the organization, gets involved, and enjoys being a part of it (Meyer & Allen, 1991). When an employee believes that there are no other options but to stay with the existing company, he or she develops a continuance commitment. If the major thread that binds individuals to their organizations is their resolve to continue, this attachment may result in subpar work performance (Allen and Meyer, 2000). A person's moral obligation to stay in the group is known as normative commitment. Employees who exhibit normative commitment believe they are obligated to stay for a variety of reasons, including obligation, common needs, and organizational socialization (Meyer & Allen, 1991).

Workplace Spirituality

Workplace spirituality is the "recognition that employees have an inner life which nourishes and is nourished by meaningful work taking place in the context of a community" (Ashmos & Duchon, 2000, p.137).

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Workplace Spirituality and Organizational Commitment

According to Rego and Cunha, (2008), all three dimensions of organizational commitment were found to have good relationships with workplace spirituality.

A higher level of workplace spirituality leads to greater normative and affective commitment, but lower levels of continuance commitment (Jurkiewicz and Giacalone, 2004; Milliman et al., 2003; Giacalone and Jurkiewicz, 2003).

Based on the present literature, the study's hypotheses include the following:

- H1(a).Workplace spirituality positively affects affective commitment
- H1(b).Workplace spirituality negatively affects continuance commitment
- H1(c).Workplace spirituality positively affects normative commitment

Occupational stress

Motowidlo, Packard & Manning, (1986, p. 618) outline stress as "An unpleasant emotional experience connected with aspects of fear, dread, anxiety, irritation, annoyance, anger, sadness, grief, and despair".

Workplace Spirituality and Occupational Stress

According to research, workplace spirituality and work stress have a detrimental link (Jalan, S., & Garg, N., 2021; Saxena, A., Garg, N., Punia, B. K., & Prasad, A., 2020; Daniel, 2015).

The following hypothesis has been developed for the investigation based on the current literature:

- H2. Workplace spirituality negatively affects occupational stress

Occupational Stress and Organizational Commitment

Saadeh, I. M., & Suifan, T. S., (2019) find a negative relationship between stress and commitment. Job stress has been found to have a favorable link with continued commitment but not with affective commitment (Lambert, Hogan & Keena, 2015). Surprisingly, while job ambiguity had no effect on continuance commitment, role conflict did. Workplace stress has bad and severe consequences on affective and continuance commitment (Cicei, 2012). Based on the present literature, the following hypotheses have been proposed:

- H3(a).Occupational stress negatively affects affective commitment
- H3(b).Occupational stress positively affects continuance commitment
- H3(c).Occupational stress negatively affects normative commitment

Given that the study suggests a clear correlation between workplace spirituality, job stress, and commitment, it's conceivable that job stress acts as a mediator, influencing the association between spirituality and commitment. As a result, the study proposes that when a person's spiritual level is really high, he or she perceives less stress at work, which increases his or her commitment to the organization.

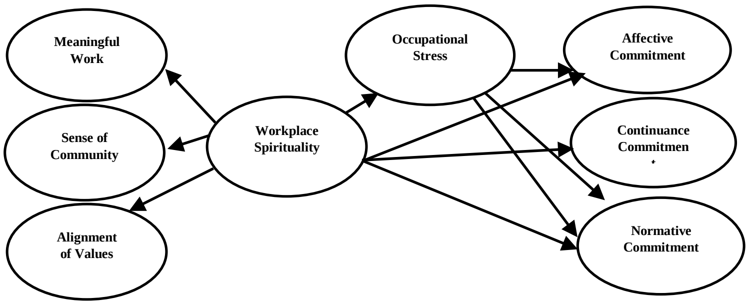
As a result, the hypotheses listed below are advanced.

- H4(a).Occupational stress mediates spirituality in the workplace and affective commitment
- H4(b).Occupational stress mediates spirituality in the workplace and continuance commitment
- H4(c).Occupational stress mediates spirituality in the workplace and normative commitment

Theoretical background

Self-determination theory and social exchange theory help explain the link between workplace spirituality and organizational commitment. According to the theory of self-determination (Ryan and Deci, 2000), autonomy, competence, and relatedness are three psychological requirements of human beings. They are intrinsically and naturally motivated to achieve these essential innate psychological needs. Workplace spirituality is linked to the self-determination theory's autonomous need, which drives people's desire for meaningful work and alignment with company ideals. People seek challenges and activities that are most suited to their abilities as a result of their quest for competence. As a result, higher adaptive capacity and delight, which come with competence, are developed, activating the workplace spirituality component of meaningful work. The desire to be connected is similar to the sense of community that is part of workplace spirituality, and it could be considered one of the main reasons why people strive for a sense of belonging. The theory of social exchange is a psychology theory that aims to explicate the "social elements that influence a reciprocal relationship's interaction". People measure a relationship's overall worth by subtracting its costs from the benefits it gives. An employee and the organization have a relationship in an organizational setting, and the value of the relationship for both parties will influence its fate. Employees would feel obligated to respond to the source of treatment in a kind, whether through positive attitudes or behaviors which may be in the form of enhanced commitment if they are treated favorably by the organization (Blau, 1964).

Figure1: *Proposed Conceptual Model*



II. Research Design and Methods

Data Collection and Sample

The study's participants were employees from IT companies all around India. A convenience sample method was used to conduct the current inquiry. To widen the scope of our survey, we used Google Surveys, LinkedIn, and personal e-mails to collect responses. There were 483 responses received in total, with 447 being finalized for analysis due to 36 incomplete/incorrect responses. 239 men were among the total number of responders. The responders' average age is 35.17 years old, and they've spent an average of 9.52 years with the organization. To achieve the goals, a descriptive research approach was adopted.

Measures: Workplace spirituality: Workplace spirituality was measured through a structured questionnaire used by Milliman et al., 2003. The measure looked at three components of workplace spirituality: meaningful work, value alignment, and a sense of belonging.

Meaningful work- The meaningful work scale includes six components from Ashmos and Duchon's, (2000) "meaningful work" scale.

Sense of community- Milliman et al., (2003) developed this scale, which consists of seven components.

Alignment with organizational values- This scale is made up of eight components from Ashmos and Duchon's, (2000) spirituality scale.

Occupational stress: Occupational stress was assessed using a Motowidlo et al., (1986) structured questionnaire. On a spectrum of one to seven, one represented "strongly disagree" and seven represented "strongly agree". Organizational commitment: Allen & Meyer, (1990) had previously designed and validated an instrument to assess organizational commitment. Affective commitment, continuation commitment, and normative commitment were the three dimensions of commitment on the scale consisting of 8 statements each. Respondents ranked their commitment levels on a seven-point Likert scale, from one ("strongly disagree") to seven ("strongly agree").

III. Results and Discussion

For the purpose of reporting results, PLS-SEM employs a two-phase strategy. The validity and reliability of the elements of workplace spirituality were determined in the first phase, and the measuring model or outer model was reviewed. Then the latent variable scores of these elements were used to measure the construct of second order, i.e., workplace spirituality. During the second phase of the study, the effect of a second-order composite of workplace spirituality was evaluated on occupational stress and all three dimensions of commitment.

Measurement model

First order CFA

The internal consistency of a measuring instrument determines a construct's reliability, which ensures its accuracy and precision. When a dependable metric is used several times, the findings are consistent (Hair, Anderson, Tatham, and Black, 1998). The value of reliability measures i.e., Cronbach's Alpha, Dijkstra and Henseler's rhoA, and Composite Reliability (CR) exceeded the 0.70 thresholds (Hair, Howard & Nitzl, 2020; Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018). The constructs' convergent and discriminant validity are used to determine validity. Convergent validity exists when many items assessing the same construct are significantly associated, showing item convergence (O'Leary-Kelly and J. Vokurka, 1998). Convergent validity was tested using factor loading and average variance extracted (AVE). Loadings of more than 0.708 and a value of AVE between 0.50- 0.95 are recommended (Hair, Sarstedt & Ringle, 2019; Diamantopoulos, Sarstedt, Fuchs, 2012; Drolet and Morrison, 2001). The internal reliability and convergent validity results of all the items were appropriate except one item of normative commitment (NC7) which had a factor loading of 0.44. As the loading was much below the threshold value and was also affecting AVE, the item was removed and then the model was run again. Outcomes are described in Table 1.

Table 1: Outcomes of the Measurement Model Evaluation (First stage)

Construct	**Item**	**Type**	**Cronbach's Alpha**	**rhoA**	**CR**	**Factor loading**	**AVE**
Meaningful Work	MW1	Reflective	0.884	0.893	0.909	0.796	0.560
	MW2					0.816	
	MW3					0.800	
	MW4					0.844	
	MW5					0.704	
	MW6					0.729	
Alignment of Values	AV1	Reflective	0.895	0.900	0.917	0.709	0.583
	AV2					0.729	
	AV3					0.675	

	AV4					0.616	
	AV5					0.828	
	AV6					0.836	
	AV7					0.843	
	AV8					0.838	
Sense of Community	SoC1	Reflective	0.863	0.866	0.894	0.689	0.548
	SoC2					0.698	
	SoC3					0.682	
	SoC4					0.757	
	SoC5					0.752	
	SoC6					0.797	
	SoC7					0.795	
Occupational Stress	OS1	Reflective	0.700	0.717	0.816	0.803	0.527
	OS2					0.636	
	OS3					0.724	
	OS4					0.732	
Affective Commitment	AC1	Reflective	0.884	0.893	0.909	0.763	0.560
	AC2					0.85	
	AC3					0.842	
	AC4					0.842	
	AC5					0.801	
	AC6					0.647	
	AC7					0.588	
	AC8					0.597	
Continuance Commitment	CC1	Reflective	0.898	0.901	0.917	0.753	0.582
	CC2					0.805	
	CC3					0.789	
	CC4					0.807	
	CC5					0.830	
	CC6					0.695	
	CC7					0.703	
	CC8					0.707	
Normative Commitment	NC1	Reflective	0.884	0.897	0.907	0.735	0.584
	NC2					0.735	
	NC3					0.777	
	NC4					0.729	
	NC5					0.737	
	NC6					0.813	
	NC8					0.816	

Source: *Calculations by the author*

Discriminant validity assures that the model's constructs are distinct and unrelated to one another. Instead of using Fornell and Larker's Criterion, (1981), the discriminant validity was assessed through the more current and conservative HTMT method. Maximum ratios of 0.85 for the conservative approach (Voorhees, Brady, & Calantone, 2016; Henseler, Ringle, & Sarstedt, 2015; Kline, 2011) and 0.9 for the liberal approach (Gold, Malhotra, & Segars, 2001) are acceptable. According to the HTMT inference technique, all HTMT values must be less than 1. The confidence intervals for HTMT inference were well inside the boundaries, demonstrating the constructs' uniqueness according to empirical standards. Table 2 displays the discriminant validity results.

Table 2: HTMT Correlation Ratio for Discriminant Validity Evaluations

HTMT Ratio of Correlations	**Original Sample**	**2.50 %**	**97.50 %**

	(O)		
Alignment of Values -> Affective Commitment	0.704	0.616	0.779
Continuance Commitment -> Affective Commitment	0.643	0.635	0.675
Continuance Commitment -> Alignment of Values	0.720	0.631	0.800
Meaningful Work -> Affective Commitment	0.666	0.576	0.751
Meaningful Work -> Alignment of Values	0.793	0.723	0.859
Meaningful Work -> Continuance Commitment	0.663	0.576	0.743
Normative Commitment -> Affective Commitment	0.668	0.593	0.735
Normative Commitment -> Alignment of Values	0.759	0.684	0.828
Normative Commitment -> Continuance Commitment	0.794	0.738	0.845
Normative Commitment -> Meaningful Work	0.700	0.622	0.773
Occupational Stress -> Affective Commitment	0.838	0.760	0.909
Occupational Stress -> Alignment of Values	0.750	0.730	0.775
Occupational Stress -> Continuance Commitment	0.850	0.771	0.925
Occupational Stress -> Meaningful Work	0.847	0.827	0.867
Occupational Stress -> Normative Commitment	0.797	0.833	0.959
Sense of Community -> Affective Commitment	0.737	0.666	0.797
Sense of Community -> Alignment of Values	0.846	0.787	0.901
Sense of Community -> Continuance Commitment	0.763	0.700	0.819
Sense of Community -> Meaningful Work	0.759	0.694	0.821
Sense of Community -> Normative Commitment	0.842	0.790	0.890
Sense of Community -> Occupational Stress	0.824	0.816	0.837

Source: *Calculations by the author*

Second order CFA

After this, the second-order construct of workplace spirituality got tested for reliability and validity. To assess workplace spirituality, latent variable scores of meaningful work, sense of community, and alignment of values were employed. Table 3 and Table 4 explain the second-order internal reliability and convergent validity results.

Table 3: Outcomes of the Valuation of the Measurement Model (Second order)

Construct	**Cronbach's Alpha**	**rhoA**	**CR**	**AVE**
Workplace Spirituality	0.884	0.888	0.928	0.811
Occupational stress	0.700	0.717	0.816	0.527
Affective Commitment	0.884	0.893	0.909	0.56
Continuance Commitment	0.898	0.902	0.917	0.582
Normative Commitment	0.884	0.897	0.907	0.584

Source: *Calculations by the author*

Table 4: Results of Factor Loading (Second order)

Latent Variables	**Factor Loadings**
Meaningful Work	0.879
Sense of Community	0.908
Alignment of Values	0.914

Source: *Calculations by the author*

Table 5 explains the results of discriminant validity at a 5% level of significance.

Table 5: HTMT Correlation Ratio for Discriminant Validity Evaluations (Second order)

HTMT Ratio of Correlations	**Original Sample (O)**	**2.50%**	**97.50%**
Continuance Commitment -> Affective Commitment	0.814	0.788	0.826
Normative Commitment -> Affective Commitment	0.668	0.596	0.737
Normative Commitment -> Continuance Commitment	0.794	0.738	0.845
Occupational Stress -> Affective Commitment	0.838	0.762	0.913
Occupational Stress -> Continuance Commitment	0.850	0.768	0.927
Occupational Stress -> Normative Commitment	0.847	0.834	0.869
Workplace Spirituality -> Affective Commitment	0.779	0.708	0.842
Workplace Spirituality -> Continuance Commitment	0.795	0.728	0.856

Workplace Spirituality -> Normative Commitment	0.841	0.812	0.905
Workplace Spirituality -> Occupational Stress	0.824	0.812	0.848

Source: *Calculations by the author*

Structural model

In structural model assessments (Hair, Hult, Ringle, & Sarstedt, 2017), the link between the constructs and their predictive significance was investigated. To begin, values for the Variance Inflation Factor (VIF) and tolerance were determined and discovered to be less than 3.33. (Diamantopoulos 2008) The outcomes of VIF are shown in Table 6.

Table-6: Variance Inflation Factor (VIF) of the inner model

	Affective Commitment	Continuance Commitment	Normative Commitment
Occupational Stress	1.878	1.931	2.008
Workplace Spirituality	2.763	2.281	2.563

Source: *Calculations by the author*

The next step was to use the bootstrapping procedure with 5000 subsamples to determine the path coefficients' significance and relevance, which might be anywhere between -1 and +1 (Hair et al., 2020). The structural model evaluations are depicted in Figure 2 and Table 7 as follows:

Figure-2: *Structural path relations*

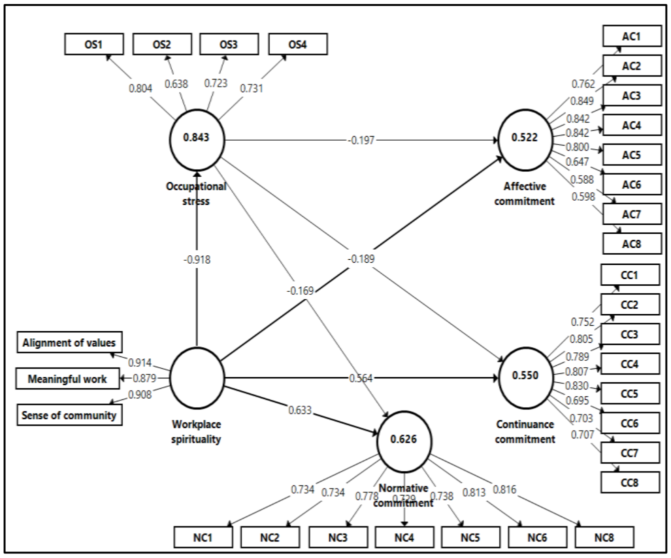


Table 7: Structural Model Assessments

Hypotheses	Path Relationship	Standardized Beta (β)	T Statistics (|O/STDEV|)	P Values	2.50%	97.50 %	Result
H1a	Workplace Spirituality -> Affective Commitment	0.538	5.600	0.000***	0.341	0.721	Supported
H1b	Workplace Spirituality -> Continuance Commitment	0.564	5.959	0.000***	0.378	0.749	Not Supported
H1c	Workplace Spirituality -> Normative Commitment	0.633	7.214	0.000***	0.456	0.802	Supported
H2	Workplace Spirituality -> Occupational Stress	-0.918	12.433	0.000***	-0.932	-0.902	Supported
H3a	Occupational Stress -> Affective Commitment	-0.197	2.039	0.042**	-0.386	-0.002	Supported
H3b	Occupational Stress -> Continuance Commitment	-0.189	1.907	0.057	-0.378	0.008	Not Supported
H3c	Occupational Stress -> Normative Commitment	-0.169	1.860	0.063	-0.346	0.012	Not Supported
H4a	Workplace Spirituality -> Occupational Stress -> Affective Commitment	0.180	2.038	0.042**	0.002	0.354	Supported
H4b	Workplace Spirituality -> Occupational Stress -> Continuance Commitment	0.173	1.907	0.057	-0.007	0.348	Not Supported
H4c	Workplace Spirituality -> Occupational Stress -> Normative Commitment	0.155	1.860	0.063	-0.011	0.316	Not Supported

Source: *Calculations by the author; Coefficients of the Path (*p<0.01, **p<0.05, ***p<0.001)*

Table 7 demonstrates that workplace spirituality is the most prevalent element that negatively influences IT employees' occupational stress (β = -0.918, p<0.001), confirming H2. Workplace spirituality had the second-largest impact on normative commitment (β=0.634, p<0.001) and after that on affective commitment (β=0.538, p<0.001), which supported H1c and H1a respectively. Despite the fact that the association between workplace spirituality and continuance commitment has a value of 0.564, which is statistically significant, the hypothesis is rejected due to the positive relationship between the two. Occupational stress has a detrimental influence on all categories of commitment, although the outcomes are not statistically significant except for stress and affective commitment. As a result, only H3a is acceptable. Furthermore, Occupational stress appears to be a key mediator in the association between workplace spirituality and affective commitment (β=0.180, p<0.05). Spirituality at work reduces negative work stress effects, which is good for affective commitment. The next step is to calculate the values of R^2. In-sample predictive power is another name for the R^2 (Rigdon, 2012). Explanatory power is measured by R^2 that runs from 0 to 1, higher values suggest greater explanatory power. The R^2 values of 0.75, 0.50, and 0.25, respectively, are regarded as substantial, moderate, and weak, respectively (Henseler, Ringle and Sinkovics, 2009; Hair, Ringle, and Sarstedt, 2011). Affective, continuance, normative commitment and occupational stress were found to have coefficients of determination (R^2) of 0.522, 0.550, 0.626, and 0.843 respectively, which is quite good. The effect size of f^2 and Q^2 were used to assess the predictive value and relevance of the suggested model. The proposed limits are 0.35 (for substantial impact), 0.15 (for moderate impact), and 0.02 (for modest impact) (Cohen, 1988). Workplace spirituality shows a moderate effect on normative commitment (f^2=0.168) and a small to moderate effect on continuance commitment (f^2= 0.111) and affective commitment (f^2=0.095) while occupational stress has a small effect on affective (f^2= 0.013), continuance (f^2= 0.012) and normative commitment (f^2= 0.012). Following this, Stone- Geissers Q^2 was used to study the structural model's predictive validity, which yielded 0.257, 0.289, and 0.345 for affective, continuance, and normative commitment, respectively, showing the model's predictive significance is moderate. (Geisser, 1975; Stone, 1974). If the value is higher than 0.02, the model has sufficient predictive power and can be used to extrapolate future results (Richter, Cepeda & Roldan, 2016). Q^2 for occupational stress was found to be 0.441, indicating strong predictive relevance, implying that workplace spirituality, as well as occupational stress, are crucial in the study's conceptual model and the findings can be applied to new scenarios in the future. Finally, the goodness of fit criterion was assessed using SRMR indices. The SRMR value of the study's model is 0.078, which is less than the cut-off value of 0.08, indicating that it has a high power of explanation (Henseler, Hubona & Ray, 2016; Hu and Bentler, 1999).

IV. Conclusion

With the changing times, the IT sector is facing various kinds of uncertainties. Indian IT exports have remained heavily reliant on the US and European markets. The US government's anti-outsourcing policies, the developed world's slowing economy, and the fast-growing competition from the Philippines, China, and Costa Rica are all putting pressure on India's status as the global outsourcing hub. In addition, the country's IT sector is short on professionals and venture money. Another issue that the sector is dealing with, is the heightened threat of cyber security posed by cloud computing, e-commerce, and digital payments. The number of patents linked to information technology filed by Indian enterprises has remained relatively low. The strong rivalry that exists in today's global and local marketplaces compounded by demanding work schedules and changing work environments, according to Altaf and Awan (2011), has motivated organizations to establish extremely lofty goals for their staff. As a result, employees are frustrated, vulnerable, worried to a great degree, and prone to increased levels of stress (Gupta, Kumar, and Singh, 2014). In such a painful atmosphere, cultivating a spiritual presence of God's values at work, such as caring, kindness, peace, and love, is crucial for rewarding the inner life of employees.

Limitations and future research directions

While the findings are encouraging, it's worth noting that this research relied solely on a self-report survey instrument. Though precautions have been taken while collecting data, due to the fact that this is a self-report study, it's probable that some of the scales have common method variance, inflating statistical relationships. Spirituality is subjective and very personal, thus It would be perfect if other research methodologies, such as employee interviews and supervisor assessments, were used to cross-validate these measurements. Future research may employ a two-source technique. A longitudinal study design could also be useful. We used convenience sampling in this case; however, any probability sampling approach might be used. It will improve the results' legitimacy. Finally, in this study, a cross-sectional strategy was used. Based on cross-sectional studies, no researcher can definitively demonstrate causal correlations. As a result, any long-term study could confirm the findings of the current studies. Future research could concentrate on how to conceptualize and quantify workplace spirituality using both qualitative and quantitative methods.

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DOI No: 10.5958/0973-9343.2023.00021.2

FINTECH AND INDUSTRY 4.0: A STUDY ON DRIVERS WITH REFERENCE TO DIGITAL BANKING SECTOR

Deepa Joshi*Sanjay Sharma**

Purpose: *The purpose of this paper is to investigate drivers of FinTech in India with reference to banking sector, customers' awareness and acceptance of Digital Banking.*

Design/methodology/approach: *The present study is of descriptive and exploratory nature based on primary as well as secondary data. A well-structured questionnaire was circulated to collect the data using simple random sampling. The data was analyzed by using Factor analysis and Chi square test as statistical tools.*

Findings: *FinTech is effective in digital banking sector. Majority of respondents know about the BancTec and FinTech and are using it very often proved that there is an awareness related to Digital Banking amongst Indian banking customers The factors extracted were named as – Unique digi-fin experience, Easy and user friendly, 24*7 accessibility, Safe and secure transactions and Enhanced customer experience.*

Research limitations/implications: *Impact of demographics on the usage of FinTech was not studied. Geographical area of the study was restricted to Indore city only. Future research could use demographic variables and also extend the area of the study to State level to verify the impact of FinTech on banking sector.*

Practical implications: *The findings have implications for FinTech professionals and banking sectors to take advantages of multiple benefits of digital banking in content acquisition, confidence in knowledge and ability, and action taking when they communicate with their customers.*

Originality/value: *This study is the first of this kind to focus on extracting the influential drivers of FinTech and found the effectiveness of FinTech in banking sector.*

Keywords: *FinTech, Digital Banking, Industry 4.0, financial services, banking customers, awareness level*
JEL Classification: *H80*

Fintech refers to the use of technology in an individual's, businesses, and other people's financial transactions. Individuals and financial institutions' spending, saving, investing, and borrowing habits are affected. India's FinTech business is growing at a spectacular rate as a result of increased digitalization. Digital payments users are at the top of the FinTech sector in Asia in 2020, according to the Statista Research Department Report, May 2021. Around 2.1 billion Indians made digital payments this year, resulting in the greatest transaction value of nearly $3.13 trillion USD. By 2025, it is expected that the number of users would have risen to 3.1 billion.

Evolution of Fintech in India

Between 1991 and 2000, the Indian banking industry began to fully embrace technology. During this time, the Indian government began implementing technology in banks using a variety of payment systems such as MICR, EFT, and others. FinTech dominated the US and UK banking industries from 2000 to 2005, and was also attempting to make a mark on the Indian banking business by providing a variety of customer-oriented services. FinoPay Tech and EKO India were two of the most important companies at the time. The rural areas were where they were most concentrated. Between 2005 and 2010, prominent financial start-ups such as Oxigen, Paytm, Freecharge, and a slew of other mobile wallets popped up. More than 100 fintech start-ups in lending, more than 40 in personal finance management, and more than 90 in investment management were founded between 2010 and 2014. FinTech in India grew and prospered after demonetization in 2016. It introduced the India stack, which includes Aadhar, eKYC, UPI, and other technologies. NeoBanks began to take shape in 2019. NeoBanks pushed trade financing and business-to-business (B2B) in a new direction.

Financial Technology

Financial technology is a combination of technology and innovation aimed at competing with traditional financial methods in the supply of financial services. It is a new industry that employs technology to improve financial activities.

FinTech companies in India are setting new standards for financial services (Mathur, H.2020) various government programmes such as the Jan Dhan Yojana, Aadhaar, and the advent of UPI, which give a sound basis to enhance financial inclusion in India ((https://www.financialexpress.com), are encouraging the fintech business in India.

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Males and females adopted FinTech apps at a rate of 88 percent and 84 percent, respectively, while those aged 25 to 44 are the largest users of FinTech's at around 94 percent, while FinTech adoption is around 73 percent globally in the same age group. (https://bfsi.economictimes.indiatimes.com)

India is one of the world's fastest growing FinTech marketplaces. With China, India has the highest FinTech adoption rate in the world. The $65 billion in digital payments in 2019 is predicted to grow at a CAGR of 20% until 2023. (www.investindia.gov.in) Multiple characteristics distinguish markets around the world, and the FinTech industry is no exception. India stands out as a distinct market for FinTech, particularly the payments community, with its own set of difficulties and potential. (S. Adithya, 2019)

Fintech is a colloquial phrase for financial technology, which refers to any technology utilized in the financial services business. Online payment methods such as PayPal, Apple Pay, TransferWise, and Pioneer are among the first to come to mind. FinTech is booming because it has dramatically increased access to financing for small business owners, particularly women, minorities, and immigrants, who were previously underserved before technological advancements levelled the playing field.

Fintech is a phrase that refers to new technology that automates and enhances financial service delivery. Banks, on the other hand, are financial institutions that are licensed to accept deposits and make loans from their customers.

FinTech (financial technology) has exploded all over the world. (A. S. Kavuri and A. Milne, 2018) FinTech, or Financial Technology, is a term that describes a company that combines emerging technological trends to offer better financial solutions to its customers in the form of digital payments and transactions. (Aakriti Suri Saumya Uniyaland) (,2020) In recent years, the Indian fintech industry has seen a slew of new entrants. With each new company, the industry has expanded significantly and is gaining international recognition. According to the most recent CB Insights reports, these are the 20 Indian fintech startups that have been named among the top 250 global promising startup companies (Wilson, R., 2020), and UPI, BHIM, Payment wallet, digital bank, and many other services are available, and we use them on a daily basis. Which best portrays the importance of money and technology in our lives.

The focus is on four fintech topics in this primer: digital lending, payments, blockchain, and digital wealth management, which are of particular interest because to their rapid growth, technical disruption, and regulatory and other issues.

Trends in Fintech

"In 2020, new financial services technology trends will emerge. The ability of financial organizations to shape the sharing economy and consumer intelligence, as well as deal with breakthroughs in technology like blockchain, robotics, Artificial Intelligence (AI), and more, is predicted to drive their growth." (https://www.kelltontech.com)

Artificial Intelligence in Fintech

The banking business has been transformed by artificial intelligence (Hill, K., 2020) Few business titans had the bandwidth to deal with the intrinsically quantitative character of our now tech-savvy society before AI and the rise of FinTech. These AI use examples show how AI has revolutionized the FinTech industry. (Buttice, C., 2020) FinTech firms and financial institutions utilize AI and machine learning to boost efficiency and give customers with more relevant, accessible, and intuitive financial services and products. (2020, Darcy Tyrrell)

Blockchain in Fintech

Fintech is revolutionizing the financial industry, and blockchain development companies in this field will have a significant competitive advantage in the future (Shah, P,2019) A paper recently released by the Ministry of Finance's steering group on Fintech-related topics highlighted the relevance of Blockchain, with a focus on four blockchain applications in Fintech (Jacob, C,2020) Blockchain technology is revolutionizing the fintech business in a variety of ways, including removing third parties, lowering operational time and cost, and improving identity verification (Srivastav, S,2020).

Cloud Computing in Fintech

Using the Cloud Fintech organizations may rapidly scale up and down with full control while remaining compliant with regulatory standards thanks to cloud infrastructure. (Naser, A. T., 2020) FinTech has experienced significant growth and continues to do so thanks to cloud technologies. FinTech cuts CAPEX and OPEX costs while expanding the service portfolio and improving the user experience. (Ray, T., 2020).

NLP-based chatbots

According to PwC India, Fintech will revolutionize mobile banking by utilizing NLP-based chatbots and inventing Conversational User Interface (CUI). These chatbots will be able to reply to consumer issues in real time and offer viable solutions, hence improving the customer experience. (https://economictimes.indiatimes.com/bfsi)

Industry 4.0

"A name for the current trend of automation and data exchange in manufacturing technologies, encompassing cyber-physical systems, the Internet of things, cloud computing and cognitive computing, and establishing the smart factory," according to the definition of Industry 4.0. Due to increased interconnection and smart automation, the Fourth Industrial Revolution, also known as Industry 4.0, envisions significant change in technology, industries, and societal patterns and processes in the twenty-first century.

Components:
The application of the Fourth Industrial Revolution operates through:

- Mobile devices
- Internet of things (IoT) platforms
- Location detection technologies (electronic identification)
- Advanced human-machine interfaces
- Authentication and fraud detection
- Smart sensors
- Big analytics and advanced processes
- Multilevel customer interaction and customer profiling
- Augmented reality/ wearables
- On-demand availability of computer system resources
- Data visualization and triggered "live" training

Relation between fintech and industry 4.0:
Industry 4.0 has had a substantial impact on financial services, just as it has on manufacturing and other global industries. Online payments, digital loans, plastic money, crypto currency, online forex trading, and many other financial activities in the financial sector are all affected by industry 4.0, often known as I-4. All of this is thanks to the information technology revolution, which is fueled by the internet, software consultancy, and software development. The global software team of qualified individuals deserves credit for this digital revolution. The fourth industrial revolution has spread its wings across all industries, having a positive impact. Financial services are another business that has made great use of industry 4.0's capabilities. Banking, insurance, mortgages, forex, stocks, and many other financial industries are growing across the globe as a result of the positive impact of digital innovation and financial process automation.

I. Review of Literature

The process of digitization of our domestic and professional lives cannot be overlooked. This digitization has introduced new ways to financial services namely online banking, ATMs, and credit cards. Microfinance institutions with the side hand of FinTech companies in India are working on technology advancement which in lead to benefitting middle and underprivileged class by providing easy access to capital (Kapadia, 2020). Fintech is able to be disturbing financial systems (Allen et. al, 2020). New and updated technology is used in introducing a way of new banking and lending products that are increasingly becoming faster, cheaper and more accessible (Barry, E. ,2020). Introduction of Modern FinTech i.e. financial technology is related to any innovation that involves financial transactions, whether it is for personal use or for business. There was a time when FinTech was used only in the back office operations of banks or stock trading companies. The boom in the internet usage and mobile computing had pushed FinTech to become a continuing global revolution. Today, FinTech has already established itself as an important element in today's digital world. With expanding technological tools for personal and commercial finance, it is expected to further grow in future (Andre, L., 2019)
The role of artificial intelligence, augmented reality and block-chain in digital banking sector. AR is pervasive now; it has a remarkable impact in every sector. AR technologies aid in increasing efficiency, reducing process costs, and various commercial benefits. At present, augmented reality technology is having a vibration impact in numerous industry sectors. From being adopted in healthcare, oil and gas construction, and retail sector as well as manufacturing, AR technologies have currently been adopted with the motive to increase process efficiency, reduce costs and bring about a broad range of commercial benefits (Dubey, 2019).

India's FinTech landscape, approaching the analysis from a FinTech, regulatory, Investment, and talent standpoint. The study explained the key pillars of a FinTech ecosystem in a country and provided a good overall view of the state of FinTech at a glance. According to him, India's FinTech sector is growing rapidly, supported by a large consumer base, unmet financial needs, SME credit gap, and a conducive environment favored by regulatory initiatives and policies. Much of FinTech adoption in the country is driven by digital payments, which has got motivation by recent innovations like United Payments Interface (UPI) platform. India has experienced a huge shift from offline cash transactions towards digitization, majorly due to Government initiatives and increasing mobile and internet penetration. Banks and the financial services industry are also working in collaboration with FinTechs which has resulted in a strong B2B FinTech presence in the country (Mittal, 2019). Singapore and India are at the first position to in the implementation of FinTech. On one side, India offers the highest global returns on investment in FinTech, Singapore has developed a cutting-edge sandbox for trying new FinTech products and has a world-class digital and physical infrastructure. There is a large scope for mutually beneficial collaboration. The researchers suggested that collaboration between governments requires information sharing on policies, consultations on data privacy, cyber security and more and interoperability allows for seamless fund transfers across geographical zones via a single account (Randhawa, Hao & Murali, 2018).
FinTech is the latest innovation in the area of banking and financial services. FinTech has to be carefully handled to challenge the domination of traditional financial institutions. In India, the traditional financial institutions are undergoing a period of turbulence, which has in the last few years witnessed the growth of bad loans, dissatisfaction among the customers regarding several financial products and services, and increasing loss of confidence among the public with an

imminent fear of a financial crisis. The opportunity seems to bloom for the emerging economies but FinTech is still a nascent player in the Indian financial sector. Therefore, collaboration with the traditional financial institutions would help in providing a new direction to India's financial sector (Gurung, 2018). Entering Industry 4.0 includes two unique aspects: first, meeting new requirements through new goods and processes, and second, increasing productivity through process improvements (Zambon et al. 2019). To bring a new generation of clients into the marketplace and do business in this transformation, traditional banking services and products must be completely rethought. Some of the benefits derived from technology in banks include increased productivity, creative products, quick transactions, seamless fund transfers, real-time information systems, and effective risk management (Saravanan and Muthu Lakshmi 2016).

Surprisingly, Industry 4.0 need its own finance system. One of the most essential tactics of Banking 4.0 is the use of Industry 4.0 technology for digitizing assets, creating a digital identity, delivering special offers to consumers, offering personalization, and so on. For example, behind Japan and the United States, South Korea now has the third-largest crypto currency market, and Shinhan Bank, the country's second-largest bank, has recently joined KT Corp, the country's second-largest service provider, and the country's telecommunications have cooperated. The creation of a block chain-based platform was the focus of this collaboration. For a long time, the banking industry was in charge of deciding how to connect with customers and deliver customer care. The consumer determines the best interaction mix in Generation Banking.

Objectives of the study:

- To identify the drivers of FinTech in India with reference to banking sector.
- To understand the customers' awareness and acceptance of Digital Banking.

Hypotheses:

H_{01}: FinTech is not effective in digital banking sector.

H_{02}: There is no awareness related to Digital Banking amongst Indian banking customers.

II. Research Design and Methods

The present study is a blend of descriptive and exploratory concept. The study is based on primary as well as secondary data. The primary data is collected from 250 respondents from Indore region. A well-structured questionnaire was circulated to collect the data using simple random sampling. The data was analyzed using Percentage analysis, Factor analysis and Chi square test as statistical tools. The software used for data analysis are SPSS 25 and Excel.

III. Result and Discussion

Table -1

Reliability Test

Cronbach's Alpha	No. of Items
0.872	22

The test of reliability is applied to test whether the data collected for the study is reliable or not. The value of the Chronbach alpha shows the accuracy of the data. In this case the value of C alpha was found to be 0.872, which depicts that the data collected is reliable and can be analyzed further.

Table - 2

Sphere city Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0.897**
Bartlett's Test of Sphericity	Approx. Chi-Square	1250.560
	df	231
	Sig.	0.000

The test was applied to check the normality and validity of the data. The value was found to be 0.897, which indicated that the data is valid.

Table -3

Demographic Distribution of Respondents

Gender		
	N	**%**
Male	112	44.8
Female	138	55.2
Total	250	
Age		
Below 20 years	9	3.6
20 to 25 years	95	38
25 to 30 years	107	42.8
30- to 35 years	19	7.6
35 to 40 years	10	4
Above 40 years	10	4
Total	250	
Annual Income		
Less than 3L	27	10.8
3L to 6L	182	72.8
6L to 9L	34	13.6
More than 9L	7	2.8
Total	**250**	
Area		
Rural	5	2
Semi urban	33	13.2
Urban	212	84.8
Total	**250**	

The above table shows the demographic profile of the respondents. The gender wise distribution shows that 55.2% of the total respondents were female whereas 44.8% were males. Age wise the major category of respondents belonged to age group of 25 to 30 years with 42.8%, whereas other respondents belong to below 20 years, 20 to 25 years, 30 to 35 years, 35 to 40 years and above 40 years with percentage 3.6%, 38%, 7.6%, and 4% respectively.

For analysis annual income was considered in 4 levels i.e. Less than 3 Lakhs, 3L to 6L, 6L to 9L and More than 9L. The major respondents had income level 3L to 6L as their income level with 72.8% as the contribution in income category. The remaining levels had 10.8%, 13.6% and 2.8% respectively. The geographical distribution of respondents was divided into 3 categories i.e. Rural, Semi-Urban and Urban. It was found that respondents from urban areas participated the most with 84.8% whereas Semi-Urban and Rural areas had 13.2% and 2% respectively.

Exploratory Factor Analysis:

EFA was performed to extract the factors which drive respondents to use the FinTech services. Total 5 factors were extracted from 22 items.

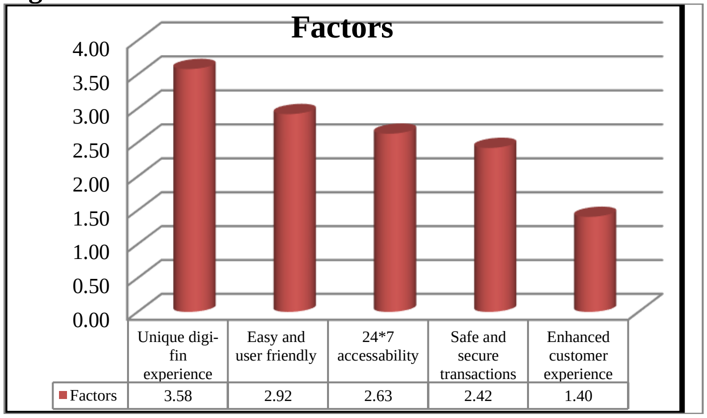
Table – 4

Factors	Factors
Unique digi-fin experience	3.58
Easy and user friendly	2.92
24*7 accessibility	2.63
Safe and secure transactions	2.42
Enhanced customer experience	1.40

The above table shows the Factor name and the loading of each factor. The factors extracted were named as – Unique digi-fin experience, Easy and user friendly, 24*7 accessibility, Safe and secure transactions and Enhanced customer experience.

The most loaded factor amongst all five was found to be Unique digi-fin experience with factor load 3.58, the second most loaded factor was ease and user friendly with factor load 2.63. Factor named 24*7 accessibility was found to have 2.63 as the factor load where as Safe and secure transactions and Enhanced customer experience had 2.42 and 1.40 loading respectively.

Figure - 1



Hypotheses Testing

H0: There is no awareness related to Bank-Tech amongst Indian banking customers.

Table -5

Number of respondents having awareness towards online payment Apps

Are you aware about online payments app like (example Paytm, Google Pay for investment or other financial Services)		
Yes	211	84.4
No	39	15.6
Total	250	

Figure -2

Graphical presentation of Number of respondents having awareness towards online payment Apps

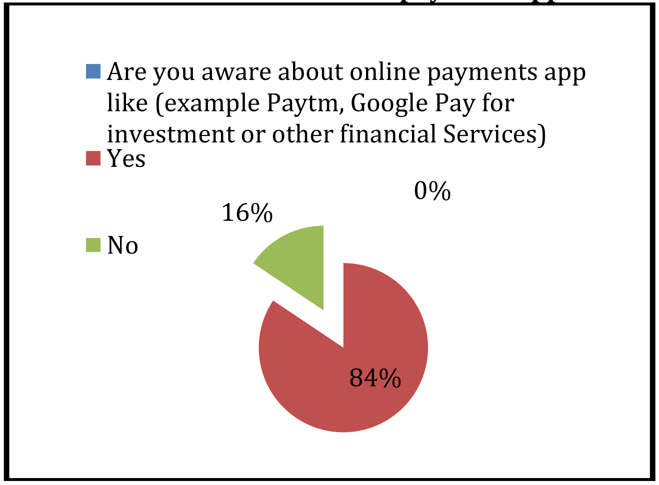


Table -6
Number of respondents having preference towards different online apps

When it comes to payment through apps you prefer		
Wallet to Wallet	8	3.2
UPI to Bank Transfer	143	57.2
Bank to Bank Transfer	67	26.8
Wallet to UPI	32	12.8
Total	250	

Figure -3
Number of respondents having preference towards different online apps

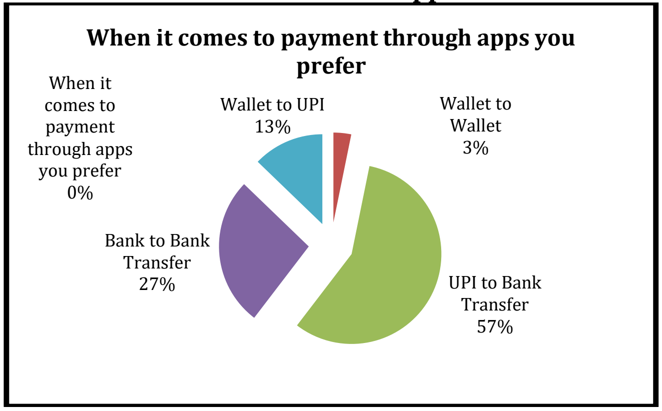
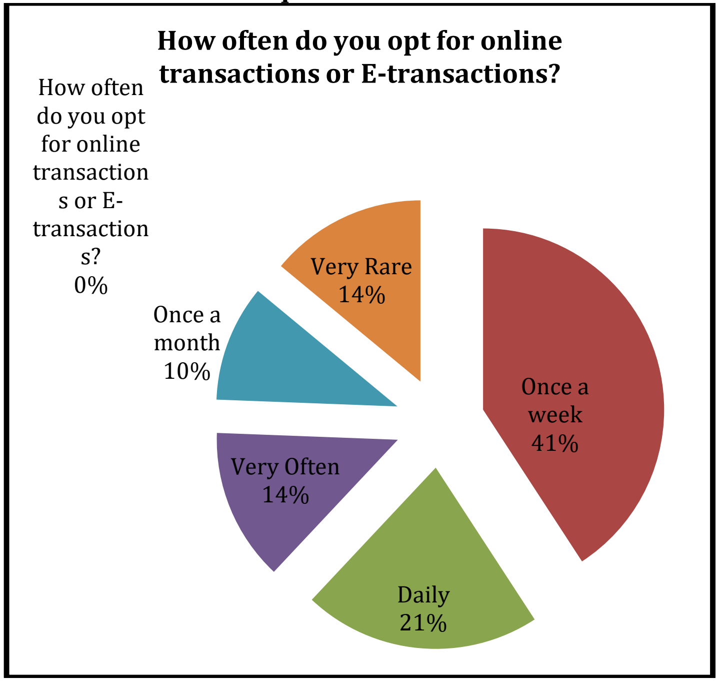


Table -7
Number of respondents having different frequencies of E-transactions

How often do you opt for online transactions or E-transactions?		
Once a week	102	40.8
Daily	53	21.2
Very Often	34	13.6
Once a month	26	10.4
Very Rare	35	14
Total	250	

Figure - 4
Graphical presentation of number of respondents having different frequencies of E-transactions



From the above charts it is evident that the respondents have awareness about the bank tech. Majority of respondents know about the BancTec and fintech and are using it very often. So the null hypothesis on the basis of percentage analysis is rejected.

Chi-Square Test

The Chi-Square test is a statistical tool used by researchers to assess the differences between categorical variables in the same population. And also helps to find out the effectiveness. In this case the Chi Square test is applied to check the effectiveness of the fintech

H_{01}: Fintech is not effective in digital banking sector.

Table -8, Fintech use * User profile Cross tabulation

			User profile		**Total**
			Non-U	**Users**	
Fintech use	**No**	**Count**	4	35	39
		Expected Count	0.8	38.2	39.0
	Yes	**Count**	1	210	211
		Expected Count	4.2	206.8	211.0
Total		**Count**	5	245	250
		Expected Count	5.0	245.0	250.0

Table -9, Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	16.071[a]	1	0.000		
Continuity Correction[b]	11.468	1	0.001		
Likelihood Ratio	10.527	1	0.001		
Fisher's Exact Test				0.002	0.002
N of Valid Cases	250				
a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .78.					
b. Computed only for a 2x2 table					

If this number (Pearson chi square value) is equal to or less than the prescribed alpha level, the result is significant (normally .05). Because the p-value is less than the typical alpha value in this circumstance, we'd reject the null hypothesis that the two variables are unrelated. To put it another way, the result is significant: the data indicates that the variables are linked. Hence we reject the null hypothesis ***"FinTech is not effective in digital banking sector".*** The rejection indicates that FinTech is effective in digital banking sector.

IV. Conclusion

In many ways, the development and application of financial technologies has altered the Banking and Financial Services businesses. Individuals may establish a culture of banking and investing, as well as a cashless society, using the range and depth of FinTech applications available today. Payments are made digitally. FinTech has the ability to transform the finance industry by utilizing new technologies. Technology, as well as cultivating better interactions between merchants and consumers tackling the problem of financial inclusion Block chain, Big Data, Artificial Intelligence (AI), Machine Learning, and a slew of other cutting-edge technologies will be beneficial to growing economies such as India. The study proved that there are five drivers of FinTech namely Unique digi-fin experience, Easy and user friendly, 24*7 accessibility, Safe and secure transactions and Enhanced customer experience. Out of which Unique digi-fin experience was found to be the most influential driver. It was also found that majority of the respondents were aware about the FinTech.

Limitations of the study:

- Impact of demographics on the usage of FinTech was not studied.
- Geographical area of the study was restricted to Indore city only.

Scope of the study:

- The present study can be explored to know the Impact of demographics on the usage of FinTech.
- Respondents from metro cities can be studied to have a better understanding and wider scope of FinTech.

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DOI No: 10.5958/0973-9343.2023.00022.4

A STUDY ON ANTECEDENTS OF FOUNDER ENDORSEMENT AND THEIR IMPACT ON BRAND EQUITY AND CONSUMER BUYING INTENTIONS IN JEWELLERY INDUSTRY

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Purpose: *The current research measures the impact of the attractiveness of founder endorsement on brand equity and consumer buying intentions in the jewellery industry. A jewellery purchase decision is related to investment, social esteem, beauty, and aesthetic aspects. Considerable costs in terms of monetary and psychic are involved. In the chosen brand understudy, the founder endorsement states that prospective jewellery buyers can photograph the gold ornament in any competitor's retail outlet along with price, making charges and depreciation value and inviting the buyers to compare with his brand with the other brands.*

Design/methodology/approach: *A structured questionnaire was designed to capture the impact of founder endorsement on brand equity and the effect on buying intention on a sample of 302. Confirmatory factor analysis was conducted to find the relationship among the constructs.*

Findings: *The findings reveal that attractiveness positively influences likability, meaning, and recall and these determinants, in turn, impact consumer buying intention.*

Originality/value: *The study indicates that founders can promote their products to effect positive consumer buying intention. An analytically proved model and outcomes from the analysis would enable marketers to plan an effective marketing communication strategy.*

Keywords -*Founder endorsement, Attractiveness, Likability, Meaning, Brand Equity and Buying Intention.*
JEL Classification- *M 310*

Founder endorsement is a relatively new marketing communication approach to build brands and to increase sales and profits. Founder endorsement, a kind of celebrity endorsement, has been less prevalent in the promotion of brands than celebrity endorsements. About 25 percent of advertisements use celebrity endorsement (Watch, 2006), advertisers induce desirable associations in the endorsed brands (Keller K., Strategic Brand Management, Building, Measuring and Managing Brand Equity., 2013) (Essex.Till, 1998), hoping to create suitable customer-based brand equity (Keller K., 1993) Though extant study explores the effect of celebrity supporters on brand recall (Kahle L. , 1985), and BA (brand attitudes) (Till, Sarah M., and Randi , 2008) and intention to buy (Kahle L, 1985), academic study into the outcomes of celebrity supporters on BE remain scant (Seno and Lukas, 2007).

Either celebrity or founder endorsement plays a vital role in the attainment of insolence, brand recall, and buying purpose as well as the bottom line of business (profit and sales) (Agarwal and Kamakura, 1995; Elberse and Verleun, 2012; Erdogan, 1999; Erdogan, 1999; Chan and C.H, 2011; Mathur, Mathur, and Rangan, 1997; Kaikati, 1987). 25 per cent of American commercials (Shimp, 2000) and 24 per cent of Indian commercials (Creswell, 2008) used celebrity endorsers. Research reveals that endorsements through celebrities can result in positive advertisement responses and product assessments (Dean, Dwane , & Abhijit).

I. Review of Literature

The review of literature has been organized into four sections

- Impact of founder endorsement on brand equity.
- Theories of endorsement.
- Impact of founder endorsement factors on purchase intention.
- Effect of brand equity (brand likability, brand meaning, and brand recall) on purchase intention.

Impact of founder endorsement on brand equity:
25 percent of advertisements use celebrity endorsement (Watch, 2006) Associating personalities with a brand, promoters permeate the recognized brand with required relations (Keller K, 2013; Essex.Till, 1998), expected to build positive brand equity among consumers (Keller K, 1993). Though previous research has looked into the effects of celebrity endorsers on brand recall (Kahle L, 1985), endorsed brand ambassador (Till, Sarah M and Randi, 2008),

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and purpose to purchase (Kahle L, 1985), academic study into the implications of celebrity endorsement on brand equity has been scarce (Seno and Lukas, 2007).Given high costs in hiring celebrities, a few firms have deployed their founder as celebrities based on the suitability of the founder with the advertised brand/product.

Impact of founder endorsement factors on purchase intention:

Pradhan et al., 2016 studied and tested the abstract context in comparison of the relative efficacy of celebrity-user, brand-personality, and user–brand behavior resemblance on brand ambassador and buying intent and found user–brand and brand–personality behavior similarity has a substantial influence on brand ambassador, and intention to purchase, personality–user equivalence does not (Amanda Spry et al., 2011). In general, it may be stated that celebrity qualities have an impact on customer purchase intent.

Attractiveness:

It is an essential determinant in a person's initial decision of another individual, according to a large body of study in marketing and communication (Baker and Chruchill Jr, 1977; Chaiken, 1979; Joseph, 1982; Kahle L, 1985; Mills and Aronoson, 1965; Widgery and Ruch, 1981).

Expertise:

It is well-defined by (Hovland, Janis, & Kelly, 1953) expertise is the additional level of trustworthiness. This dimension is sometimes called "authoritativeness" (McCroskey, 1966) , "competence" , "ex-pertness" (Applbaum and Anatol, 1972) or "qualification" (Applbaum & Anatol, 1972). (Berlo, Lemert, & Mertz, 1969). The effect of apparent communicator ability ("Dr." versus "Mr.") and the strong point of advice (positive versus unbiased) on the social agreement was investigated by (Crisci & Kassinove, 1973). The results of this learning show that respondents' inclination and act by the source's advice was directly related to the supposed close to fitness and the strength of the assistance.

Trustworthiness:

It is the mark of self-assurance that a consumer reposes in the celebrity and the acceptance level of the celebrity and the essence. (Giffen, 1967) revised the perception of trust from Aristotle to King and felt that Aristotle's "ethos," and (Hovland, Janis, & Kelly, 1953) "credible source" is similar to trustworthiness. The outcomes showed that when the promoter is apparent to be extremely truthful, a prejudiced note was further real than a non-assertive message in the change of perspective.

Elements of the Keller model:

When a product is well-known and has durable, favorable, and separate associations in a buyer's mind, it is said to have brand equity. (Keller K, 1993). Salience, presentation, imagery, findings, opinions, and resonance are the 6 blocks of brand building that make up these developments. The ultimate aim is to reach resonance, the peak of the customer-based brand equity pyramid, where clients and brands have a perfectly harmonic association.

Celebrities and Brand Meaning:

Marketers have typically relied on the charisma of celebrities to give their meaning through their brand. Escalas and Bettman look at celebrities as transporters and pitchers of meaning that assist customers in creating their own identities. As a result, celebrities' influence stems from their capacity to serve as meaning enablers, assisting customers in meeting their own needs rather than their ability to be active relationship partners.

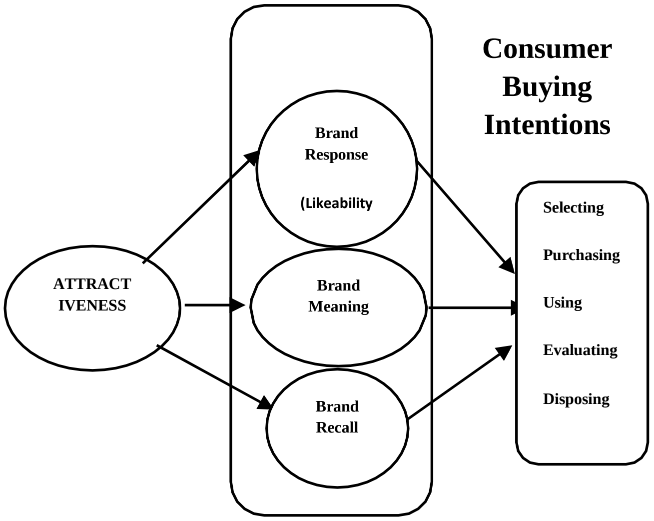
Hypothesis development:

Martin Eisend and Tobias Langner studied (physical) beauty and knowledge as significant aspects of advertising success in their study "Instant and late publicity impacts of celebrity endorser' attractiveness and expertise." When encountering advertisements with celebrity endorsers, these factors were identified as the most appropriate variables to inspect the interchange of effect and perception because they can be measured whichever a reasoning or affecting stimulus that activates whichever is more affect-based or extra cognition-based procedures. As an affect-based stimulus characteristic, attractiveness states to the recipient's insight of the presenter's adorableness (McGuire, 1985). Physically beautiful personalities are rated higher on a variety of personality attributes (Kahle L. , 1985), and the earlier study indicates that good-looking correspondents are further effective at altering views and attitudes, as well as creating intentions to purchase (Joseph, 1982) (Erdogan, 1999).While (Amos et al, 2008) found that similar organized impact sizes for celebrity beauty and proficiency, the resulting scope of solo research is influenced by moderating variables. According to the latest research, purchasing incentives limit the effect of knowledge on brand boldness and intention to buy (Lord and Sanjay, 2009). As a result, knowledge affects brand boldness and buying intention only for informational items (such as ovens or aspirin), but not for transformational products (such as chocolates or ethnic clothes). The impacts of appeal are inverted, with transformational items having stronger effects than informational products. According to this hypothesis, endorser has a greater impact on clients when the celebrity and the endorsed brand have a high level of congruence or fit (Kamins, 1990; D.Till, 1998 ; Keel and Rajan , 2012). (Brian D. Till & Busler, 1998) on the other hand, discover no connection between attraction and product classification, suggesting that supporter attractiveness affects attitudes about promotions and buying purposes for both attractive-related and attractive-unrelated goods.

Conceptual framework:

It proposed in Figure 1 is based on (McCracken G. , 1989) meaning transfer model, Classical conditioning, Elaboration Likelihood Model, and 'Tears Model'.

Figure 1: Conceptual Framework



Source: *Framework designed by authors*

Theories of celebrity endorsement:

McCracken's meaning transfer model: Research on endorsement offers many interpretations about how celebrities improve an image of a product. McCracken G. , 1989 meaning transfer model indicates that the public endows sense to personalities. Thus, personalities stand for a certain explanation, and advertisement makers select celebrities based on the meanings that would be conveyed to representative possessions for a product. Attractiveness and capability are regularly found in personalities who can be transferred to a substantial form to the consumer. Customers can derive control of their explanations and include them into self.

Associative learning or classical conditioning:
Associative learning, also known as classical conditioning, describes how customers shift an unconditioned stimulus (endorser) that causes an undefined reply (e.g., like the celeb supporter) to an accustomed stimulus (a brand), which causes the corresponding feedback (e.g., fondness of the product). A learning method created on (recurring) experience to together stimuli cause response (Tom et al., 1992; D.Till, 1998). The study has concentrated on the source impacts of celebrity endorser to investigate these transfer effects.

Celebrity endorsement impact on brand equity: Increased brand recall (Speck, et.al., 1988), endorsed brand assessment (Marla Royne Stafford,et.al., 2002), and consumer based brand equity are all positively associated with endorser credibility, attractiveness, skilfulness, and honesty (Ohanian, 1990; Spry, et.al., 2011). Endorser reliability is defined as an endorser's morality, truthfulness, and level of confidence (Ohanian, 1990).Endorser skill refers to a buyer's view of an endorser's knowledge, experience, or aptitude with the product being endorsed. Perceptions of customers on endorser's physical appearance are referred to as attractiveness (Ohanian, 1990). Amanda Spry et al., 2011 investigated the influence of personality credibility on the recognized brand's consumer-based equity.

H1: *Attractiveness of the founder positively impacts the likeability dimension of the brand equity.*

H2: *Attractiveness of the founder positively impacts the meaning dimension of the brand equity.*

H3: *Attractiveness of the founder positively impact the recall dimension of the brand equity.*

H4: *The likability dimension of brand equity positively influences the buying intention.*

H5: *Meaning dimension of brand equity positively influence the buying intention.*

H6: *Recall dimension of brand equity positively influence the buying intention.*

II. Research Design and Methods

Data Collection Method

Data were collected through a study using a structured questionnaire. The self-report questionnaire took between 20-30 minutes to administer. 302 students at a deemed university in India were engaged in the survey. The students were from university- postgraduate students who decided to take part in academic research. The students were instructed to choose respondents who got exposed to founder endorsement advertisements. Hence the sampling technique is purposive sampling. Respondents were chosen from urban and rural places of Telangana state in India.

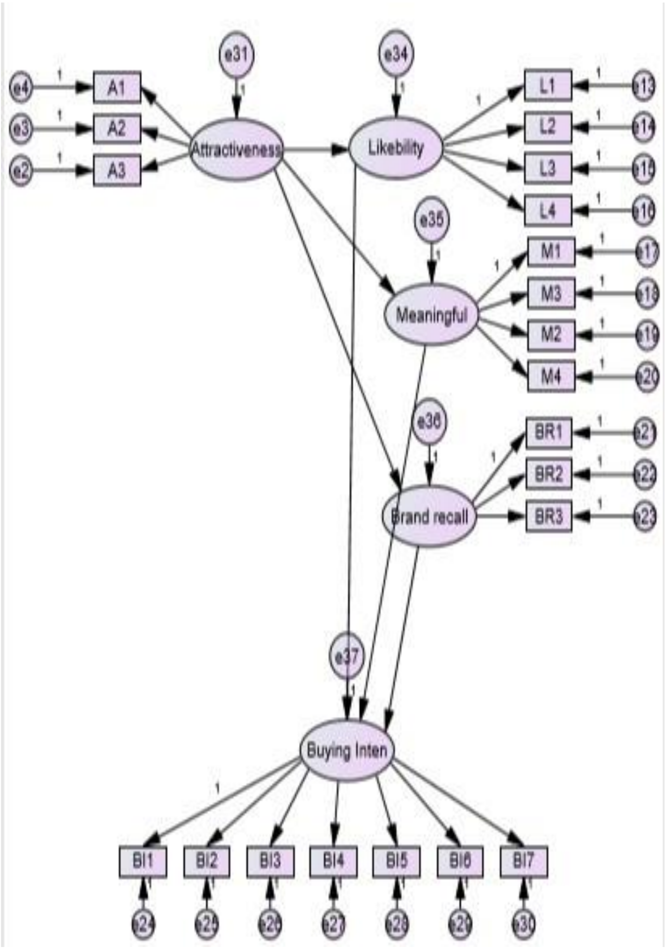
Questionnaire design:

The questionnaire was designed with the identification of constructs namely founder attractiveness, likability, meaning, and recall. Items for founder attractiveness, likability, meaning, and recall were drawn from validated item scales developed by DeSarbo and Harshman (DeSarbo and Richard A, 1985). The questionnaire has 22 questions and was categorized on a five-point Likert scale from strongly agree to strongly disagree. The pilot study was held with 30 respondents to check the correctness of the dimension items. The respondents replied to the queries relating to attractiveness, likability, meaning, and recall. A few comments were offered by the members to progress the items. The reliability of the scales was tested using Cronbach's alpha and the validity was assessed using confirmatory factor analysis.

Sample and procedure:

A structured questionnaire was designed to capture the effect of founder endorsement on brand equity and the effect of brand equity on buying intention. Initially, the effect of celebrity influencing factors such as expertise, attractiveness, and reliability on brand equity factors namely likability, meaningfulness, and brand recall, and their effect on buying intention were included in the questionnaire. The model suggested including only celebrity attractiveness and excluding the other factors. A sample of 500 was targeted but after data cleansing, the sample was confined to 302. A structured questionnaire was designed with 22 items. The items of the questionnaire were drawn from the validated scales from the extant literature. Founder attractiveness, brand likability, meaningfulness, brand recall, and buying intention correspondingly have 4, 4, 4, 3, and 7 items. AMOS was deployed to calculate the relevant statistics needed for the study. Cronbach's reliability test was conducted on the 22 items. Descriptive statistics like mean, standard deviation, and variance were calculated. Sample adequacy test KMO and sphericity test Barlett were also done. ANOVA with Tukey's Test for Nonadditivity and Hotelling's T-Squared Test were also conducted. Finally, Confirmatory factor analysis was conducted and various model fit indices were established.

Figure 2: CMA Model Fit Diagram



Source: *Data Analysis*

III. Result and Discussion

The Analysis of data was presented in order; first, Table 1 indicates the reliability of the measurement model was tested using the metric Cronbach's alpha to ensure scale has measurement error less than the threshold value (Nunnally, 1967). The results of reliability were found to be 0.933 which is greater than the threshold level of 0.70. Second, Descriptive statistics like Mean, standard deviation, and variance were calculated. Table 2 shows that sample adequacy test KMO and sphericity test Barlett were also done. Kaiser-Meyer-Olkin Sampling Adequacy measured at 0.909 at .000 significance. Third, Anova with Tukey's test for non-additivity was tested to find out whether the factor variables were additively related to the expected value of the response variable as seen in Table 3. In our case the test for non-additivity was statistically significant, the data are no additive because Mean Square was .781. Fourthly, Hotelling's T squared test was performed to determine the distribution of the sample is a natural generalization or not. Table 4 indicates that Hotelling's t-squared statistic as a generalization of t-statistic confirmed significance in multivariate distribution proportional to the F-distribution and distribution of a set of statistics which are natural generalizations of the statistics underlying t-distribution.

Lastly, Confirmatory factor analysis was executed to find out whether the factor loading is standardized or not, the model fit is significant or not and the correlation between all factors is less or more. SEM was chosen as an analysis technique primarily because of its ability to explain models with several connected dependant variables, which we encountered in our research. (Hair, Jr, Anderson, Tatham R.L, and Black , 1995).

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items
933	22

Source: *Data Analysis*

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.909***
Bartlett's Test of Sphericity	Approx. Chi-Square	2676.590
	Df	435
	Sig.	.000

Source: *Data Analysis*

Table 3: ANOVA with Tukey's Test for Nonadditivity

			Sum of Squares	Df	Mean Square	F	Sig
Between People			1340.416	291	9.244		
Within People	Between Items		75.105	19	2.590	5.432	***.000***
	Residual	Nonadditivity	23.895[a]	1	23.895	50.714	***.000***
		Balance	1980.833	4204	.471		
		Total	2004.728	4205	.477		
	Total		2079.833	4234	.491		
Total			3420.249	4379	.781		
Grand Mean = 3.78							
a. Tukey's estimate of power to which observations must be raised to achieve additivity = 4.858.							

Source: *Data Analysis*

Table 4: Hotelling's T-Squared Test

Hotelling's T-Squared	F	df1	df2	Sig
120.515	3.353	19	234	.000

Source: *Data Analysis*

Measurement Model Validation:

All CFA estimates that showed a value above 0.60, which satisfied the basic threshold condition for convergent validity (Kline, 2015) are included.

Results of CFA Model:

Confirmatory factor analysis was conducted to test the conceptual model by (Anderson and Gerbing, 1988; Hair et al, 1995). All loadings with factors are standardized and significant in this model. The correlation between all factors is very less and distinct factors. Table 5 indicates that the model is fit and RMSEA values is 0.065 (>= 0.05 and <=0.1). Table 6 depicts that attractiveness model is significant as the RMSEA value is 0.077. Table 7 shows that attractiveness and consumer buying intentions framework model is also significant with a CMIN value of 1.905 (<=3.0). The fit indices of Model met the required threshold expectations; $\chi 2/df$ (< 3) = 1.905, CFI (>=0.8 and<=1.0) = 0.903, RMSEA (>=0.05 and<=1.0) = 0.078. The path coefficients (β values) for all the hypotheses are significant and hence the hypotheses are supported.

Table 5: Confirmatory factor Analysis (CFA) Model check and Significance measures

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.065	.056	.074	.005
Independence model	.189	.182	.195	.000

Source: *Data Analysis*

Table 6: Attractiveness Model

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.077	.057	.097	.014
Independence model	.260	.246	.273	.000

Source: *Data Analysis*

Table 7: Chi-square values of Attractiveness and Consumer Buying Intention

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	101	346.647	182	.000	1.905
Saturated model	252	.000	0		
Independence model	21	1926.854	231	.000	8.341

CMIN value is significant and Model Fit value 1.905 (<=3.0)

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.820	.772	.906	.877	.903
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

CFI value is significant and Model fit compare to any other Models and value is 0.903 (>=0.8 & <=1.0)

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.078	.065	.090	.000
Independence model	.221	.212	.230	.000

RMSEA value is significant and value is 0.078 (>=0.05 & <=1.0)

Source: *Data Analysis*

IV. Conclusion

Today consumers are informed, intelligent and rational especially while buying costly products and the decisions have high involvement. Organizations invest heavily in endorsers' characteristics to align with the attributes of their products. (McCracken G. , 1989; Walker and Daniel, 1992). The impact of advertisement on consumer liking, meaning, and recall are significant. The collective effect of consumer liking, meaning, and recall on buying decisions is also significant. Founders as celebrities and their endorsed advertisements are perceived as attractive with both good-looking and likable abilities (Atkin & Martin, 1983). It is a known fact that countries like India, China buy more jewellery ornaments than western countries in the world. Hence investigating the attractiveness of the founder in the founder endorsement advertisement on the brand equity composed with liking, meaning, and recall and the impact of brand equity on buying intention is a significant task. In this situation, an analytically proved model and outcomes from the analysis would enable marketers to plan an effective marketing communication strategy. Founder attractiveness influences brand equity. All three constructs of brand equity namely liking, meaning, and brand recall was positively influenced by the founder's attractiveness. This could be attributed to that founder's attractiveness and his appeal to the consumers in the advertisement impressed in generating liking, meaning, and recall. In comparison to a non-celebrity endorser, celebrities have been widely used for promotional activities because they may elicit favourable emotions and perceptions (RN Kanungo and S Pang, 1973; Cacioppo and Richard, 1980). When clients are uncovered to some personality-brand blends, optimistic associations with the celebrity are transferred to the brand (David H. Silvera and Benedikte, 2004). According to numerous studies, the impact of celebrity endorsement on brand equity nurtures over a period (B.D, 1998)

Implications:

The study can be used for founder endorsement advertisement for products and services in the high involvement category if the founder has attractiveness. The study proved that high involved products when endorsed by the founder lead to positive brand equity. Given that a brand is a significant asset for a company and brand equity is a key strategic concern, marketing managers can effectively utilize the findings of this study. The current study finds that celebrity endorsement can help create brand equity by increasing brand appeal, and it offers principles for choosing a successful founder. According to the findings, the impact of source attractiveness on product purchase intentions is mediated by the level of customer brand equity aspects about the product. By analysing real brands with real potential purchasers, the current study captures important insights and critical lessons from the field in respect to how brand equity should be imagined and quantified. This study is both accessible and appropriate for marketers, and it even includes a tried-and-true questionnaire based on Keller's approach.

Limitation and scope for future research:

The current research is focused on the Jewellery sector. Future studies can empirically observe the impact of founder endorsement in creating brand equity in additional service and product contexts. The outcomes of this study will be more generalizable if it is replicated with diverse product and service categories. The importance of the founder in developing brand equity will be further illuminated by empirical support for the suggested framework in various circumstances. Second, the information gathered for this research is cross-sectional. Customers automatically connect each new experience, positive or negative, to their prior ones and rate it consequently, therefore the future study can use a longitudinal study design (Meyer and André, 2007). Longitudinal facts will enlighten on how customer perceptions of the brand are changing. This will aid marketers in developing a strong brand by allowing them to take corrective action. Market environments, opposition, and the client's state of affairs can all influence founder endorsement, and potentials can be formed by market settings, opposition, and the customer's situation (Meyer and André, 2007). As a result, founder approval may alter depending on market conditions. As a result, we recommend that upcoming research look into the regulating impacts of marketing conditions and individual factors on the link between founder endorsement and brand equity.

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WHAT MAKES ONLINE GAMING PLATFORMS STICKY: A STUDY OF FIVE INDIAN METROS

Soumitra Bose* Kiran Bala**

Purpose- *The online gaming industry, the fourth largest segment in India's media and entertainment industry, has been growing at an exponential rate. With 420 million-plus active gamers, India is among the top three nations in the online gaming business. Despite its growing popularity, there is a lack of rigorous academic research to examine reasons for customer stickiness towards gaming platforms.*

Methodology- *Research has employed quota sampling, at least 400 respondents each from five Indian metros – Delhi, Kolkata, Mumbai, Chennai and Bengaluru – were selected for the survey. Respondents were administered a questionnaire with close-ended questions. Data was collected by Computer Aided Personal Interview (CAPI) method. For this quantitative research, statistical tools like Weight of Evidence and Information Value helped identify the strongest factors that influence customer stickiness.*

Findings-*Features like playing with stakes, having subscriptions and quality and quantity of gamers emerged as some of the significant factors that determine the degree of a customer's loyalty towards a platform.*

Originality/ Value-*This study, for the first time, provides insights to platform owners whose monetization models and customer retention plans can be structured around the findings of this paper.*

Keywords: *Online Gaming; Real money gaming, Stickiness of Gaming Platforms; Sports economics; media and entertainment; Information Value*

JEL Classification Code: *Z2 (Sports Economics)*

Online gaming is a fast-growing business in India. According to a recent report by FICCI-Ernst and Young on online gaming and Esports, this sector is expected to reach INR 153 billion by 2024 at a CAGR of 15% to become the fourth largest segment (Mondal, 2022) of the Indian media and entertainment sector. The exponential rise in the number of casual online gamers, estimated at 420 million and growing, and its economic consequence on platform owners is an interesting case study. In India, there are several platforms offering skill-based real money games or pay-to-play games like fantasy, selected card games, ludo, chess etc. These games fall under skill and although they may be played with stakes, are not classified under betting or gambling, both of which are forbidden under Indian law. Our research is purely restricted to skill games which don't have 'violence, addictive or sexual content.' (Barik, 2023).

While legal and regulatory challenges remain ("Karnataka High Court on Online Gaming", 2022), online gaming is seen as sunshine sector under the sports and economy vertical. The Indian government itself keen to promote the Animation, Visual Effects, Gaming And Comics (AVGC) sector ("Animation, Visual Effects, Gaming and Comics (AVGC) Sector", 2022). Gaming platforms in India provide both single genre of games like fantasy cricket or rummy or a bouquet of games ranging from casual, hyper-casual to Esports. Potential gamers thus have a wide range of platforms to choose from. In an extremely competitive environment where internet data is available at low cost, smart phones are in comfortable reach of the common man and telecommunication technology is constantly improving, platforms have to continuously innovate to be able to keep their business models attractive and arrest customer churn. Not only do they have to develop games but win the trust of customers and also retain them.

The decision to choose a platform is dependent on several motivational factors like, intrinsic (enjoyment, challenge meaning and purpose) and extrinsic (cash, applause, trophy and status). These have been examined through our research.

Our study is aimed at finding the most compelling factors that propel a gamer to choose and stay on a platform. It is imperative for platform owners to retain their customers and arrest churn. Loss of customers (churn) leads to loss of revenue. Hence, stickiness or platform loyalty is imperative for good business.

In the absence of in-depth research on customer motivation, there is a need to employ structured analysis in the context of the online gaming industry and consumer stickiness and our attempt towards that makes this study unique.

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The main objective of this work is to mathematically predict the factors that propel gamers to choose a particular platform. Advanced statistical analysis is performed on the data to select the main features that drive platform stickiness. We studied a wide range of Information Value calculated on the basis of Weight of Evidence (Bhalla, 2022) to understand our main research question – "why should an online gamer be loyal to one platform or explore multiple options."

I. Review of Literature

The online gaming industry is extremely competitive in India with multiple platforms, regardless of their financial turnover, constantly innovating and modifying their offerings to the gaming public at large. Several factors come into play when a gamer chooses a platform and more importantly, decides to pay and play.

In context of this study, largely aimed at identifying the tangible factors that lead to brand awareness and consumer satisfaction, we have based the survey on three main theories – the 1985 propounded Self Determination Theory (SDT) of well-known psychologists Ryan and Deci, Game Theory propounded by (Burguillo, 2018) and the hedonic (HED) and utilitarian (UT) aspects of consumer behaviour in a digital gaming world by (Storgards, 2011).

The SDT model puts forward how competence, autonomy and relatedness determine the degree of satisfaction and drives motivation – extrinsic and intrinsic. SDT links personality, human motivation and optimal functioning. It posits how motivation is a powerful force in shaping how we behave and react (Ackerman, 2018).

The motivational theory of (Deci, 1975) lays the basis for the understanding of how digital games are chosen and why they are played. (O'Hara, 2017) encapsulated how SDT 'toppled the dominant belief that the best way to get human beings to perform tasks is to reinforce their behaviour with rewards.' Ryan says three basic psychological needs (autonomy, competence and relatedness) drive motivation.

Storgards highlights the importance and purpose of HED (pleasure and enjoyment) and UT (choosing a platform) when studying entertainment information systems. He also speaks about the attitude towards brands and sources of product (platform) recommendation and what features it must have to stand out from the mass. In his study, based on the theories on motivational aspects of digital games consumption, Storgards employed the triangulation method and observes that digital games (and platforms) are high in hedonic value at the product brand level.

The result of Storgards' thesis indicates that digital games should be viewed as experience information goods and how combination of unique value characteristics can be used to create a successful gaming platform that stands out. Using these theories and concepts as foundation, our research attempts to mathematically investigate factors that lead to stickiness.

The Game Theory (Burguillo, 2018), can be described as the mathematical study of decision-making, of conflict and strategy in social situations. Burguillo's mathematical framework works excellently while studying the economics of the entertainment and gaming world where there is fierce competition. It helps explain how we interact in key decision-making processes in order to achieve a flowing or an optimal and seamless mental state of mind (Acland, 2020) to engage in an online platform offering various types of games. In the world of media and entertainment, that is becoming increasingly customer-centric, quantitative analysis is therefore a must.

Researchers have largely adopted logistic regression analysis to understand why clients quit a particular service, or, continue to remain on particular companies. Through customer segmentation (Zhang et al 2022) analysed data from three major Chinese telecom companies to develop a churn prediction model. They opined that by analysing results, telecom companies can effectively predict the possibility to avoid churn and increase their profits.

Churn is a significant problem for companies operating in the banking, telecom, online gaming space. The internet medium offers the scope to explore several options and hence platform owners face massive challenges to retain customers and remain operationally attractive. Churn clearly hurts a business. There is a greater cost to acquire customers than retaining them. Stakeholders are keen to understand how accurately they can identify customers that are about to leave. On the contrary, there is a need to understand why should customers have a greater propensity towards a platform. It is exactly here that there is no in-depth research in India. Reports by industry bodies are not enough.

(Nazarko, 2020) says logistic regression and decision trees are commonly used methods to analyse churn but "sometimes the management only looks for answers which features may suggest that a customer is dissatisfied with the product, rather than for state-of-the-art predictive solutions." She justifies the usage of attribute relevance analysis. It has two important functions like recognising the variables that have the greatest impact on target variable and understanding the relationship between most important predictor and target variable. To execute this type of analysis, Information Value and Weight of Evidence approach is used.

Nazarko has used this attribute relevance analysis technique on huge telecom data sets and concludes that "IV and WoE concepts are simple yet powerful techniques to perform variable transformation and selection," adding: "in contrast to more sophisticated models, they provide high interpretability."

(Xu et al, 2022) have used a similar technique to analyse churn in China telecom, one of the world's largest integrated information service providers. Retaining customers in the face of fierce competition is an important issue for telecom companies and they took the IV and WoE route to determine the factors that may lead to loss of customers.

(Sana et al, 2022) have employed a similar technique to propose a customer churn prediction (CCP) model for the telecommunication industry. To optimize the prediction models, they have done feature selection using the best hyper-parameters on publicly available data.

The burgeoning online gaming business in India is dependent on telecom providers and both are strongly interconnected from a commercial aspect. We thus opted to explore the IV and WoE path as there are no papers that investigate business characteristics of the online gaming business and establish a relationship between gamers and factors that influence stickiness (or churn) in active platforms.

In India, there are some reports (Mondal, 2022) from industry bodies like FICCI, Ernst & Young and IAMAI, but they are largely a bird's eye view on how the industry is shaping up in terms of their business models and under certain regulatory frameworks. These industry reports by no means reflect consumer behaviour and what drives potential players to engage with online games or choose specific platforms.

II. Research Design And Methods

The ground realities in the Indian online gaming environment were considered in creating the blueprint for data collection through a robust survey method. Online gaming is a state subject. From a practical standpoint, we wanted a Pan-Indian overview but with a little more emphasis on southern India where the online gaming industry is facing serious regulatory and legal challenges (Sachthey, 2022). Hence out of the five metros, two south Indian cities -- Chennai and Bangalore -- were selected. It may be pertinent to mention here that the states of Maharashtra (represented by Mumbai), Delhi and West Bengal (represented by Kolkata) are not against online gaming.

Real money gaming is big in India (Sharma, 2022) and since gamers choose to select games from platforms, the schedule of questions was devised to determine the possible factors that lead to platform stickiness. Vis-à-vis the theories of motivation on which this study is based on, we earmarked questions to measure motivation, satisfaction, human-device interaction, economic flexibility, type of games preferred, internet factor, and continuous intention. All these factors have a benefit-linkage and value-linkage relationship with each other and the best combination are strong factors for consumer loyalty (Ghosh Sharma et al, 2020).

The survey contained a range of question-and-answer system. The choices were from single answers, multiple tick boxes and questions on a five-point Likert scale (Borah et al, 2020). Our Survey Methodology was Face to Face Surveys using CAPI (Computer Aided Personal Interviews). The survey questionnaire (data collection instrument) was scripted using the Sawtooth Software. Sawtooth Software provides advanced analytics and insights to help organizations understand what's important to their customers and to predict what they will buy or choose. The Sawtooth Software app then helped us administer the questionnaire via smartphone/tablets.

We used Quota Sampling and targeted the age group between 12 to 54 years and sub-divided this into five different age categories – 12-17 years, 18-24 years, 25-34, 35-44, 45-54. We also maintained a 50:50 male-female ratios in all five cities. Every city covered in the survey was first divided into North, South, East, West and Central Zones. Within each zone of the city, we selected two-three areas/localities and within each area/locality, we selected five starting points – popular places like shopping malls and multiplexes that have large footfalls - and from each starting point, we physically reached out to people and enquired if they played online games. If they said yes, we administered the questionnaire to 8 to 10 respondents. The response rate was thus almost 100 percent. It took about 20 minutes per interview.

The areas/localities that we picked were a mix of affluent and middle-class. The 12-17 years' group largely comprised school-going children. This process enabled us to reach a wide range of respondents from various income groups: less than INR 5000 (Indian Rupees) to more than INR 100,000.

Table 1: Sample breakdown per city in India
(numbers per city include female and male respondents)

Age Group (in years)	Bangalore	Chennai	Delhi	Kolkata	Mumbai	Grand Total
12 – 17	44	42	42	45	46	219
18 – 24	94	91	100	95	97	477
25 – 34	107	91	95	95	93	481
35 – 44	95	95	92	94	97	473
45 – 54	100	91	95	93	90	469

We targeted at least 400 online gamers from each city and we defined the specifics of the sample in terms of age, sex, education level, income level, device used and internet usage. The schedules were filled by enumerators by personally visiting the respondents. The final data was collected in the first week of April 2022. The final sample breakdown by age group and city is shown in Table 1.

Identifying Key Questions

We received responses from 2116 online gamers. To analyse the collected data, a funnel approach was used. We shortlisted 25 questions (like game time, subscription, playing with stakes/money) that were directly related to gamers' choice of platforms. Our Target Variable (TV) for analysis is the question from the survey on "whether gamers wanted to play on one platform or multiple platforms." This question helps us to measure a gamer's stickiness towards a platform.

Correlation Analysis

Correlation coefficient was calculated between the target feature i.e. platform stickiness versus features like monthly subscription, playing with stakes etc. Correlation enabled us to measure the strength of a relation between our target variable and shortlisted features.

As part of the pruning process, we picked the questions with the highest correlation value. Values, which were less than 0.1, were discarded. The number of questions were thus cut down to 14 ***(Appendix 1).*** This correlation value can either be positive or negative. Positive refers to where one influences the other in a positive direction. For example, the question of 'Do you play with money' had a correlation value of 0.28. It meant stickiness to a platform that had a strong relationship with people who play with stakes. The question on 'Do you have a paid subscription' had a negative value of -0.31. It suggested most people don't prefer to have subscriptions and prefer a free entry.

Table 2: Table of correlation values of selected features from questionnaire to the target feature (platform stickiness)

Features (Selected from the survey Questionnaire)	**Correlation value with Platform Stickiness**
Earning Money	0.20
Monthly Expense On Internet Data	0.19
One Or Multiple Platforms	1,00
Play With Money	0.28
Average Hours Spent	0.13
Preferred Subscription	0.34
Budget For Paying Online Games	0.19
Have You Ever Paid For Subscription	-0.31
Have A Paid Subscription	-0.30
SMS In-App Ad Emailers	0.08
Wide Variety of Games Important	0.16
Quality Of Players	0.16
Quantity Of Players	0.17
In-App Purchases	0.13

It can be noted from Table 2, the highest correlation value is 0.34. This is between target feature and the question: "preferred mode of subscription" which represents both the economic condition and level of commitment of a gamer to online gaming. When responses to the subscription question was further investigated, it was found that 70% of the sample opted for a free subscription while only 10% said that they prefer a fully-paid model.

Another feature that is well correlated to the target variable is whether users play with money or not (0.28). There seems to be an affinity of platform and playing with money, since more players who prefer to play with money do so on a single platform. For a more focused mathematical approach, we sought to identify the strongest features determining stickiness of a platform by using the statistical concept of Weight of Evidence and Information Value (IV) for all the (14) features that had correlation values higher than 0.1.

Information Value explains how strongly independent features influence the target variable, i.e., platform stickiness.

Platform stickiness is modelled as a binary event - 1 (stays on single platform) or 0 (multiple platform), hence an approach could be to use a logistic regression (with stickiness as dependent variable) and the 14 independent variables, however this would mean assume a linear relationship between dependent and combination of independent variables. This assumption is hard to justify in our research context, without transforming our discrete variables suitably.

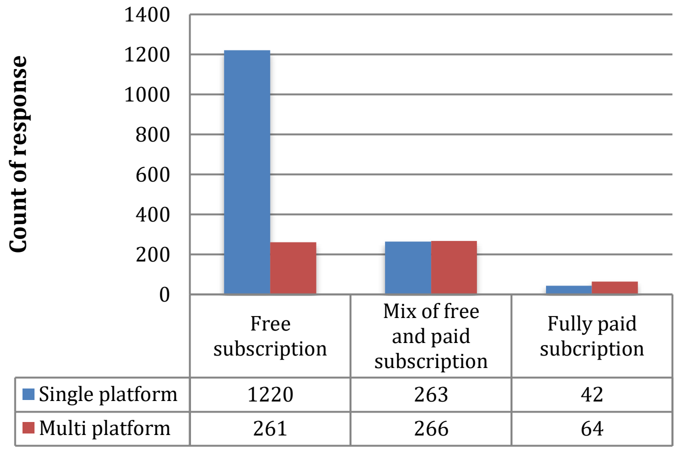
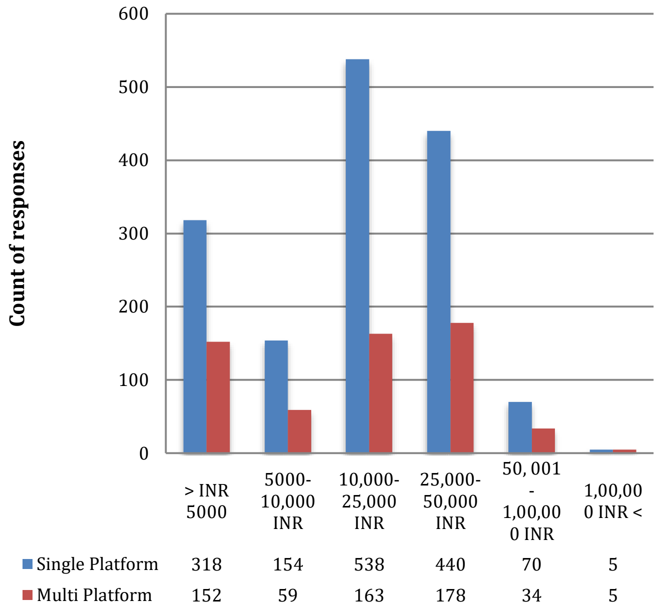


Figure 1: *Relationship between subscription type and choice of platform*

At the core, our independent variables such as platform subscriptions, budget for online games, gaming motivation, using money to play are complex behavioural indicators which have a non-linear relationship with the Target variable - choice of single vs multiple platforms. Such relations are illustrated below in Figure 1 & 2. Given this behaviour, linear regression-based model is a sub-optimal choice.



	> INR 5000	5000-10,000 INR	10,000-25,000 INR	25,000-50,000 INR	50, 001 - 1,00,000 INR	1,00,000 INR <
■ Single Platform	318	154	538	440	70	5
■ Multi Platform	152	59	163	178	34	5

Figure 2: *Relationship between platform stickiness and gamer's monthly income*

Another significant challenge is existence of multi-collinearity which can cause a decrease in the performance of (linear) regression type models, since there is a chance for overfitting. However, Information Value and Weight of Evidence are not influenced by multi-collinearity.

Feature Selection

WoE and IV are common techniques used for selection of features (in our case the questions) that influence platform stickiness.

The WoE is calculated as follows:

$$\boldsymbol{WoE = ln(non - event/events)}$$

where, **ln** stands for natural log. **'Event'** means players preferring to play on single platform and **'Non-event'** means players preferring to play on multiple platform (i.e. churn)

$$IV = \sum (\%\, non - events - \%\, events) * WoE$$

The IV is calculated per response option in a question. Then the individual IVs per option is summed to give the total IV for that question.

Our target variable, as discussed above, is stickiness (single platform vs multiple platforms) which is a question in the survey. The following thresholds values were used to classify the IV's predictive power (Kulkarni, 2022):

When,

- **IV < 0.02 (Not useful for prediction)**
- **0.02 < IV < 0.1 (Weak predictive power)**
- **< IV < 0.3 (Medium Predictive power)**
- **< IV < 0.5 (Strong predictive power)**
- **IV > 0.5 (Suspicious predictive power)**

III. Results and Discussion

The IV analysis selects six different features covering economic ability, motivation and continuous intention that show good predictive power on the basis of the thresholds discussed above. The six features pick a range of behavioural and economic indicators that describe a gamer's choice to stick to platforms and their behaviour on them.

Feature 1: Pay to play - Economic intention (Utilitarian motivation)

Options	Multiple platform (non-event)	Single Platform (event)	Total	Proportion	WoE	IV
Without stakes	245	1132	1377	65%	0.59	0.19
Sometimes with stakes	217	262	479	23%	-0.75	0.15
Frequently with stakes/Always	131	129	260	12%	-0.96	0.13
Total	593	1523	2116			**0.47**

Table 3: *WoE calculation for the feature 'Playing with Stakes' is shown. This question measures economic ability of an online gamer*

'Playing with stakes' measures a gamer's ability to spend and his/her urge to win. Since the IV is high (0.47), it is a strong predictor for platform stickiness. It is observed that 1132 out of the total sample of 2116 respondents (roughly 54%) who prefer to play without stakes usually stick to a single platform. Those who play with stakes tend to go to multiple platforms (perhaps to increase their chances of winning).

Feature 2: Paid subscription - Continuous intention (Utilitarian motivation)

Options	Multiple platform (non-event)	Single Platform (event)	Total	Proportion	WoE	IV
Yes	320	338	658	31%	-0.89	0.29
No	271	1187	1458	69%	0.53	0.17
Total	591	1525	2116			**0.45**

Table 4: *WoE calculations for the feature 'Have a paid subscription'. This feature measures continuous intention and economic ability*

‘Having a paid subscription’ indicates a gamer’s economic ability and his level of loyalty to a platform. According to the IV thresholds, this is also a strong predictor. It is observed that in our sample, almost 70% of respondents don’t have any kind of subscription and there is an overwhelming bias towards staying on a single platform. Of the respondents who have said yes to having a subscription – there is a marginal inclination towards staying on a single platform (perhaps the platform to which they subscribe). One of the reasons why we don’t see a major difference between single platform subscription and multiple platform subscription is probably these people have the means to pay and play on more than one platform. Thus, it is hard to conclude from this data that people who have subscriptions will almost certainly stick to a single platform

Feature 3: Popularity and Challenge – Intrinsic Motivation

Options	Multiple platform (non-event)	Single Platform (event)	Total	Proportion	WoE	IV
Don't care (Neutral)	95	434	529	25%	0.57	0.07
Want	247	676	923	44%	0.06	0.00
Strongly Want	249	415	664	31%	-0.44	0.07
Total	591	1525	2116			**0.14**

Table 5: *WoE calculation for the feature 'Quantity of Players Importance'. This feature measures utilitarian motivation.*

‘Quantity of Players Important’ measures the number of gamers that engages in a platform. Numbers are indicative of the popularity of a platform. It is a medium predictor but extremely significant when it comes to choosing a platform. It is observed that 75% of the sample believe that the quantity of players (subscriber base) is important to join a platform. This base is a direct indication of the popularity of a platform and there could be several factors like security, customer service, peer suggestion, celebrity endorsement, ease of operation, bouquet of games, influencing public choice.

Most platforms offer more or less similar content in terms of games and therefore innovation and trust factor in service are critical. It is observed that 1091 people, who want/strongly want a solid subscriber base, prefer a single platform.

It is by far the majority. It is also observed that a section of the sample respondents, who want/strongly want to be influenced by the number of players, is inclined towards exploring more than one platform. Interestingly, a quarter of the sample is not influenced by the number of players. This portion of the sample is largely in favour of a single platform. Overall, respondents tend to have preferences and popularity largely drives gamers to a single platform.

Feature 4: Gratification – Extrinsic Motivation

Options	Multiple platform (non-event)	Single Platform (event)	Total	Proportion	WoE	IV
Yes	448	1390	1838	87%	0.18	0.03
No	143	135	278	13%	-1.01	0.15
Total	591	1525	2116			**0.18**

Table 6: *WoE calculation of the feature 'Earning money'. This feature helps to measure utilitarian motivation*

‘Earning money’ is a medium predictor for stickiness but high on motivation level as 87% of the sample say that earning money drives them to play online games. And when it comes to choosing a platform, there is strong tendency towards a single platform. People who pay-to-play online games look for security, trust and ease of transaction from platform owners. If the majority of the sample is banking on a single platform, it can be safely argued that these gamers feel secure and confident in using the interface of a platform they engage in.

Feature 5: Immersion – (Hedonic and Utilitarian Motivation)

Options	Multiple platform (non-event)	Single Platform (event)	Total	Proportion	WoE	IV
Less than 1 Hour	102	427	529	25%	0.48	0.05
1-3 Hours	401	960	1361	64%	-0.07	0.00
More than 3 hours	88	138	226	11%	-0.50	0.03
Total	591	1525	2116			**0.08**

Table 7: *WoE calculation for 'amount of gaming time'.*
This feature measures hedonic (pleasure) motivation

The feature ‘amount of gaming time’ may be a weak predictor but gives an idea of how much time gamers are spending on platforms. Sixty-four percent of respondents were playing between 1-3 hours per day. Irrespective of the number of hours spent on game time, it is noticed that there is a strong preference (1525 vs 591) to choose one platform, although the 1-3 hours’ group (401) may like to try out more than one.

Feature 6: Budget - Economic ability (Utilitarian Motivation)

Options	Multiple platform (non-event)	Single Platform (event)	Total	Proportion	WoE	IV
INR 0-500	1163	356	1519	72%	-0.24	0.04
INR 501-1000	315	170	485	23%	0.33	0.03
Greater than INR 1001	47	65	112	5%	1.27	0.10
Total	1525	591	2116			**0.17**

Table 8: *WoE calculation for the feature 'monthly budget for playing games'.*
This feature measures economic ability.

‘Monthly budget for playing games’ is a medium predictor but extremely significant considering monies are involved. A large majority 72 % of the sample has a monthly budget of 0-500 INR to play online games. And they choose multiple platforms. We have seen in feature 4 that earning money is a significant driver and hence gamers with relatively lower budgets are exploratory in nature and seek a return. This group may also include those who use platforms as a hobby or simply, time pass. They have no attachment towards any particular platform.

As budget increases, the tendency to lean towards a single platform also increases and is the maximum in the INR 1000+ bracket. More sign of preference is evident from the data and it can be observed that more serious players, albeit much lower proportion of the sample, stay on a single platform. This may be because they have a preference of the type of game they play.

It can be surmised that the six features discussed above greatly impact stickiness towards a platform. It is observed that money and time spent on playing games offered by a platform is directly related to the state of flow, which effectively indicates the level of satisfaction – both intrinsic and extrinsic – a subscriber has derived from playing on a particular platform. These fall in line with Ryan and Deci’s Self Determination Theory (1985). It is thus imperative that an online gaming platform provides an ecosystem that helps gamers achieve a state of mind that enhances motivation, both hedonic and utilitarian, to engage with a platform, remain focused and stay free from distraction.

Our study, based on extensive survey from five Indian metros, thus meets our basic endeavour to explore the factors that contribute to stickiness towards a gaming platform. As Storgards (2011) suggested, the creation of unique value is vital and that can be achieved by examining the motivational aspects of digital games consumption among others. Needless to say, our study is unique to the Indian ecosystem but consumer behaviour is very much in sync with the theories on which we based our research.

IV. Conclusion

Considering that there are multiple platforms jostling for space in a highly competitive industry, this research sheds light on some of the behavioural patterns that drive gamers preferences towards choice of platform. It is evident from the study that utilitarian motivation is a strong driver and a large portion of our sample paid to play with the sole objective to win money. Features 4 and 6 show that most prefer a single platform. We think that this may be because the user interface is easy and friendly for carrying out financial transactions. It is also seen that gamers have a strong affinity towards platforms with high user base (Feature 3) and also prefer to stay on single platforms that are trustworthy. Any game involving stakes involves a risk factor and it is observed that people with higher monthly budgets (Feature 6) and earnings tend to opt for a single platform.

It is also observed that the age-group between 18-34 is the most active with an average playtime of 1-3 hours per day. This age group has access to good mobile devices, has relatively more disposable income to play with stakes and are always looking for innovations. This study will help online gaming platforms and other stakeholders involved with the ecosystem to understand behaviour of players and make strategies to retain their customer base.

Restricted to just five cities, this study is by no means a complete picture of how gamers choose their platforms to play. Similar studies could be extended to Tier-2 and Tier-3 cities, where a large chunk of India's 420 million casual gamers resides (Chakravorty, 2022) and feeling the pulse of India's digital revolution thanks to the availability of low-cost internet.

Acknowledgement

This research paper would not have been possible without the financial support of MPL Sports Foundation. From conceptualisation, theoretical frame-working, research designing, data calculation and final interpretation of results, we are thankful to Dr Anwesha Bose and Ritwik Ghosh, the principal research assistants in this project. Professor Dr Ravi K. Dhar also played a crucial role in reviewing and structuring this paper.

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DOI No: 10.5958/0973-9343.2023.00024.8

IKEA INDIA: BUILDING DIVERSITY AND INCLUSION

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The IKEA was started by “Ingvar Kamprad” In 1943. He started IKEA when he was 17 in Sweden. The first store was opened in Norway outside Sweden in 1963 followed by Denmark in 1969[2]. Subsequently, the company expanded its branches across the world. Due to government policies, IKEA was not very keen to start a business in India. Later, the Indian government allowed 100% foreign direct investment for single-brand retail. In 2018, the first store of IKEA was opened in Hyderabad, India[1].

IKEA believed that the heart of the business is “Equality, Diversity and Inclusion”[3]. When IKEA was started in India, the objective of the company was to give equal opportunity to all employees. For improving the diverse culture, Mr. Peter Betzel, CEO of Indian operation said diversity was an integral part of IKEA’S DNA[4]. In India, inclusive culture was the highest priority at the workplace. So that, all the employees were valued, empowered, appreciated and motivated for their unique contribution[5]. Already, IKEA started a couple of stores in India. In addition, the company had a plan to start 2 more stores in Noida and Bangalore. Next 7 years, the company’s objective would be to open 30 stores across India[6]. Based on the corporate strategy theory, the company was doing well. However, IKEA had to face a lot of challenges such as heavy competition, policy regulations of India, customers’ minds differed from other countries, the rapid expansion of the branches and high land cost[7]. Having said that, the company had a plan to expand its branches across India. Moreover, the company’s important objective was to maintain a gender diversity ratio. To achieve the same, the company needs more women employees. Recruiting, training and keeping women employees on the board is a huge challenge In India. So, the challenges are huge; how is IKEA going to take all these challenges in the future? would it be a smooth journey for IKEA in India?

Keywords: Diversity, Inclusion, Diversity and Inclusion, Organizational culture, IKEA, IKEA India.

IKEA is one of the well-reputed and known companies in the furniture segment across the world. The objective of the company was to create a better everyday life for people by offering well-designed products, home furnishing products at low cost to as many as people possible[7]. The secret behind the brand name was the first two letters of IKEA, the founder’s name “**I**ngvar **K**amprad”. The E stands for “**E**lmtaryd”, it was a form where he grew up. The ‘A’ stands for **A**gunnaryd, it was his village close[2]. “Kamprad” was born in rural Sweden in 1926. When he was five years old, he started the business. At the age of 17 years, he started IKEA in 1943. Initially, the company was selling pens, pencils, wallets and frames like small household goods[8]. After five years, started selling furniture and opened the first store in 1959 in Almhult, Smaland. The first store was called Mobel–Ikea. In Sweden ‘Mobel’ is meant for furniture[2]. Initially, prices were low. So, customers were skeptical about the products. He took the old workshop for rent and displayed furniture to create reliability among customers. Further, the company faced issues in shipping the large size of furniture due to high expenses. To tackle those issues, the parts of the furniture were dismantled and packed in such a way that was convenient for shipping. On account of that, the company could reduce the cost and price of the products too[8]. Nevertheless, the price of the products got reduced, it did not give a good result. Due to this, in 1955, manufacturers boycotted the company which propelled Kamprad to go for in-house manufacturing. He started all the processes such as designing, production and showcase, etc... Which was one of the important driving strategies of Kamprad[8]. In 1963, the first store was opened in Norway outside Sweden followed by Denmark in 1969. Since 2008, IKEA had been the market leader in its segment across the world. So far, IKEA’s branches are spread across 49 countries with 415 branches and the company had a plan to open more stores in the future. Around 1,50,000 employees were working. The annual revenue was around $37.8 billion. In the UK, IKEA sold one-tenth of furniture annually.

Entry in India

In India, the organized furniture market was only 4%[10]. Since it was not organized, the early entry of IKEA could support capturing more market as well as attract more customers and instill confidence among them[9].

Mr. Betzel who handled the Spanish and German operations of IKEA said that ample opportunities for many companies in India. *“a big need in India -- we are one part of that.”* [11]. In 2006, IKEA applied for permission to do the business. But the Indian government refused.

Because the company wanted to enter without any local joint venture which was against the Indian policies[12]. In 2013, IKEA was the first single retailer to get 100 percent regulatory approval from the government to open the store.

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However, it was not materialised[13]. The company took another five years to set up a strategy and invested significantly to open its first store in Hyderabad, India[14]. The showroom was 4 lakh square feet and spread across 13 acres. In India, the company offered 7500 different products under its roof. The company focussed variety of product areas such as bedrooms, kitchen, living room and children's room[13]. Around 4 million customers visited the Hyderabad store during the financial year 2019[15]. IKEA focused to create 10,000 Employment Opportunities in Maharashtra which led IKEA to open its second store in Mumbai. IKEA's Mumbai store is spread across 23 acres and the company invested $7 billion in its operation. Subsequently, the company had a plan to open its third store in Bangalore. The company had a plan to open 25 stores by 2025 across India with a total investment of ₹105 billion[16] and generate employment opportunities for 15,000 people[17].

Operations in India

Mr. Jesper Brodin CEO of the IKEA group happily said that IKEA had been partnering with Indian manufacturers for more than 30 years[13]. The company's growth was not only connected to the store sales, the food store was also contributing to good business. IKEA's restaurant business was contributing 5.4 percent of the total revenue. The company followed a cost leadership approach believing it was an apt one for the Indian business environment. Moreover, the company applied strategic management theory by which new designs, methods as well as all strategic issues were resolved[9]. Betzel said that during the lockdown, IKEA's online market picked up and which contributed 40% of the total sales. However, online sales did not hamper the offline business. IKEA practiced sourcing the products in India as its worth was 450 million US$[9]. Some market analysts Nirmalya kumar and Lee kong chian, Professor, at Singapore Management University predicted that IKEA would perform well in the long run in India[10].

Culture

Ms. Masson, Country HR Manager, IKEA India, had shared the core values of the company[22].

"The next core value we stress on is simplicity. We try to keep things simple. We have a simple and flat structure at IKEA, a simple way of talking to each other, a simple way of behaving. Simplicity allows us to focus on our tasks, on the right things," she adds[22].

The company strongly believed in three core values such as togetherness, Simplicity and Consciousness[23]. IKEA had been offering very safe, healthy, periodic training programs and a conducive environment for each employee. The company imbibed strong work cultures such as teamwork, cost awareness, modesty and rationale. IKEA encouraged their employees to share their opinions on a companywide survey named "Voice" through which, employees were empowered and company culture also improved. Besides, employees could share their opinion about the management through the "Ikea Leadership Index". The company practiced strong internal communication at the workplace. IKEA had a "Web-enabled service" by which all employees were connected across the world. IKEA followed the informal management style[24].

Challenges

When IKEA entered the Indian market, one of the important challenges was, whether Indian customers would accept IKEA or not? Because, the income levels, taste and resources of the country were different from other countries[25]. The cultural barrier and how to promote the unknown brand to the Indian market was the important challenge[26]. Whenever furniture was required for Indian customers, they could order from traditional carpenters directly. It was convenient and the price is also relatively less. It had been a long-time practice in India[27]. Moreover, carpenters were able to make a design at par with IKEA products and they were using strong wood rather than light one which was being used by IKEA [25]. In such a case, how customers were going to order the furniture in a big showroom like IKEA. Certainly, that was the biggest challenge for IKEA. The model of IKEA was "ready to assemble products". However, In India, customers were used to "ready to use products". Analysts felt, changing customers' mood from ready to use to ready to assemble was very tough [27]. Betzel said, at the workplace, women employees were supported by the company in terms of language skills, behavior skills and retail operation. Nevertheless, the company supported, employees' families did not allow them to go to work. Initially, that was a big challenge[28].

Strategies

The company was working to start smaller stores between 5000 and 10,000 square meters within the city limit to reduce the traveling time of the customers and easy access. On the other hand, the company was tapping small cities as well[36]. Another strategy was to start the Ingka centres or shopping malls. The size of the shopping malls is between 20,000 to 2,50,000 square feet which included restaurants, entertainment zones, lifestyle-oriented shops and theatres[36]. Mr. Mia Lundstrom, Creative Director of Life at Home, IKEA India said that *IKEA introduced the Scandinavian concept in many countries such as* North America, Russia, China, etc. India was also part of that list[37]. The company visited 1000 homes to understand the customer's tastes, preferences and living standards in India. Based on that experience, the products were designed. Another important strategy was every year around 25 percent of the products used to be changed with new ones[37]. To satisfy the Indian customers, the company adopted a price-value equation right strategy[38].

"Our range will have 500 products below Rs. 100 ($2) and 1000 products below Rs. 200 ($4) from the start," Antoni said. "We need to strike a balance between quality and price and this will be a change-driver for us"[38].

On the other hand, the company focused on tapping the upper-middle-class people with western design, very affordable and aspirational products[39]. The company focused on an omnichannel strategy to improve business performance[40]. Across the world, the company practiced DIY (Do-it-Yourself) strategy. On average, the product could be assembled within 30 minutes whereas in India it was just a minute. The clicking systems were introduced instead of screws said Engman[42].

Diversity & Inclusion

IKEA believed, the heart of the business was "Equality, Diversity and Inclusion"[44].

When IKEA was started in India, the objective of the company was to give equal opportunity to all employees. To achieve this, IKEA focussed on Equality, Diversity and Inclusion (ED & I). IKEA believed ED & I was not a strategy but an inherent nature of a company[45]. The company strongly believed in gender diversity and considered it as equal as basic human rights. Especially, in the Indian operation, it was one of the key prerequisites[46]. Therefore, Diversity & Inclusion was a part of the company's vision and value system. The company realized that it brought a win-win situation[47]. For improving the diverse culture in India, Mr. Peter Betzel, CEO of Indian operation said diversity was an integral part of IKEA'S DNA and likely his successor could be a woman from India.

Also, he said at the Bloomberg Equality Summit

"We thought it is essential that India's diversity is represented in our workforce. In India we decided consciously to have 50% women in the workforce. Generally, in India, the female workforce is very low. So, that was why we consciously decided to make a difference,"[48]

IKEA's first store had 48% women employees in India. Initially, the company had a plan to equalize the gender ratio. However, it was 2% lesser than global operations. But, for Indian companies, it was a big trendsetter[49]. When the first store was launched in Hyderabad, Mr. Ramesh Abhishek, DIPP secretary appreciated IKEA's efforts in terms of diversity and inclusive culture and he said

"Women are better than men in every respect and they just need these opportunities and by giving it to them, Ikea is actually showing the way to other corporates. It is actually a win-win for everyone,"[49].

As per the "Jobs for her's DivHERsity" benchmarking report 2019, in India, only 10% of women employees were included in the decision-making process by more than 50% of employers. In addition to that, 49% of Diversity & Inclusion programs were implemented in India after 2015[50]. Hence, for the betterment of ED & I and employee engagement, the company focussed on three important steps. The first one was to balance the gender workforce and infuse leadership among all people. The second one was to focus on people's careers and to provide leadership opportunities to more women. The third one was to allow all employees to share their opinions on the development of the organization[45]. In addition, IKEA was practicing a 50:50 gender balance at the workplace and never compromised on this. The company kept a women's ratio at 60% and 48% at the senior leaders' level and co-workers respectively across all the units[46]. Further, the company gave more importance to recruiting specially-abled talented people and was very keen to give a safe, secure and pleasant environment to those employees[45]. For maintaining equality, on May 17, 2018, IKEA celebrated "IDAHOT". The objective behind this was to inculcate Diversity, Equality and Inclusion in the workplace. Besides, IKEA conducted a special campaign "Besomeoneshome". It was all about welcoming the LGBT+ people to the board[51].

IKEA celebrated an international women's day celebration in which fun programs were conducted and couples were asked to share their work-life balance plan at home. Also organized another program named "fiftyfifty" intending to practice equality at home and in society. Hence, IKEA encouraged people to open and honest conversations at home. IKEA's Instagram had "fiftyfifty" and it was available across 31 countries. That apart, each year, on March 8, the company celebrated ED & I day and welcomed more women to work after their maternity[52]. Moreover, in India, the company launched transportation facilities for women employees, child care facilities on-site for both men and women and part-time work option also announced[53]. Already, in IKEA the diversity level reached a 50:50 ratio for all the management positions. Now, the company focussed on the same at the board level too[52]. IKEA had taken a good initiative for pay disparity. In India, the pay gap between men and women was -0.095%, whereas in other industries it was -30% to -40%. Therefore, the company had an idea to close the pay gap completely[45].

In India, inclusive culture was the highest priority at the workplace. So that, all the employees were valued, empowered, appreciated and motivated for their unique contribution[54]. Therefore, IKEA created a strong inclusive work culture at the workplace. Further to accomplish this objective, the company joined with "Workplace Pride" which is a non-profit umbrella organization and it had been supporting LGBT communities at the workplace[47].

Equality, Diversity and Inclusion is at the heart of IKEA's business. IKEA is an equal opportunity employer and we aim at a workplace where equality thrives. Equality is a fundamental human right. To reach true equality, we focus both on the diversity of our workforce and on fostering a culture of inclusion in our work environment. Our goal is to create an inclusive culture where everyone is valued for their unique contribution, and where they can be themselves.

IKEA India Wins Asia Pacific UN Women Award for Most Gender-Inclusive Workplace, https://humancapitalonline.com/News/details/2040/ikea-india-wins-asia-pacific-un-women-award-for-most-genderinclusive-workplace, accessed on 25.06.21.

Road ahead

India is a wide market; many foreign players were ready to do business. Hence, there was a huge challenge for IKEA, in terms of customers' bargaining power. As IKEA was new to the market, the company did not understand what kind of products were loved by the Indian customers[55]. Already IKEA started two stores in India. That apart, the company had a plan to start 2 more stores in Noida and Bangalore. Next 7 years, the company's objective was to open 30 stores across[56]. Will these rapid expansions give an expected result to IKEA?

In India, acquiring land was a big challenge. As everything was getting commercialized, the land cost skyrocketed. Therefore, the company had to spend huge money to acquire land. Moreover, it was tougher to acquire land in big cities like Mumbai, Delhi, Bangalore and all[57]. At the same time, the company had a plan to expand its branches across India. Moreover, the company's important objective was to maintain a gender diversity ratio. To maintain the same, the company needs more women employees. Recruiting, training and keeping the women employees on board was a huge challenge for the company. Therefore, IKEA has to face all different challenges in India. Will it be a cakewalk or a Nightmare for IKEA to do business in India?

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Printed, Published and owned by Manish Gupta, at MOR Pkt. 105, Kalkaji, (Opp. Kalkaji Police Station), New Delhi - 110019.
Printed by Applauze Creative, No. 3, 2nd Floor, DSIDC, Okhla Indl. Area, Phase-I, New Delhi - 110020. Editor: Amit Gupta