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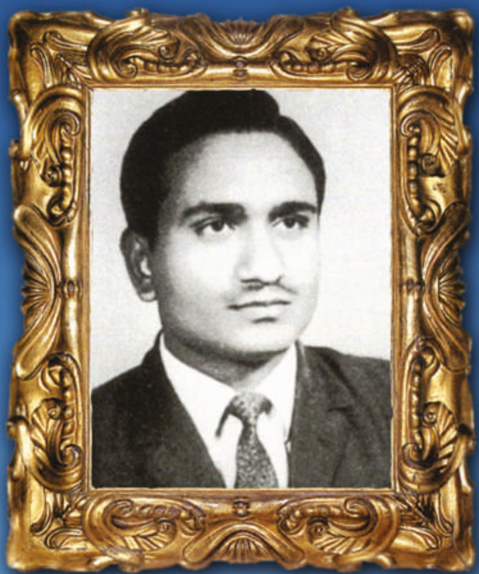
- George Bernard Shaw



Shri Jagannath Gupta
(1950 - 1980)

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He lives no more but his dreams live on....and on!

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Editor's **Desk**

Right to vote in the largest democracy- India

The right to vote is the cornerstone of any democracy, serving as the bedrock of citizen participation and representation. In India, the largest democracy globally, this right holds particular significance, symbolizing the power vested in the hands of its diverse populace. However, the mere existence of this right isn't enough to ensure a robust democratic process; its effective implementation and safeguarding are equally vital.

India's journey towards universal suffrage has been remarkable, with successive amendments expanding the franchise to include women, marginalized communities, and the economically disadvantaged. This inclusivity reflects a commitment to the democratic ideals enshrined in the Constitution.

Yet, challenges persist. Voter suppression, electoral malpractices, and disenfranchisement remain concerns that undermine the sanctity of the electoral process. Additionally, structural inequalities and systemic barriers often restrict certain segments of society from exercising their right to vote fully.

Efforts to enhance voter participation and ensure electoral integrity must be continuous. Voter education, technological advancements, and electoral reforms are essential to make the electoral process more transparent, accessible, and accountable.

Moreover, safeguarding the right to vote necessitates protecting freedom of expression, ensuring a vibrant media landscape, and fostering a culture of political pluralism. Only through such measures can the true essence of democracy thrive, where every citizen's voice is heard, respected, and counted.

As India continues its democratic journey, upholding the right to vote isn't merely a legal obligation but a moral imperative. It's a testament to the nation's commitment to democracy and its people, ensuring that the power to shape the country's destiny rests firmly in the hands of its citizens.

(**Madhu Vij**)

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ASSESSMENT OF SERVICE QUALITY DIMENSIONS OF DISTRIBUTION UTILITIES IN DELHI NCR: IMPLICTIONS FOR STRTEGIC MANAGEMENT

Rajneesh Kumar Srivastava*, R.S.Rai, V.K.Singh*****

Objective: *The purpose of this study is to provide an overview of the performance of public and private owned electricity distribution utilities operating in the Delhi NCR region, assessing the importance of service quality dimensions and their relative significance for domestic consumers. The study also attempts to find out the areas which need more attention and provide insights to the management of distribution companies, policy makers and regulatory bodies.*

Design/Methodology/Approach: *The performance of electricity distribution utilities has been measured through the SERVEPERF Model with customization on six quality dimensions viz.tangibility, assurance, responsiveness, reliability, empathy, and security. Descriptivestatistics were used for data analysis With the aid of SPSS, IBM Statistics 29.0 version and Cronbach Alfa test for reliability. The Kruskal-Wallis one-way analysis of variance test was employed as a non-parametric tool for hypothesis testing and the usage of ranking of scores for comparing scores among different service providers.*

Findings: *The findings indicate that consumersrates the reliability of electricity supply on the top and showed their displeasure on the security and assurance dimensions. These two dimensions as well as some aspects of responsiveness and tangibility require attention of regulators and deployment of adequate resources by the respective companies. According to the findings, BYPL consumers had the greatest average satisfaction rating across all dimensions followed by DHBVN, JVVNL, TPDDL, BRPL, NDPL, and PVVNL. The dissatisfaction of customers with the services provided by PVVNL is also evident and need attention of executives, policy makers and regulator. The study also concludes that certain government companies are performing better than private distribution companies.*

Originality/Value: *This is the original research work with the real time data collected from the field through questionnaire as no study has been done in Delhi's National Capital Region to determine the importance of service quality characteristics to consumers prior to this research. This study will help immensely in optimal allocation of resources to the dimensions requiring more attention.*

Keywords : *Service Quality, Electric Distribution Utility, Regulator, Policymakers, Tariff, Customer SatisfactionSERVPERF*
JEL Code: *M10, M38*

I. Introduction

Since the implementation of the electricity act in 2003 (The Electricity Act_2003, n.d.), the Indian power sector has advanced dramatically. In the past, load shedding occurred rather regularly, even in the capital city of Delhi, and the upkeep of the electric system was subpar. The consumers' access to reliable and adequate electricity was severely limited and unreliable. The lack of regulations and the large/enormous size of the utilities have made it challenging to manage them effectively. Since the 2003 Electricity Act was passed, significant changes have been made in the Indian electricity industry. It was believed that consumers would receive a better bargain on a reliable & stable power supply with the assurance of higher service quality as well as power quality with the unbundling of Electrical utilities into distinct Generation, Transmission, and Distribution businesses. The electricity act also envisioned healthy competition among the utilities. However, despite numerous attempts from policymakers and regulators to make the distribution sector competitive, even though it has been unbundled into various organisations, it still operates as a monopoly. The power ministry also presented the draft Electricity (Amendment) bill, 2018 (Draft Electricity Bill 2018, n.d.), which was the subject of additional discussions over the division of distribution utilities into content and carriage. The proposed revisions called for separate licencing for the power supply and distribution systems. It was intended for various supply licence holders to operate in one area, fostering competition that would improve service quality. A major turning point in the history of distribution sector reforms would have been

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the adoption of the wires and supply segregation proposed in the Electricity Act amendment. It was unable to see daylight, though. Since the energy market opened, a lot of Independent Power Producers (IPP) have stepped forward and built power plants, increasing competition in the generation industry. However, the distribution industry was unable to grow in tandem, and eventually many facilities were unable to operate on the required timetable, leading to a large number of private power generation businesses declaring bankruptcy. According to Jacksaw (Joskow, 2008), the goal of the power sector reforms was to ensure that long-lasting social welfare would be passed on to consumers in the form of higher service quality at lower costs. However, according to Alok Kumar (Kumar, n.d.), the initiative's objective was to reduced to overall technical and commercial loss reduction and the financial strain on the state. The energy sector and its performance as a whole are viewed via distribution sector since it is the only part of power business that interacts with the end consumers directly Unfortunately, because of system inefficiency, a lack of cost-reflective tariffs, and non-payment of bills by the general public and even by government bodies, the distribution sector is continuously under pressure and regularly suffers losses. at times they are not able to upgrade their network which make the system unreliable.(*Power Sector Reforms - See Page 11*, n.d.) . This has a severe effect on the distribution business, and as a result, they regularly resort to load shedding in order to avoid having to pay the generating utilities' bills for the power they have purchased. In light of the aforementioned discussion and the monopolistic market for distribution utilities in India, this study is being conducted to ascertain whether or not consumers are truly obtaining the quality of services to which they are constitutionally entitled.This study investigates the perceptions of service quality held by users of commercial and public distribution utilities. It also investigates how much importance customers place on different facets of service quality and makes recommendations to regulators, lawmakers, and other stakeholders. This study is done on the power utilities operating in the Delhi NCR region, which include both government and private distribution utilities: Tata Power Delhi Distribution Limited (TPDDL), BSES Rajdhani Power Ltd. (BRPL), BSES Yamuna Power Ltd. (BYPL), Noida Power Supply Company (NDPL), Pashchimanchal Vidyut Vitran Nigam Limited (PVVNL), Dakshin Haryana Bijali Vitran Nigam Ltd. (DHBVN), and Jaipur Vidyut Vitran Nigam Limited (JVVNL).Energy distribution utilities' performance has been assessed using the SERVEPERF Model with adaption on six quality aspects, including tangibility, reliability, responsiveness, assurance, empathy, and security.

Electricity and Service Quality

For the socio economic development access of electricity is important. As per the press information bureau bulletin(*Ministry of Power Implements Significant Schemes to Increase Energy Efficiency*, n.d.) per capita consumption of electricity in 2021-22 was 1255 kWh only which comes to one-third of the global average. the highest per capita consumption and rank 104 among all countries.. Iceland has per capita consumption of 52980 kWh and China 5331 KwH (*China Electricity Consumption_ per Capita_ Average _ Economic Indicators _ CEIC*, n.d.)21-22(P). According to ministry of statistics and program implementation the estimated electricity consumption increased from 8,24,301 GWh during 2012-13 to 12,96,300 GWh during 2021-22 with a CAGR of 5.16% (*Consumption of Energy Resources Consumption*, n.d.) In 2009 there were many households without availability of electricity and the electricity was available to only 56% households (Kumar, n.d.). As per (Sarangi et al., 2019) there have been commendable achievements in the form of village and household electrification in the country. The most recent statistics suggests that close to 100 % households have been electrified in the country by the end of March 2019. India still has an extremely low per capita energy usage as compared to other affluent nations, far lower than many south Asian nations, and even lower than the global average. The government Still,has a lot of work to do.A study by Michael Alkin (Aklin et al., 2014) found that the duration of electricity was a significant dominating factor in the rural parts of India. The study had three dimensions: duration of access, reliability, and voltage stability. Customer happiness is the essential for any firm, according to Kotler and Armstrong (Armstrong and Kotler, 2000; Weitz and Jap, 1995), to obtain an advantage over the competitors. For an accurate evaluation of the power system service dimensions, both an internal and external evaluation are necessary. Customer evaluation from the outside and utility review from within. In electricity utility industry, both power and service quality are important characteristic and require consideration by management. (Satapathy et al., 2012). Consumer happiness, which results from high-quality service, can be referred to as the primary drivers of performance for any business that operates on the profit-first tenet.According to Matzler (Matzler et al., 2004), customer loyalty rises with satisfaction, lowers price sensitivity, boosts cross-purchasing, and spreads by word of mouth.Customer happiness has a direct impact on a company's market share and customer retention, according to Hansemark and Albinsson (Hansemark & Albinsson, 2004). Numerous studies have shown that customer happiness and profitability are positively correlated. (Hansemark & Albinsson, 2004; Matzler et al., 2004; Satapathy et al., 2012)

Business managers may therefore make logical judgements about how to effectively use limited resources to achieve the highest level of customer happiness after conducting an IPA and customer satisfaction survey.(2012) Satapathy et al.

II. Review of Literature

Understanding the research conducted in a particular topic and its findings requires a thorough understanding of pertinent literature. Additionally, it provides the researcher with knowledge and perspective for more effective study.The theory is examined in order to make the body of information in the field more understandable and to make the most of it. Additionally, it aids in starting from a higher platform and avoiding the errors made by prior scholars. Customers are king, and the service sector is becoming more customer-centric to gain an advantage over rivals.Understanding the effects of service-encounter conceptions on behavioral intentions, such as physical quality, service quality, and the services capebility, has occupied services researchers for more than 20 years (Nimako, 2012).The notion that customers prefer higher service quality is obvious, particularly if pricing and other cost factors are held constant, receive a great deal of support in the literature on service quality (Cronin & Taylor, n.d.; Sethi, n.d.) (e et al., 2015).Five key aspects of the quality of services were identified by Parasuraman (Parasuraman et al., 1985a), among others: 1) Direct proof (tangibles), such as physical infrastructure, tools, personnel, and communication channels. 2) Reliability, or the capacity to provide the promised services promptly, accurately, and satisfactorily. 3) Responsiveness (responsiveness), which is the staff's eagerness to assist clients and offer service in a timely manner. 4) The guarantee (assurance) states that the staff members are knowledgeable, skilled, courteous, and trustworthy, and that they are free from risk or uncertainty. 5) Empathy, which includes friendly interactions, effective communication, giving individual attention, and comprehending client needs. The service quality was explored byAllcott (Allcott & Greenstone, 2012) and Parasuraman (Parasuraman et al., 1985b) as a function of the gap between consumer expectations and perceptions of service quality. As a result, they created a model to assess service quality based on gaps between observed service expectations and actual service realisation by a client or user.The model, originally known as the GAP Model, was refined and given the name SERVQUAL. It has five dimensions: reliability, responsiveness, tangibles, assurance, and empathy. SERVQUAL is the first tool to assess service quality as a result. Later, the SERVQUAL was widely modified by other scholars.Anwar (Anwar, 2013) has concentrated on the use of quality function deployment at a utility service firm to raise the quality of service through the creation of a house of quality matrix. For power supply firms in China, Zhang et al. (2009) devised a system for measuring the service quality and proposed some measures for problem-solving.An index system has been developed by Wenyu et al. (Wenyu et al., 2007) to assess the service quality of power-supplying firms. Based on fuzzy set theory, Cui et al. (2006) suggested a useful method for evaluating service quality that contains four ratings. They have employed the SERVQUAL scale, which is based on the idea of "perceived" quality and measures tangibility, reliability, responsiveness, empathy, and assurance.In order to identify problems, Zhang et al. (2009) devised a system for evaluating the service quality. Using this system, they then proposed some solutions for Chinese power supply firms' issues. They expanded the scale to take into account seven characteristics (i.e. tangibility, reliability, responsiveness, empathy, assurance, security, and stability) after splitting quality into "PQ" and "service quality".Using a SERVPERF model for factor analysis, Satapathy (Satapathy et al., 2012) discovered that more attention is required to deliver accurate and comprehensive power bills, as highlighted by consumers.In order to confirm consumer satisfaction, Suchismita Satapathy (Satapathy, 2014) used structural equation modelling (SEM). She discovered a direct correlation between the quality of energy services and the attributes of reliability, tangibility, empathy, responsiveness, assurance, security, and stability.The introduction of quality management systems, the quick rise in their popularity, and its advantages for service sectors like power utilities are briefly covered by Wyk et al. (1992). According to Lamedica (Lamedica et al., 2000), the PQ cost of industrial users is the most significant issue in a competitive energy market. A probabilistic technique for assessing the level of supply reliability to a client entering into a performance-based contract with a transmission provider has been described by Hamoud and El-Nahas (El & Eng, n.d.). The most prevalent power issues affecting industries today have been covered by W.W. Carter (Carter, n.d.). A fuzzy inference model for short-term load forecasting in power system operation has been described by Mamlook et al. (2009).

III. Research Design and Methods

According to the researcher's knowledge, no study has been done in Delhi's National Capital Region to determine the importance of service quality characteristics to consumers.

The utilities industry in Orissa's service quality was assessed by Suchismita Satapathy. Therefore, it was judged appropriate to conduct an empirical investigation into the amount of importance that consumers gave to various aspects of service quality provided by the distribution utility in the NCR region and to provide recommendations to the management of the distribution utility as well as policymakers for the improvement of services.

The study's objectives are as follows:

a. Ranking different service quality dimensions in accordance with consumer preferences.

b. To determine whether private distribution companies are performing better than government companies.

c. To determine whether customer priorities for SQ dimensions vary depending on the electricity consumption and billing.

It will be advantageous for the distribution company as well as the consumers to focus more attention on that dimension out of the available limited resources, which can result in a win-win situation for both if the service quality dimensions, are prioritised and inputs are given to the concern management.

According to Chowdhary and Prakash, it is possible to generalise the relative relevance of service quality determinants. The statement that "Generalisation within the service types for different services may happen" is included further. In their study of prioritising SQ dimensions in Ghana's telecom and mobile industries, Simon GiyasiNimako(Nimako, 2012)examined the relative importance of SQ dimensions and discovered that technical excellence was the highest rated factor. They also discovered that "different service providers could generalise within the same service type."

The study's main hypothesis is that:

H1: Depending on electricity usage and billing, consumers' priorities will change.

H2: Private distribution companies will receive higher consumer ratings than public utility providers.

Sampling

A common questionnaire based on the SERVEPERF model was created to find out how satisfied customers are with the quality of the electric utility services offered in their area and what parameters are most important to them. The questionnaire consists of 32 questions on six components of service quality: tangibility, reliability, responsiveness, assurance, empathy, and security for examination on the seven-point Likert's scale. To identify and clarify the uncertainties and realign the questions that were subsequently asked of the respondents, a pilot research with a small sample size of 25 participants was carried out.

Sampling was done among the intended audience. Only domestic consumers of different strata from various distribution utility in Delhi-NCR including public and private distribution companies, namely TPDDL, BYPL, BRPL, PVVNL, DHBVNL, NDPL, and JVVNL were chosen for the study.Because the survey only included domestic consumers, a sample size of 500 respondents was considered in order to access the performance of 7 distribution companies throughout the NCR.Consumer responses to each service quality dimension were gathered using a 7-point Likert scale in the questionnaire. Each of the questionnaire's questions on these six dimensions asked the respondents to react on a seven-point Likert scale with the choices of strongly agree, partially agree, somewhat agree, no opinion, strongly disagree, partially disagree, and somewhat disagree.

Data Analysis Model

With the aid of SPSS, IBM Statistics 29.0 version, descriptive statistics were used for data analysis. Through the Cronbach Alfa test, the reliability of each of the six dimensions was evaluated. In order to determine how much importance customers assign to every dimension, the means of the various dimensions were evaluated and compared. The Kruskal-Wallis one-way analysis of variance test was employed as a non-parametric tool for hypothesis testing and the usage of ranking of scores for comparing scores among different service providers. Six dimensions were examined in total: tangibility, assurance, responsiveness, reliability, empathy, and security.

IV. Results and Discussion

500 survey questionnaires were distributed in total via mail, social media, the internet, telephone, and in-person with family and friends. In comparison to 500 questionnaires, 306 responses were obtained, which is around 61.2%, and can be regarded as a good response. Company A received 50 responses, Company B received 49 responses, Company C received 38 responses, Company D received 84 responses, Company E received 28 responses, Company F received 32 responses, and Company G received 25 responses. Two of them are public sector firms, and the other five are the Private utilities.

To test the reliability and internal consistency of the data Cronbach alfa test was used and it returned the overall value of 0.957 which is quite good. The result of all the dimentions are placed in the table 1 below. well above the acceptable value of 0.70 for demonstrating internal consistency of the Established scale (Nunnally,1998).

Table 1: Reliability test

Dimension	Crobanch's alpha (0.957)
Responsiveness	0.881
Reliability	0.872
Empathy	0.825
Tangibility	0.801
Assurance	0.781
Security	0.584
Total	0.957

Objective of Ranking of various service quality dimensions according to the choice of consumer was tested by assessing the mean value of the dimensions to analyse their relative importance and the results are in the table 2 below. the dimensions have been ranked as per their importance.

Table 2 A : Ranking of Dimentions

Dimensions	Mean (μ)	Ranking
Reliability	4.99	1
Empathy	4.98	2
Assurance	4.97	3
Tangibility	4.96	4
Security	4.95	5
Responsiveness	4.83	7

Table 2 B: Ranking of Dimensions

	All companies		TPDDL		BRPL		BYPL		PVVNL		NDPL		DHBVN		JVVNL	
		R	μ	R	μ	R	μ	R	μ	R	μ	R	μ	R	μ	R
Reliability	4.99	1	4.89	6	4.91	1	6.06	2	4.55	1	4.66	4	5.16	5	5.26	1
Empathy	4.98	2	5.18	4	4.71	4	6.02	3	4.51	4	4.58	6	5.19	4	5.24	2
Assurance	4.97	3	4.89	5	4.71	5	6.08	1	4.53	3	4.79	3	5.46	3	5.04	5
Tangibility	4.96	4	5.05	3	4.71	6	5.89	4	4.51	5	5.10	1	4.90	2	5.24	3
Security	4.95	5	5.28	1	4.89	2	5.65	6	4.54	2	4.85	2	4.85	6	4.94	6
Responsiveness	4.83	6	4.99	2	4.73	3	5.83	5	4.03	6	4.66	5	5.50	1	5.17	4

μ = mean & R = Ranking

Table 2B presents the relative importance of the service quality dimensions provided by consumers across distribution companies A,B,C,D,E,F,& G. The mean of all responses across the companies indicates that the most important service quality considered by the consumers across the whole strata was reliability followed by empathy, assurance, tangibility, security and responsiveness in this order. However, on further analysis it was noted that this ranking is not consistent across all the companies. For example in case of TPDDL the consumers have ranked security as their top priority whereas tangibility was considered on top in NDPL. The consumer of DHBVN gave the top priority to responsiveness and BYPL consumers rated assurance as top priority.

The following hypothesis was examined imperially

"All the six dimensions have positive and direct influence of electricity quality service and adoption."

TABLE-3 :- Correlation between dimensions

	TAN	REL	RES	ASU	EMP	sec	SQ
TAN	1						
REL	.679**	1					
RES	.701**	.764**	1				
ASU	.663**	.778**	.740**	1			
EMP	.725**	.709**	.736**	.657**	1		
sec	.623**	.591**	.629**	.507**	.848**	1	
SQ	.846**	.878**	.886**	.834**	.904**	.818**	1

As per the table 3 above, all the six dimensions have positive and significant correlation and influence on overall service quality. However, their ranking may differ and is shown in table 2A & 2B across all the utilities.

As per the hypothesis 2 the consumer were divided based upon their consumption of electricity. The monthly billing was considered as measure of consumption and the consumers were divided into 5 groups as follows based upon their monthly billing as follows :

TABLE 4:- Category of consumers according to electricity bill

Consumer paying bill less than Rs. 1000	25
Consumers paying bill between 1000 to 2000	58
Consumers paying bill between 2000 to 10000	193
Consumers paying bill between 10000 to 100000	28
Consumers paying bill above 100000	2

In terms of billing 15% paid less than Rs. 1000 per month, 20% paid between Rs. 1000 to 2000,51% respondents paid between 2000 to 10000 per month,14% paid between Rs. 10000 to Rs. 100000 and the people paying more than Rs. 1 lakh per months were insignificant, hence not considered in the analysis. The above categorisation and its analysis shows that most of the respondents were well off and educated people having white goods and high level of electricity consumption. Therefore it can be concluded that the sample quality and quality of respondents is exceedingly good and the respondents understood the questionnaire properly and highlighted their preferences and concerns adequately. The Kruskal-Wallis Test was conducted protesting the hypothesis that the customers priority of service quality dimensions does not differ significantly across all the distribution utilities in Delhi NCR. The results are placed in the table below :-

TABLE 5 :- Relationship between electricity consumption and priority of sq dimensions for respondents

	TAN	REL	RES	ASU	EMP	sec
Kruskal-Wallis H	7.151	7.567	3.537	12.296	7.963	7.043
df	4	4	4	4	4	4
Asymp. Sig.	.128	.109	.472	.015	.093	.134

The results in table shows that all the dimensions were prioritised in similar manner by the respondents in various samples of the survey across the various categories of consumers. In view of the test results above, it can be conveniently said that the priority given by all the 306 respondents can be taken collectively as one single sample of population and it can be concluded that responsiveness is the most important dimension of the service quality for the electricity consumers of Delhi NCR region. The second most important dimension was adjudged as empathy, assurance, tangibility, security and responsiveness inthat order. Thus the ranking given in Table2 A according to the prioritisation of the service quality dimension fulfills the objective of the study.

A summary of Chi-Square test is also available in the above Table 5 indicating the relationship between the customer demographics (electricity consumption/billing) and the priority given by them to the dimension of service quality. On analysis of the test statistics as per Table 5 above it can be noted that for tangible dimension the result of the rating given by the customers among different consumer groups has no significant difference (P= .128>.05) again for reliability also (P=.109>.05), there is no significant difference in consumer rating. For responsiveness (P=0.472>.05) empathy (P=.093>.05) and security (P=.134>.05). However as regard assurance is concerned, the priorities of this service quality dimensions across different categories of consumers differ (P=.015<.05).

For testing of hypothesis 3 i.e. The rating of consumer for private distribution companies shall be better than the public utility firms. The Kruskal-Wallis test was conducted to rank the service provider on different service quality parameters and the results are tabulated in the table 6 below :-

TABLE 6 :- Significance Test

	TAN	REL	RES	ASU	EMP	sec
Kruskal-Wallis H	32.796	33.313	52.342	52.727	46.215	20.185
df	5	5	5	5	5	5
Asymp. Sig.	<.001	<.001	<.001	<.001	<.001	.001

As can be seen from the table 2 B above, the Kruskal Wallis test for ranking was applied to all the service providers and their mean ranks were derived. It can be noted that Paschimananchal Vidyut Vitran Nigam Limited (PVVNL) a Public Sector Company of Uttar Pradesh has done poorly in all the dimensions of service quality i.e. tangibility, reliability, responsiveness, assurance, empathy and security, However, Jaipur Vidyut Vitran Nigam Limited (JVVNL) has done fairly well across all the dimensions and have obtained mostly 2nd and 3rd rank . Similarly Dakshin Haryana Bijali Vitran Nigam (DHBVN) has also done fairly well in all the dimensions whereas BRPL a private sector company of Delhi has not performed as per the expectations of the consumers and have been rated low in all the service quality dimensions. Therefore, the hypothesis that the performance of private sector companies is better than the public sector companies is not verified. The significance value as per the Chi-Square test also indicates that there is significant difference across the distribution utilities for the various service quality dimensions. Therefore, it cannot be concluded for sure that the performance of private distribution companies are better than public sector distribution companies and the performance is dependent on the management of the particular company.

Table : 7

Company	Question No.		
TPDDL	23	3	10
BRPL	15	5	25
BYPL	32	5	15
PVVNL	13	5	15
NDPL	25	27	14
DHBVN	5	6	10
JVVNL	5	20	25

The dimensions so identified is effected to all consumers using electricity in domestic sector. An item-wise analysis of dimensions was analysed to gain insight into the issues for the managers and policymakers. Therefore average score of item under various dimensions is calculated for all sectors. Table 7 shows average score of items under different dimension. It was found that customers of TPDDL are concerned about the delay in bill payment and facilities for old people (empathy). They are also unhappy that although fines are levied for delay payment but rebates are not paid for early/regular payment. The BRPL consumers are in general not happy with the service quality and desired that the penalties are imposed on the company for disobeying electricity rules (tangible). They are also unhappy with the safety measures taken by utility. BYPL customers are generally a happy lot and have concern about support provided for installation of roof top solar panel and penalties on the utilities for their failure. PVVNL customers were the most disappointed a lot as regards service quality dimensions are concerned. Their main grievances regarding intimation about shut down (responsiveness) followed by dissemination of information regarding regulations. The most worrisome concern of PVNNL customers is bribes, humiliations and extra charge which is serious in nature. NDPL customers are concerned about safety and quality of power. DHBVN customers are also concerned about lack of knowledge of regulations right and responsibilities of consumers and complaints centre staff. JVVNL customers are concerned about ease of bill payment and safety.

In general customers of BYPL, PVVNL,DHBVN and JVVNL are not aware of regulations regarding supply code safety and net metering. The regulator of the respective areas need to ensure that the customers know their rights and regulations.

V. Conclusion

It is essential to comprehend consumer needs in order to design policies that will increase customer retention and satisfaction. The study has applied descriptive statistical analysis methods to a survey questionnaire created especially to record domestic customers' perceptions. The results of 32 items were loaded onto six dimensions: reliability, empathy, assurance, tangibility, security, and responsiveness. The significance of the six characteristics was assessed in relation to seven distribution utilities using a seven-point Likert scale. With the aid of Cronbach's alpha, the sample's reliability was assessed, and the resultant value of 0.957 is significantly higher than the required value of 0.70 for proving the internal consistency of the established scale. All of the dimensions' means were examined to determine their relative relevance. All of the service providers' mean ranks were calculated after the Kruskal Wallis test was run on all of them for testing the hypothesis. After the analysis of data, it is noted that consumers have shown maximum satisfaction with the reliability dimension of the service quality. However, the consumer appears dissatisfied with the responsiveness of the companies in general regarding advance information about shutdown and levy of penalty from utility for service default. Non availability of information about regulations and rights of consumer in tangible dimension is also among the prime concerns of the consumers. In order to satisfy customers, the distribution utility must devote more training and resources to improving the system's responsiveness, tangibility, and security. Utilities are also accountable for disseminating information to consumers, and regulators must make sure to make this happen. The dimension of assurance also needs more attention from the respective companies and regulators. According to the findings, BYPL consumers had the greatest average satisfaction rating across all dimensions (5.92; average of all means in Table 2B), followed by DHBVN, JVVNL, TPDDL, BRPL, NDPL, and PVVNL. It is crucial to alert the company's top executives, as well as policymakers and regulators, to the PVVNL customers' increasing dissatisfaction with the services they are receiving.

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ANALYSING STOCK MARKET INTEGRATION IN TOP FIVE GLOBAL ECONOMIES

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Objective: *The primary objective of the research is to determine the linkages between stock markets and to assess the potential for diversification among the selected stock markets of the top five global economies at present.*

Design/Methodology/Approach: *The daily closing prices of the five stock indices for the period January 1, 2011 to October 31, 2023 are analysed in the present study using Granger causality Test, Johansen co-integration test, Vector Auto Regression Model to examine the relationships among the stock markets of the top five global economies.*

Findings: *There is no cointegration, as demonstrated by the results of the Johansen cointegration test, which suggests that these markets do not have any long-term equilibrium linkages. This implies a lack of long-term, consistent mutual effect. On the other hand, Granger causality analysis, reveals the existence of transient causal connections between particular market pairs. These short-term causal linkages show direct effects and directional relationships over short periods of time.*

Originality/Value: *By focusing on the stock markets of the top five global economies (USA, China, Japan, Germany, and India), the study seeks to fill a significant knowledge gap by assisting investors, policy makers, and researchers navigate the complexities of the modern, interconnected global financial system. The study emphasizes how crucial it is to take into account both long-term equilibrium and short-term causal dynamics when exploring the associations among these significant stock markets.*

Keywords : *Top five global economies, Stock market Interlinkage, Granger Causality, Johansen Cointegration, VAR, Cointegration*
JEL Code: *G10, G11, G14, G15*

I. Introduction

This research examines the stock markets of the top five economies in the world in 2023: the US (NASDAQ), China (Shanghai Stock Exchange - SSE), India (National Stock Exchange - Nifty), Japan (Nikkei), and Germany (Frankfurt Stock Exchange - FSE). These countries were chosen due to their significant contributions to the international financial environment, market capitalization, and economic influence. This study offers a distinctive viewpoint because it concentrates on the top five economies globally, whereas earlier studies have often looked at the relationships between emerging and developed markets.

Traditionally, developed markets have been defined as having extensive financial infrastructures, established regulatory frameworks, substantial technical advancements, and generally stable economic conditions. Examples of these economies are the US, Japan, and Germany. These developed markets draw a wide range of foreign investors looking for stability and steady profits since they frequently show reduced volatility and better liquidity. On the other hand, despite having strong economic growth and developing financial markets, economies such as China and India are usually classified as emerging markets. Due to variables including political unpredictability, currency volatility, and evolving regulatory frameworks, these markets are often more volatile and have the potential for quick growth, but they additionally involve a higher risk.

Given their crucial positions in the world economy, a study of the select stock markets of the top five economies in the world today, USA, China, Japan, Germany, and India remains highly relevant. It is imperative to comprehend the interconnectivity of these markets, in order to assess the stability of the international financial structure, identify potential systemic risks, and guide policy decisions for the efficient management of cross-border financial risks.

The present study offers insights that help investors manage risks across these significant markets, optimize portfolio allocations, and make well-informed decisions in the context of an increasingly linked financial world. By concentrating on these particular stock markets, the study seeks to meet

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current needs by helping academics, investors, and policymakers navigate the complexity of the modern, interconnected global financial system and by closing a significant knowledge gap on significant market linkages.

The study of stock market co-movement and integration is of great interest to researchers because of its various aspects. Analysing market integration helps investors and policymakers analyze systemic risks, diversify their portfolios, and develop improved risk management strategies. Navigating the intricate dynamics of modern financial markets requires an understanding of the degree of integration across international stock markets. The extent to which trends, developments, and disruptions in one market can have an international impact on investment portfolios can be determined by the level of their interdependence between stock markets.

It is essential for investors from around the world to understand the inter linkages or lack thereof between various stock markets. Factors such as trade regulations, macroeconomic patterns, technological advancements, and geopolitical events often have a significant impact on these markets. In an increasingly interconnected global economy, investors can manage risks, diversify their portfolios, and take advantage of opportunities by analyzing the correlations, co-movements, or divergences among different markets.

II. Literature Review

Using econometric techniques, Masih & Masih (1997) examined the relationships between the stock markets of Taiwan, South Korea, Singapore, and Hong Kong and the well-established markets of Japan, the United States, the United Kingdom, and Germany. They came to the conclusion that the US stock market dominated the region. Evidence reveals a long-term integration between Singapore and Taiwan. There is a short-term causal relationship between Korea and Taiwan, Taiwan and Singapore, and Singapore and Korea.

Sharma et al., 2013 concluded that the BRICS countries are not influenced by each other to much extent and there exists scope for diversifications for the investors. The domestic factors influence stock markets than they impact each other. The study examined the relationships between the five countries under consideration using the daily closing prices of their stock indexes for five years. Regression analysis, Granger Causality model, VAR model, Variance Decomposition Analysis, and Impulse Response were among the methods employed.

After analyzing the stock market returns of 13 nations over a 20-year period, Valadkhani et al. (2008) concluded that there is a strong correlation between the returns of Asian markets and well-developed nations using factor analysis, PC, and ML techniques. They discovered relationships between stock returns and factors such as economic development and closeness to one another.

Absence of cointegration of Indian stock market with NASDAQ and S&P 500 was found using Engle Granger Cointegartion Nambi, 2010; whereas Tripathy, 2006 found uni-directional causality between developing and developed markets. Some of the markets have exhibited long term cointegration with developed markets taken in the study. The results vary with change in period of study.

Using the daily data of 10 years (1 Jan 2010 to 31 Dec 2019) of exchange rated of US dollar and Euro with closing Values of NIFTY, Khan & Noor, 2020 found that there is unidirectional causality and short term association running from exchange rates to stock prices. Also, co integration equation revealed there exits long term association as well.

Svilokos, 2012 found that there is growing integration between capital markets of old and new European Markets. One cointegrating vector is found that suggests that any fluctuation in one market could be predicted using the price movement of other market. Thus, diversification benefits could not be reaped in the markets of European Union.

Chow et al., n.d. studied the economic integration amongst East Asian countries and with USA by employing time-varying correlations and regression analysis on the data collected for period 1980 to 2011. They found increased integration amongst the markets of East Asian countries and also the recession of USA influenced the markets of East Asian countries.

To investigate the causal linkages among six Asian stock markets and with USA, Bhowmik et al., 2022 over the period 2002-2020, considering several crisis periods used pairwise Granger Causality and GARCH-M model. They found that there were both uni-directional and bi-directional causal linkages among the chosen markets, and that during crisis periods, the markets had grown increasingly cointegrated. Prior to the crisis, integration was weak; however, during the crisis, it strengthened. The VAR model demonstrated the influence of the US stock market on the Asian markets under study.

Acikalin et al. (2008) discovered a steady, long-term correlation between the stock price of the Istanbul Stock currency and macroeconomic indicators such as GDP, interest rates, currency rates, and current account balance. Unidirectional causality is found between macro economic factors under study and ISE; changes in stock market index affects interest rate, while exchange rate and current account balance have an impact on ISE index.

Chi et al., 2006 studied the integration of East Asian stock markets using International CAPM methodology. They concluded that the markets are more integrated within the region. Compared to developed stock markets in the USA, there is a greater degree of cointegration with the Asian market, Japan.

Chittedi (2010) employs econometric approaches to examine the integration of the BRIC countries and with the developed markets of the US, Japan and UK. The study uses daily stock price data covering the period from January 1998 to August 2009. Co integration relationships found between BRIC countries and the developed markets under study. The results of Vector Error correction (VECM) model are found to be significant for India, Japan, Russia, Brazil and UK.

Tripathi & Sethi (2012) investigated the short and long-term interlinkages between the Indian stock market and advanced developing markets such as Brazil, Mexico, Taiwan, Poland, Hungary, and South Africa. Using correlation analysis, Granger Causality and Johansen Cointegration Test were used to conclude that there is unidirectional causality relation in most cases. Long term association is found with Poland only and no cointegration is found with Brazil, South Africa and Mexico.

Daily closing prices of stock indices of 23 countries for the time period of 16 years ranging 1990 to 2005 were analysed and found that the markets have regional integration, except for bi-lateral exchange rates other macro-economic variables are not found to be significant to explain lead-lag association among the markets. During the study period USA and five European markets under study have strong integration with the stock market of India and in the Asian region stock market of India have shown association with markets under study except for Pakistan, Philippines and Singapore. (K. Mukherjee & Mishra, 2007).

To study the long term interlinkages among the region stock market of Indiaand other developed and emerging stock markets, D. K. N. Mukherjee & Mishra, 2005, applied Engel-Granger causality, cointegration and Geweke measures. It was determined that there is no causal relationship or long-term integration between the stock market of India and other markets under study. However, the Geweke statistics showed some lead-lag association in the short run.

Using econometric methods, Bhullar, 2019 investigated the degree of cointegration between the three Asian nations, China, Japan, and India, and found that while China and India have no association, India and Japan have a long run integration.

Goel and Singh, 2021 employed econometrics techniques over the stock market of India and China using monthly data of the fifteen years. They found no cointegration between both the markets and found that these markets are influenced by their own innovations and there exists no lead-lag causality between these markets.

Click & Plummer, 2005 concluded that there is association between ASEAN-5 but that association is not complete. So the benefits of diversification are reduced but not completely eliminated.

According to Abdul Karim et al. (2010), there was no evidence of cointegration among the Islamic stock markets. Consequently, it appears that the long-term co-movements among the Islamic stock markets are unaffected by the subprime crisis of 2007.

Aggarwal & Raja, 2018 found that there is one cointegrating relationship among the four stock markets of BRIC nations. At one percent, the coefficient of VECM is ~0.00031, indicating a negative and highly significant value. This indicates that the variables have a unified, long-term causal relationship.

Objective

The main objective of the study is to identify relationships between stock markets and assess the possibility of diversification among the select stock markets of the top five global economies at present.

The objectives can be divided into the following sub-categories.

- Are there any long-term or short-term association between these markets? This would shed light on the potential benefits of market diversification while making investments.

- To what extent can the innovations and market dynamics in the research account for the variations in prices? This would facilitate the understanding regarding the mutual influence these markets have on one another.
- How quickly do the shocks spread throughout the select study markets? This would shed information on the effectiveness and speed of price adjustment in the markets in the present study.

III. Research Design and Methods

The purpose of this study is to examine the interlinkages between a subset of the top five global stock indices namely USA, China, Japan, Germany and India. The daily closing prices of the five stock indices under study are gathered from Yahoo Finance for the period January 1, 2011 to October 31, 2023. The data collected is converted to log terms for further evaluation using econometrics techniques. To analyse the data statistically, eviews software is used. The tests applied are as follows:

Augmented Dickey Fuller Test (ADF Test)

The time series data can be statistically evaluated only if it is stationary. The ADF test is used to determine whether the data is stationary. The null hypothesis for ADF test is that the time series is non-stationary (that the time series has a unit root). Alternate hypothesis would be that the series is stationary.

If the series is non-stationary at level, the differencing is done. The ADF test is applied at first difference to check the stationarity.

Granger Causality Test

Granger Causality test is used to analyse the short run impact of one variable on the other variable. A variable *X* is said to Granger Cause the other Variable *Y*, if the lagged values of *X* can predict the future values of *Y*.

The null hypothesis is that the lag values of *X* do not Granger cause*Y*. Alternate Hypothesis is that the lag values of *X* Granger causes *Y*.

The null hypothesis would be rejected if the p-value is less that the confidence level.

Johansen Cointegration Test

To confirm the long-term relationship or cointegration among the select stock indices Johansen Cointegration testis applied. Two statistics are considered in this test,the Max Eigen value and the trace statistics. The null hypothesis for Johansen Cointegration is the number of cointegrated equations. The first null hypothesis presents the statistics for none, ie, no cointegration. If the value of trace statistic and Max-Eigen value is greater than the critical value at 5%, the null hypothesis is rejected.

If there is no cointegration then Vector Auto Regression model (VAR) is applied for further analysis but if there is one or more cointegrating equation, that is, there is long term association between variables under study, then Vector Error Correction Model (VECM model) is used.

Vector Auto Regression Model

The VAR is a tool that may be used to evaluate the dynamic impacts of random shocks on variable systems and predict time series systems that are related to each other. The VAR technique eliminates the need for structural modeling by treating each endogenous variable in the system as a function of the lagged values of all the endogenous variables in the system.

Impulse Response Function look for the corresponding impact on other variables when a standard deviation shock is applied to one of the variables. The study used the Cholesky method to ascertain the impulse response.[1]

IV. Results and Discussion

On any day when any of the markets were closed, the closing value from the day before was applied[2] Using Nifty (India) as a base, that is, when the Indian market was open, the values of the other markets under consideration were filled in with their most recent closing price.

[1] Aggarwal and Raja, "Stock Market Interlinkages among the BRIC Economies."

[2] Abdul Karim, AkilaMohd. Kassim, and AffendyArip, "The Subprime Crisis and Islamic Stock Markets Integration."

Table 1 **Descriptive Statistics**

	INDIA	USA	CHINA	DLOGFSE_GER	DLOGNIK_JAP
Mean	10300.32	28.56303	2940.017	98.87841	19648.5
Median	9237	23.75	3024.39	90.01	19975.67
Maximum	20192.35	70.75667	5166.35	186.3	33753.33
Minimum	4544.2	6.8	1950.012	36.125	8160.01
Std. Dev.	4277.304	18.0009	526.2493	43.48844	6576.545
Skewness	0.685449	0.667706	0.14174	0.255958	-0.03477
Kurtosis	2.333019	2.24325	3.504387	1.613469	2.137549
Jarque-Bera	304.9577	309.1267	43.92412	286.6278	98.2303
Probability	0	0	0	0	0
Sum	32435699	89944.99	9258114	311368.1	61873130
Sum Sq. Dev.	5.76E+10	1020053	8.72E+08	5953639	1.36E+11
Observations	3149	3149	3149	3149	3149

The closing value summary statistics for the indices under study are shown in Table 1. The Mean, Median, Maximum, Minimum, and Standard Deviation are shown in the descriptive statistics for the five stock indices under study.

Kurtosis measures the flatness or peakness of the distribution. Kurtosis values greater than three indicate a leptokurtic distribution, with values concentrated around the mean and thicker tails. Kurtosis values less than three indicate a mesokurtic distribution. When the value distribution is Platykurtic (with a large dispersion around the mean), the value is less than 3. India, USA, Germany and Japan have platykurtic distribution and only China has Leptokurtic distribution.

Skewness measures the degree of asymmetry of the series. Normal Skewness means that the distribution is symmetric around the mean; positive skewness has long right tail (i.e. more higher values) and negative skewness has long left tail (i.e. more lower values). India, China, USA and Germany have positive skewness implying that these markets have more higher values whereas Japan has negative skewness implying this has more lower values.

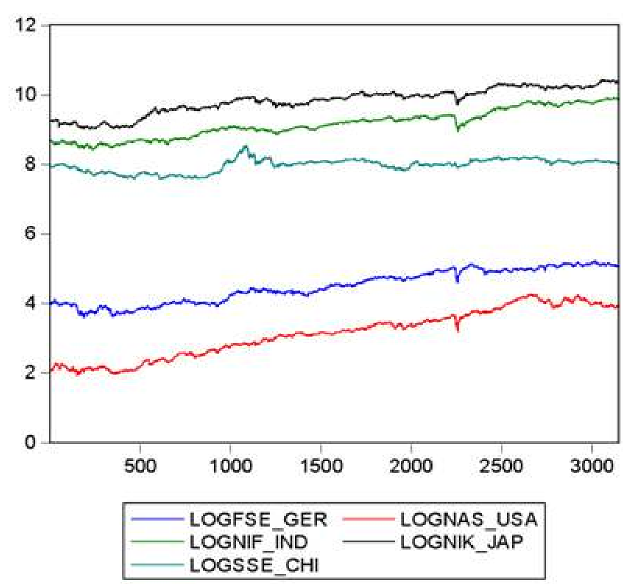
The Jarque-Bera test statistic calculates the deviation between the skewness and kurtosis of the data series from the normal distribution. Since the p-value for each of the five markets under investigation is significantly less than 0.01, the null hypothesis that the data are from a normal distribution is rejected. This suggests that opportunities for investors in the form of abnormal returns exist in each of the markets.

Table 2 **Correlation**

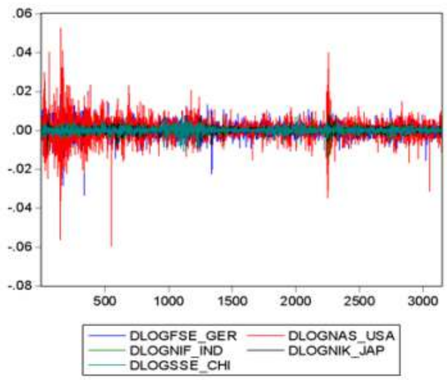
	INDIA	USA	CHINA	DLOGNIK_JAP	DLOGFSE_GER
INDIA	1				
USA	0.962491	1			
CHINA	0.565324	0.571309	1		
DLOGNIK_JAP	0.943591	0.915548	0.664834	1	
DLOGFSE_GER	0.926718	0.939772	0.565303	0.918749	1

The value of correlation ranges between -1 to +1. In the study (table 2), all the values are positive. For detailed evaluation of the same, the relationship can further be categorized as weak correlation if the value is less 0.50, moderate if it ranges between 0.50 and 0.70, strong correlation if the value is greater than 0.70. The Correlation analysis shows that the stock market of China has weak correlation with all the other markets under consideration. India, USA, Japan and Germany have strong correlation with each other.

Graph 1



Graph 2



To further analyse the data, stationarity is checked. Using Eviews, the daily closing prices used in this study were converted to a series of returns by taking the series natural logarithm. Then, the log series were checked for presence of unit root using Line graphs for the log series at level and at first difference. Graph 1 shows the these series are non-stationary at level but stationary at first difference. Augmented Dickey Fuller Unit Root Test is conducted to check the stationarity of the five series at level and at first difference.

Table 3

Unit root test result summary						
Null Hypothesis: the varable has a unit root						
At level						
		LOGNIF_IND	LOGNAS_USA	LOGSSE_CHI	LOGFSE_GER	LOGNIK_JAP
With Constant	t-statistics	-0.34217	-1.102976	-2.200504	-0.684814	-1.027387
	Prob.	**0.9162**	**0.7169**	**0.2063**	**0.8486**	**0.7455**
With constant and trend	t-statistics	-3.747298	-2.556537	-2.813201	-3.911843	-2.559006
	Prob.	**0.0195**	**0.3007**	**0.1925**	**0.0117**	**0.2995**
Without constant and trend	t-statistics	1.871978	1.878586	0.044115	1.256557	1.544157
	Prob.	**0.9858**	**0.986**	**0.6968**	**0.9473**	**0.9703**
At First Difference						
		LOGNIF_IND	LOGNAS_USA	LOGSSE_CHI	LOGFSE_GER	LOGNIK_JAP
With Constant	t-statistics	-15.81566	-19.37879	-11.16839	-19.15658	-16.0914
	Prob.	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
With constant and trend	t-statistics	-15.82123	-19.38769	-11.16658	-19.15471	-16.0893
	Prob.	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
Without constant and trend	t-statistics	-15.69599	-19.24638	-11.16981	-19.10769	-16.00933
	Prob.	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

The summary of ADF test is presented in table 3.It was proven by the line graphs and the Augmented Dickey Fuller Unit Root Test that all the series are non-stationary at level but are stationary at first difference. All of the indices are integrated of order 1, or I(1), ie,stationary at first difference at 5% level of significance

Table 4: **Pairwise Granger Causality Tests**

Sample: 1 3149			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
DLOGNAS_USA does not Granger Cause DLOGNIF_IND	3147	93.9703	6.00E-22
DLOGNIF_IND does not Granger Cause DLOGNAS_USA		2.30414	0.1291
DLOGSSE_CHI does not Granger Cause DLOGNIF_IND	3147	1.64141	0.2002
DLOGNIF_IND does not Granger Cause DLOGSSE_CHI		2.19767	0.1383
DLOGNIK_JAP does not Granger Cause DLOGNIF_IN D	3147	3.81007	0.051
DLOGNIF_IND does not Granger Cause DLOGNIK_JAP		41.9047	1.00E-10
DLOGFSE_GER does not Granger Cause DLOGNIF_IND	3147	37.2269	1.00E-09
DLOGNIF_IND does not Granger Cause DLOGFSE_GER		4.75382	0.0293
DLOGSSE_CHI does not Granger Cause DLOGNAS_USA	3147	0.64631	0.4215
DLOGNAS_USA does not Granger Cause DLOGSSE_CHI		23.4714	1.00E-06
DLOGNIK_JAP does not Granger Cause DLOGNAS_USA	3147	17.6169	3.00E-05
DLOGNAS_USA does not Granger Cause DLOGNIK_JAP		212.762	1.00E-46
DLOGFSE_GER does not Granger Cause DLOGNAS_USA	3147	0.61917	0.4314
DLOGNAS_USA does not Granger Cause DLOGFSE_GER		27.6734	2.00E-07
DLOGNIK_JAP does not Granger Cause DLOGSSE_CHI	3147	0.01397	0.9059
DLOGSSE_CHI does not Granger Cause DLOGNIK_JAP		2.56968	0.109
DLOGFSE_GER does not Granger Cause DLOGSSE_CHI	3147	12.6316	0.0004
DLOGSSE_CHI does not Granger Cause DLOGFSE_GER		1.47101	0.2253
DLOGFSE_GER does not Granger Cause DLOGNIK_JAP	3147	196.999	2.00E-43
DLOGNIK_JAP does not Granger Cause DLOGFSE_ GER		7.37102	0.0067

Granger causality test is used to verify the short term causality relationship.Pairwise Granger Causality Test is performed to confirm the causality among the select stock indices. The null hypothesis is that the variables does not Granger cause and vice versa, a rejection of the null hypothesis shows a presence of Granger causality. The Granger causality test was performed for each pair of stock indices. For all the pairs, the F- statistic and its probability is given in test result. As a general rule, for 5% significance level, if the probability value is less than 0.05, the null hypothesis cannot be accepted.

The results of pairwise Granger Causality exhibit that DLOGNIF_IND has bidirectional causality relationship with DLOGFSE_GER only and unidirectional with DLOGNAS_USA and DLOGNIK_JAP, wherein DLOGNAS_USA granger causes DLOGNIF_IND and DLOGNIF_IND granger causes DLOGNIK_JAP; no causality is shown with the stock market of DLOGSSE_CHI.

DLOGNAS_USA shows unidirectional causality with DLOGNIF_IND, DLOGSSE_CHI and DLOGFSE_GER; bidirectional with DLOGNIK_JAP.

DLOGSSE_CHI has no causality relationship with DLOGNIF_IND and DLOGNIK_JAP; unidirectional with DLOGNAS_USA and DLOGFSE_GER.

The results show that DLOGNIK_JAP has bidirectional causality with DLOGFSE_GER and DLOGNAS_USA; unidirectional with DLOGNIF_IND and no causality with

DLOGSSE_CHI.

The pairwise Granger causality test for DLOGFSE_GER shows bidirectional causality with DLOGNIK_JAP and DLOGNIF_IND; unidirectional with DLOGNAS_USA and DLOGSSE_CHI.

The null hypothesis under Johansen Cointegration is the number of cointegrated equations. The first null hypothesis shows the statistics for none, ie, no cointegration. If the value of trace statistic and Max-Eigen value is greater than the critical value at 5%, the null hypothesis is rejected. At the 5% significance level, the Johansen Cointegration Test result indicates that there is no long-term relationship among the stock indices under study. Since the markets being studied have no long-term association, this indicates that there are chances for portfolio diversification.

Table 6: **VAR Lag Order Selection Criteria**

Endogenous variables: DLOGNIF_IND DLOGNAS_USA DLOGSSE_CHI DLOGNIK_JAP DLOGFSE_GER						
Exogenous variables: C						
Sample: 1 3149						
Included observations: 3140						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	74293.75	NA	1.94E-27	-47.31767	-47.30804	-47.31421
1	74574.01	559.4528	1.65E-27	-47.48026	-47.42244*	-47.45951*
2	74597.36	46.54417	1.65E-27	-47.47921	-47.37321	-47.44117
3	74639.97	84.79062	1.63E-27	-47.49043	-47.33624	-47.4351
4	74659.14	38.08299	1.64E-27	-47.48672	-47.28434	-47.41409
5	74697.13	75.34525	1.62e-27*	-47.49499*	-47.24443	-47.40507
6	74721.18	47.63114	1.63E-27	-47.49439	-47.19564	-47.38718
7	74745.55	48.16388	1.63E-27	-47.49398	-47.14705	-47.36948
8	74766.23	40.83575*	1.63E-27	-47.49123	-47.09612	-47.34944
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Lag order selection criterionis shown in Table 6. The AIC (Akaike information criterion) indicates lag order of 5,SC (Schwarz information criterion) and HQ (Hannan-Quinn information criterion) suggest the lag length of 1. Following the AIC criterion, optimal lag order 5 is selected.

Table 7: **Vector Autoregression Estimates**

Sample (adjusted): 7 3149
Included observations: 3143 after adjust ments
Standard errors in ( ) & t-statistics in [ ]

	DLOGNIF_IND	DLOGNAS_USA	DLOGSSE_CHI	DLOGNIK_JAP	DLOGFSE_GER
DLOGNIF_IND(-1)	-0.041385	-0.300164	0.007673	0.054273	-0.206074
	(0.01942)	(0.09653)	(0.02647)	(0.02123)	(0.05996)
	[-2.13102]	[-3.10959]	[0.28990]	[2.55669]	[-3.43667]
DLOGNIF_IND(-2)	-0.008115	0.048579	0.046980	0.040215	0.071545
	(0.01949)	(0.09685)	(0.02656)	(0.02130)	(0.06016)
	[-0.41645]	[0.50158]	[1.76895]	[1.88812]	[1.18917]
DLOGNIF_IND(-3)	-0.026949	-0.093548	0.001546	0.026242	-0.017202
	(0.01941)	(0.09646)	(0.02645)	(0.02121)	(0.05992)
	[-1.38873]	[-0.96986]	[0.05844]	[1.23713]	[-0.28709]
DLOGNIF_IND(-4)	0.010298	0.132795	-0.002198	-0.014078	0.111256
	(0.01940)	(0.09644)	(0.02645)	(0.02121)	(0.05991)
	[0.53075]	[1.37691]	[-0.08310]	[-0.66378]	[1.85703]
DLOGNIF_IND(-5)	0.059527	0.044815	0.031372	-0.003238	-0.052932
	(0.01927)	(0.09577)	(0.02626)	(0.02106)	(0.05949)
	[3.08948]	[0.46794]	[1.19461]	[-0.15373]	[-0.88972]
DLOGNAS_USA(-1)	0.032390	-0.117962	0.020383	0.044620	0.073548
	(0.00383)	(0.01901)	(0.00521)	(0.00418)	(0.01181)
	[8.46728]	[-6.20397]	[3.90931]	[10.6709]	[6.22682]
DLOGNAS_USA(-2)	0.010628	0.033398	0.000801	0.004742	0.028324
	(0.00398)	(0.01976)	(0.00542)	(0.00435)	(0.01228)
	[2.67313]	[1.68999]	[0.14788]	[1.09111]	[2.30727]

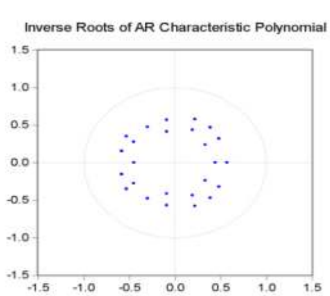
DLOGNAS_USA(-3)	-0.002662	-0.072760	-0.002839	-0.000552	-0.015155
	(0.00397)	(0.01974)	(0.00541)	(0.00434)	(0.01226)
	[-0.67055]	[-3.68670]	[-0.52453]	[-0.12708]	[-1.23614]
DLOGNAS_USA(-4)	-0.004852	-0.056143	-0.002298	0.002817	0.009946
	(0.00397)	(0.01975)	(0.00542)	(0.00434)	(0.01227)
	[-1.22110]	[-2.84267]	[-0.42430]	[0.64869]	[0.81064]
DLOGNAS_USA(-5)	0.010218	-0.033555	0.006907	0.000208	0.043073
	(0.00390)	(0.01940)	(0.00532)	(0.00427)	(0.01205)
	[2.61833]	[-1.72988]	[1.29860]	[0.04879]	[3.57468]
DLOGSSE_CHI(-1)	-0.031617	-0.001280	0.014646	-0.001939	-0.071300
	(0.01375)	(0.06834)	(0.01874)	(0.01503)	(0.04245)
	[-2.29964]	[-0.01873]	[0.78158]	[-0.12901]	[-1.67958]
DLOGSSE_CHI(-2)	-0.018593	0.131365	-0.027514	-0.016545	-0.022476
	(0.01375)	(0.06834)	(0.01874)	(0.01503)	(0.04245)
	[-1.35237]	[1.92226]	[-1.46826]	[-1.10089]	[-0.52944]
DLOGSSE_CHI(-3)	-0.015447	-0.070831	-0.010290	0.012615	-0.078007
	(0.01377)	(0.06844)	(0.01877)	(0.01505)	(0.04252)
	[-1.12179]	[-1.03488]	[-0.54828]	[0.83813]	[-1.83473]
DLOGSSE_CHI(-4)	-0.017045	0.024986	0.015595	-0.007080	0.003461
	(0.01378)	(0.06847)	(0.01878)	(0.01506)	(0.04254)
	[-1.23730]	[0.36491]	[0.83058]	[-0.47021]	[0.08136]
DLOGSSE_CHI(-5)	0.015936	0.003676	-0.003945	-0.001391	-0.087209
	(0.01378)	(0.06848)	(0.01878)	(0.01506)	(0.04254)
	[1.15663]	[0.05368]	[-0.21009]	[-0.09239]	[-2.04997]
DLOGNIK_JAP(-1)	0.023381	0.344572	-0.021601	-0.117223	0.185384
	(0.01772)	(0.08807)	(0.02415)	(0.01937)	(0.05471)
	[1.31961]	[3.91261]	[-0.89450]	[-6.05269]	[3.38866]
DLOGNIK_JAP(-2)	0.014724	0.007273	0.027038	0.030915	0.067606
	(0.01790)	(0.08896)	(0.02440)	(0.01956)	(0.05526)
	[0.82261]	[0.08175]	[1.10832]	[1.58016]	[1.22332]

DLOGNIK_JAP(-3)	-0.005979	-0.043947	-0.002965	-0.048561	-0.123568
	(0.01788)	(0.08885)	(0.02436)	(0.01954)	(0.05519)
	[-0.33450]	[-0.49463]	[-0.12168]	[-2.48534]	[-2.23884]
DLOGNIK_JAP(-4)	-0.001500	0.078948	0.029995	-0.023680	0.006640
	(0.01788)	(0.08889)	(0.02437)	(0.01955)	(0.05522)
	[-0.08386]	[0.88818]	[1.23061]	[-1.21141]	[0.12025]
DLOGNIK_JAP(-5)	0.009820	0.156532	-0.016412	0.038833	0.001091
	(0.01720)	(0.08548)	(0.02344)	(0.01880)	(0.05310)
	[0.57102]	[1.83112]	[-0.70013]	[2.06570]	[0.02055]
DLOGFSE_GER(-1)	0.021180	0.017939	0.019881	0.066222	-0.037364
	(0.00622)	(0.03092)	(0.00848)	(0.00680)	(0.01921)
	[3.40521]	[0.58024]	[2.34511]	[9.74011]	[-1.94552]
DLOGFSE_GER(-2)	0.005138	0.042784	-0.002706	0.002034	-0.037113
	(0.00632)	(0.03144)	(0.00862)	(0.00691)	(0.01953)
	[0.81232]	[1.36097]	[-0.31388]	[0.29422]	[-1.90047]
DLOGFSE_GER(-3)	0.035230	0.015203	0.011265	0.011712	-0.021000
	(0.00632)	(0.03140)	(0.00861)	(0.00691)	(0.01951)
	[5.57605]	[0.48410]	[1.30820]	[1.69592]	[-1.07644]
DLOGFSE_GER(-4)	0.004487	-0.021675	0.001561	-0.005505	-0.029205
	(0.00635)	(0.03155)	(0.00865)	(0.00694)	(0.01960)
	[0.70700]	[-0.68710]	[0.18051]	[-0.79357]	[-1.49036]
DLOGFSE_GER(-5)	-0.012587	-0.068727	0.003426	-0.007043	-0.044950
	(0.00629)	(0.03128)	(0.00858)	(0.00688)	(0.01943)
	[-1.99998]	[-2.19695]	[0.39936]	[-1.02383]	[-2.31308]
C	2.71E-05	0.000241	-7.88E-06	1.94E-05	6.21E-05
	(2.1E-05)	(0.00010)	(2.8E-05)	(2.3E-05)	(6.4E-05)
	[1.30186]	[2.33324]	[-0.27776]	[0.85182]	[0.96616]

R-squared	0.058819	0.041281	0.016430	0.109852	0.034098
Adj. R-squared	0.051271	0.033591	0.008541	0.102712	0.026351
Sum sq. resids	0.004195	0.103642	0.007793	0.005012	0.039994
S.E. equation	0.001160	0.005766	0.001581	0.001268	0.003582
F-statistic	16797.64	5.368514	2.082688	15.38655	4.401480
Log likelihood	-10.67238	11757.76	15824.35	16517.90	13254.15
Akaike AIC	-10.62230	-7.465323	-10.05304	-10.49437	-8.417532
Schwarz SC	4.13E-05	-7.415251	-10.00296	-10.44430	-8.367460
Mean dependent	0.001191	0.000203	3.16E-06	3.47E-05	7.76E-05
S.D. dependent		0.005866	0.001588	0.001339	0.003630
	1.56E-27				
Determinant resid covariance (dof adj.)		1.50E-27			
Determinant resid covariance		74768.91			

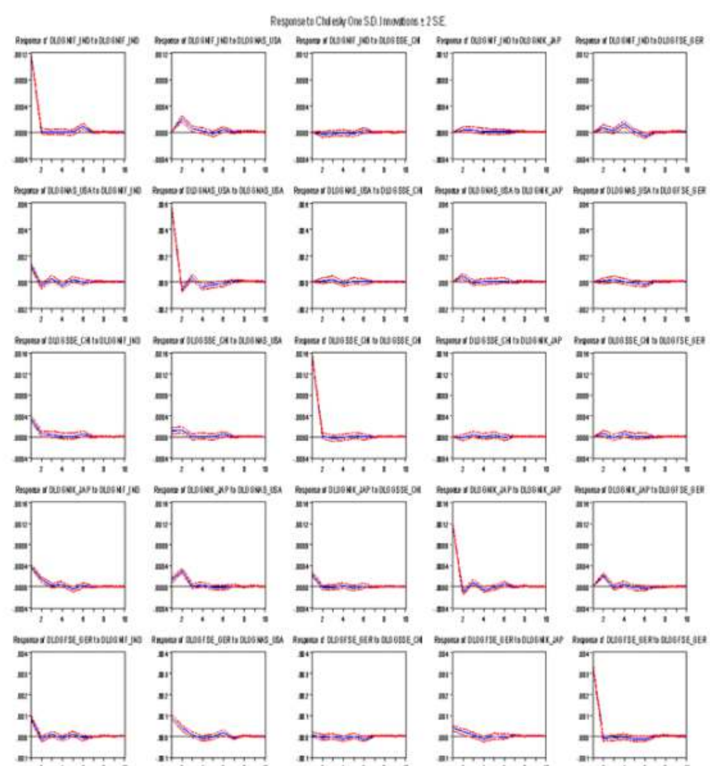
VAR estimates with lag order 5 are shown in Table 7. The standard error is shown in () and the t-statistics in [ ]. For 5% significance level, the critical value is 1.96. The VAR estimates of stock market of India at lag order 1 are significant to capture the dynamics at stock markets of USA, Japan and Germany but not for China. Lag order 5 of Nifty India is able to explain the changes in itself only. The t-values at USA stock market shows that it has impact on all the five markets under study at lag length 1 but lag length 2 is significant for Germany and itself only. The stock market of China does not exhibit influence on any of the markets under study except for itself at lag length 1. The first lag at the stock market is significant to capture the dynamics at USA, Germany and itself. The second lag at Japan stock market is not significant to capture the dynamics of changes in any of the market under study. The third lag is significant to explain the changes in Germany and itself only. The first lag at Germany stock market captures the dynamics at India, China, Japan and Germany. Third lag is significant for Indian market only. VAR model shows that lag order 5 is significant to explain changes at some markets under study.

Graph 3



The VAR satisfies the stability condition as the root values lies within the unit circle (Graph 3). Graph 4 shows the Impulse response for the five markets. The impulse response demonstrates how rapidly the markets absorb shocks and how their own innovations have a greater impact than those of other markets.

Graph 4



V. Conclusion

The data shows how varied and intricate the short-term intermarket connections are in the stock markets of the top five economies. Unidirectional Causality is shown between USA and India, India and Japan, USA and China, Germany and USA, and Germany and China. No causal relationship is revealed between India and China and China and Japan. Three pairs of countries reflected the bidirectional causal relationships viz. India and Germany, USA and Japan, and Germany and Japan. Results of short-term causality point to quick market influence for temporary profits. High-frequency traders and risk management benefit from these relationships. On the other hand, the lack of long-term causality suggests market independence, supporting an array of investing approaches for international.

There does not exist any long term relationship among the stock markets under study, as shown by Cointegration test. There are opportunities for portfolio diversification when the markets are not cointegrated. Own shocks or innovations are more significant than shocks at foreign markets, according to the impulse response from each of the five markets. Any foreign innovation gets absorbed quickly thus implying the efficiency of markets and speedily adjustment of prices. It is critical for decision-makers and market players to understand that the stock markets of USA, China, Japan, India, and Germany are not long-term integrated. Market players may therefore reassess their trading and diversification strategies, placing more focus on factors specific to each country and expecting greater control over market events. Continuous observation is nevertheless necessary since market dynamics can change over time due to a variety of circumstances, necessitating the adjustment of strategies, even though this lack of integration may signal lower systemic risks and potentially more controlled market shock.

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UNLOCKING RELIGIOUS TOURISM IN INDIA FOR RESEARCH- A BIBLIOMETRIC ANALYSIS

Shivani Arora*, Meera Mehta, Renu Gupta***, Arun Julka******

Objective: *The primary objective of the paper is to critically analyze studies on religious tourism in India. The specific research objectives (RO) are to Analyze Religious tourism in India by extracting the publication trends, along with the countries and the contribution of the institutions to this stream of knowledge; Identifying the most productive authors, along with the emerging themes in the research; Enabling the study of the most cited and relevant papers in the field of Religious Tourism in India.*

Design/Methodology/Approach: *The paper analyzes the research undertaken in the field of religious tourism in India. For this purpose, bibliometric analysis has been applied to qualitatively analyze the papers in this field. The data was extracted from the Scopus database, which yielded 135 related research records.*

Findings: *The overall study of the field reveals that religious tourism of Christianity receives the most focus by the researchers and the other religions are less researched in terms of tourism. However religious tourism in India is expected to gain momentum with the inauguration of Ram mandir in Ayodhya. Religious tourism in India has been forecasted to rise steeply and would require all the aspects including sustainability, economic impact, ecological balance, commercialization, consumerism in religious tourism, and impact of pandemic; to be studied emphatically.*

Originality/Value: *The present study is the bibliometric analysis of religious tourism in India. The study is original and provides an insight of the publication trend accompanied by core themes, collaborations, and the most cited and relevant publications in the field have been highlighted in this study. The study also points to the scope of work in this area in future.*

Keywords : *Religious tourism, India, Pilgrimage, Ram Mandir, Religious Places*
JEL Code: *L83, Z10*

I. Introduction

The pandemic affected all aspects of life as well as business. Among the businesses, the tourism industry is one of the worst hits but has been on an upward trajectory since 2022. The COVID-19 pandemic allowed people to slow down and find peace in religion and spirituality. (Kowalczyk et al., 2020; Prazeres et al., 2021; Roberto et al., 2020) this realization accompanied by the phenomena of revenge tourism led to an increase in religious tourism. Religious tourism in India seems to be leading this recovery in tourism. The importance of religious tourism in India is a given since religion and spirituality form the basis of existence. There are innumerable revered places of religious importance in every part of the country and has been attracting people from within and from all over the world. A list of some heavily visited religious places are shown in Table 1.

Table 1: Some Religious Places in India

S.No.	Religious Place	Location
1	Harimandir Sahib (Golden Temple)	Amritsar, Punjab
2	Vaishno Devi Mandir	Katra, Jammu & Kashmir
3	Sabarimala Ayyappa Temple, Malikappuram Devi Temple, Vavar Shrine.	Sabarimala, Kerala
4	Dargah Hazratbal	SriNagar, J&K
5	Sri Venkateswara Temple Akasaganga Teertham Silathoranam	Tirupati, Andhra Pradesh

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6	Ram Mandir	Ayodhya, Uttar Pradesh
7	Shri Kashi Vishwanath Temple Dashashwamedh Ghat Ganga Aarti, Varanasi	Varanasi, Uttar Pradesh
8	Bade Mandir, Guru ji Ka Aashram	Delhi
9	Ajmer Sharif Dargah	Ajmer, Rajasthan
10	Shri Saibaba Sansthan Trust	Shirdi, Maharashtra
11	CharDham Pilgrimage (Kedarnath, Badrinath)	Rishikesh, Uttarakhand (starting point)

Source- Authors Compilation

Some Statistics

More than 60% of tourism in India is religious or spiritual tourism (Saxena, 2023). In 2021, 7.3 crore people visited the renovated Kashi Vishwanath Dham (as compared to 80 lakh in 2020) (Jain, 2023). In 2022, the number of domestic tourists to religious places was 1,433 million, and foreign tourists were 6.64 million (Correspondent, 2023).

1.1. Impact of Ram Mandir

It is estimated that tourism in Ayodhya will increase by 10 times after the inauguration of the Ram Mandir in January 2024. An additional of 50-100 million tourists are expected to visit India for the Ram Mandir pilgrimage. This when compared to the global religious places like Rome's Vatican (with 9 million visitors) and Mecca in Saudi Arabia with 20 million visitors is humungous and indicative of India as a prominent and also emerging religious tourist place.(Jacob, 2024)

Religious tourism in India is expected to grow at CAGR 16% by 2030 and Ram Mandir is being considered as the game enhancer in an already thriving religious tourism industry.. More than 1,100 aircraft have been ordered by Indian carriers to accommodate the increased tourism demand. (Verma, 2024)

The impact of an increase in religious tourism is huge in terms of employment, better infrastructure for the particular religious destination, and an attraction for people from outside India giving the benefit of foreign exchange as well. The impetus to pitch religious places to tourists has been upscaled by PRASAD scheme of the government, which focuses on identifying and developing religious places and enriching the tourism experience.(Correspondent, 2023).

The field of religious tourism is growing and whoever pitches in more and timely, would be able to make the most of it in terms of infrastructural development in turn providing the tourists with comfort and convenience of visiting religious places.

II. Literature Review

The purpose of any research is to solve complicated problems and at the same time present them in a simple comprehensible form. The focus of the paper is on making Religious tourism in India, easy to understand through the data provided by the Bibliometric analysis. Table 1 displays the inclusion and exclusion criteria of the research in detail. Scopus database was searched with the keywords, "Religious" Or "Religion" And "Tourism" And "India", yielding 273 documents, retrieved on February 7, 2024. As displayed in the table various other criteria were applied, to carefully select the documents that remained for final analysis, in this case, 135.

Scopus database has been used to get data on research on Religious tourism in India, though there are other rich databases available as well, and hence the authors do not claim that it is an exhaustive coverage of all the research done in the field. The choice to utilize Scopus was made since it is regarded as a valuable resource for pertinent articles. It is thought that Scopus offers extensive coverage of credible papers (El Baz, J., and Iddik, 2022; Kannan & Thanuskodi, 2019; Md. Khudzari et al., 2018; Mishra et al., 2021).

III. Research Methodology

The analysis of research done on Religious tourism in India is the prime objective of this paper. Bibliometric analysis has been used as an analytical tool to get the data. In addition, the study of the top cited and the most relevant papers has been done to keep the findings crisp. Bibliometrix analysis (Aria & Cuccurullo, 2017; Ebula De Oliveira et al., 2018) (Shivani et.al., 2023), along with the researcher's inputs has been growing in its reach and use for the research in the field.

Objective of the Study

The main objective of the paper is to critically analyze studies on religious tourism in India through bibliometric analysis and qualitatively analyzing the papers in the field. The study of the Scopus database did not yield any bibliometric research that has been conducted on religious tourism in India. The study thoroughly examines the body of work on the topic, the prolific writers, their partnerships, and the themes of vengeance tourism in addition to the institutional research hotspots and nations making the largest contributions to this field of study. The report also identifies new patterns in the field that will guide further investigation.

The specific research objectives (RO) have been enlisted:

Ro1. Analyze Religious tourism in India by extracting the publication trends, along with the countries and the contribution of the institutions to this stream of knowledge.

Ro2. Identifying the most productive authors, along with the emerging themes in the research.

Ro3. Enabling the study of the most cited and relevant papers in the field of Religious Tourism in India.

The findings of the study aim to provide a crisp analysis of the advancement in religious tourism in India, including trend and topic analysis to spark interest in further study. The study aims to provide valuable insights for researchers interested in researching religious tourism in India. Analyzing the most relevant papers in the field would certainly give a deep understanding of the topic and garner more interest.

IV. Data Findings and Discussion

The data from the Scopus database was exported in CSV format and imported to Biblioshiny for Bibliometric application.

Parti-culars	**Code**	**Criteria**	**Comments**
Inclusion Criteria	**IC1**	SearchTerms **Abstract, Article Title, Keywords**	The search terms used for the relevant dataset included the keywords "Religious" Or "Religion" And "Tourism" And "India" The total No. of relevant documents extracted was (N=273)
	IC2	YEAR, 2010-2023	The search focuses on research undertaken between 2010 & 2023. N= 239
	IC3	LANGUAGE, "English"	The study includes documents published in English only. N=238
Exclusion Criteria	**EC 1**	DOCTYPE, "Letter" and "articlesin press"	The search is focused on articles published in the journals and books. And the papers and books are published and not in press N= 150
	EC 2	**Keywords**-(EXCLUDE "Article","Human", "Nepal", "Pakistan" "Humans""Spiritual Tourism")	Certain keywords were excluded from the search giving the final articles and books. N=135

Table 1: *Inclusion and Exclusion Criteria*
Source-Authors Compilation

3.1. RO1. Analyze Religious tourism in India by extracting the publication trend, along with the countries and the contribution of the institutions to this stream of knowledge.

3.1.a. Publication Trend

The first publication in the field was published in the year 1997 in the Tourism Recreation Research by Tej Vir Singh. There has been no Scopus-indexed research in the field for many years to follow. Though India has been viewed as a haven of religious places and there has been extensive religious tourism in the country the research in the field has been frugal. For the last 10 years since 2013, the number of publications has been in the range of 1 to 18. The beginning of Covid in 2020, has been the maximum research papers in the field. The years 2021, 2022, and 2023 saw a good number of publications, 13,15 and 14 respectively.

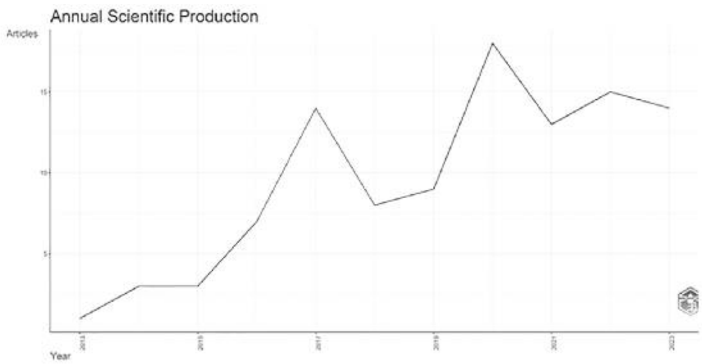

Fig-1: Annual Scientific Publication

3.1.b Contribution in the field by the institutions and the countries.

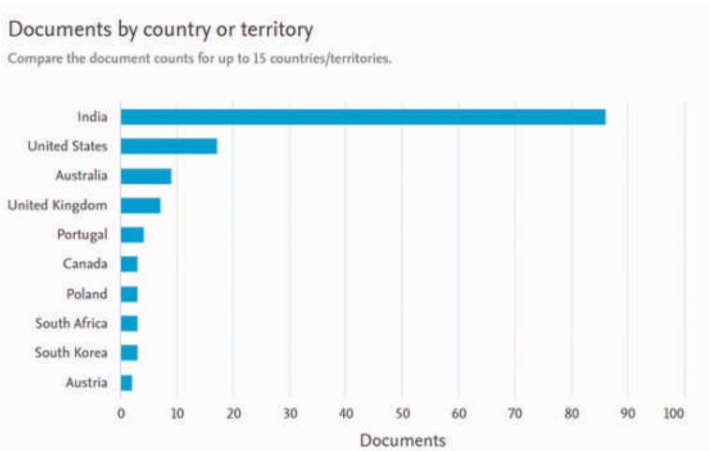

Fig-2: Countries leading the research on religious tourism in India

The papers from India (n=87) take the lead by far from US (17) and other countries in the list as shown in Fig-2 Religious tourism in India has not been taken up as a research objective by the other countries of the world, which may imply that India needs to focus more on building itself as a desired destination for religious tourism.

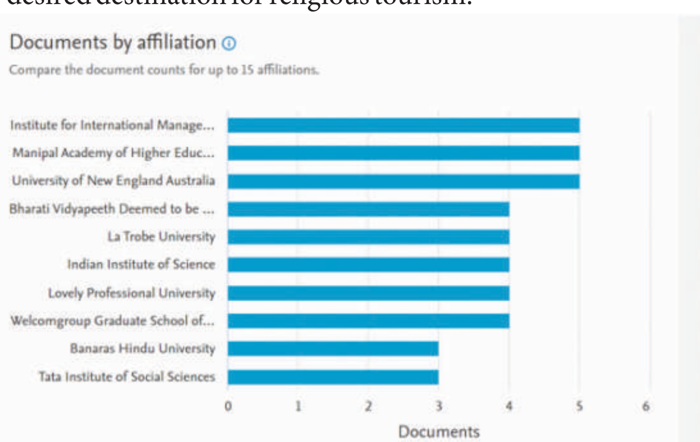

Fig-3 Documents by affiliation

Fig-3 shows the institutions which take the lead in publishing work on religious tourism in India, Institute for International Management and Technology, Manipal Academy of Higher Education and University of New England Australia take the lead with 5 publications each. The other Universities as shown in Fig-3 have 4 and 3 publications.

3.2. RO2. Identifying the most productive authors, along with the emerging themes in the research.

This section discusses the most important source of the publication in the field, the most prolific authors, along with the emerging themes.

3.2.a. Most Relevant Sources of Religious Tourism Publication

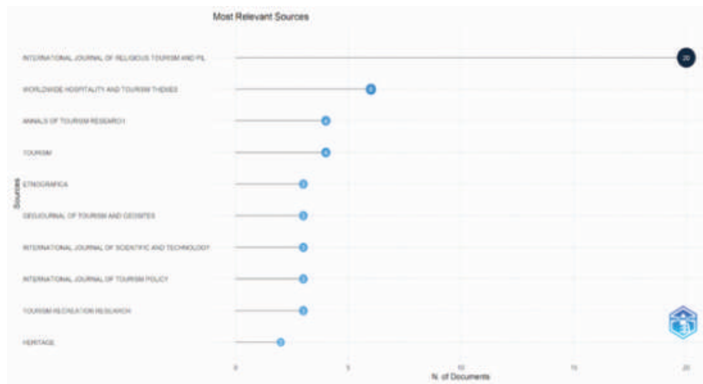

Fig-4 : *Most Relevant Sources of Religious Tourism Publication*

The International Journal of Religious Tourism and Pilgrimage has 20 publications in the field, this is more than three times the next best in the field Worldwide Hospitality And Tourism Themes with 6 publications. Annals of Tourism Research and Tourism have 4 Religious tourism publications. The other journals that make it to the list have 3 or 2 religious tourism publications.

3.2.b. Most Prolific Authors of Religious Tourism in India

Shinde, Kiran A is the most scopus published author with 12 publications which is four times higher than the next most published authors viz., Meghna Verma and Punyabeet Sarangi; Ashish Verma, Knut Aukland; Ranjan Bandyopadhyay, Jyothy Mallya, Bipithalal Balakrishnan Nair, who have 3 publication each. These authors are the leaders in this micro-analyzed field and seeking collaboration with them can give a head start to the researchers in the field of religious tourism in India. The word frequency is indicative of the research accuracy where India (32), tourist destination (18), and religion (17) have occurred the most in the research document. (Fig-5 of word cloud).

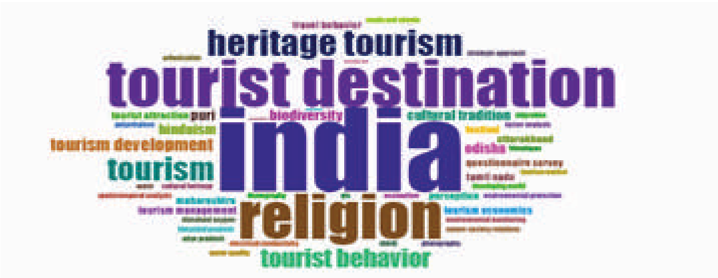

Fig-5: *Word-cloud*

3.2.c. Emerging themes of Religious tourism in India

Thematic mapping helps in identifying the key themes, spotting the new areas of research that are gaining prominence, and identifying the research gaps.

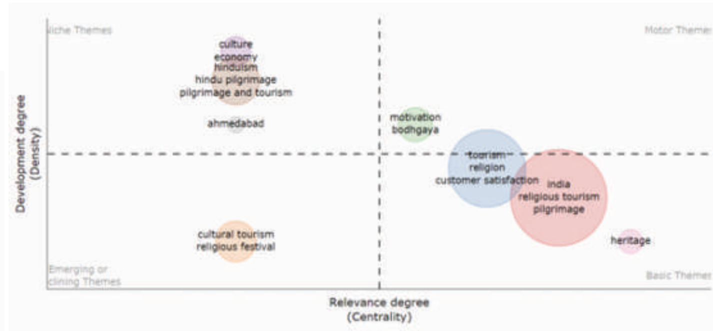

Fig-6 Thematic Mapping

3.3. RO3. Enabling the study of the most cited and relevant papers in the field of Religious Tourism in India.

This section is a combination of Bibliometric Analysis and Systematic review of literature, where the top most cited papers are enlisted and their research summary presented. In addition, the authors thoroughly screened the literature in the field, and shortlisted a few papers that were relevant and interesting for the researchers in the field.

3.3.a. Most Cited Papers

Table-2 Global Citations with Summary and citations

S. No.	**Document Title, Author & Publication Year**	**Summary**	**Publication Source**	**Total Citations**	**Total Citations /Year**
1	Mediated Resistance Tourism and the Host Community Christina A. Joseph Anandam P. Kavoori, 2001	This study uses an ethnographic approach to understand the mediation of tourism by the host community in Pushkar, India, drawing from cultural anthropology, religion, and communication research. It also explores the local discourse of resistance to tourism and the rhetorical strategies deployed by the local population to resist Western tourism while making it locally palatable. The paper highlights the lopsided power dynamics between tourists and hosts, with the burden of adjustment falling on the host community economically, socially, and culturally.	Annals of Tourism Research	114	4.75
2	Religion, Heritage and Travel: Case References from the Indian Himalayas, Sagar Singh, 2010	This paper aims to know what pilgrimage is , particularly in context of Hinduism and Himalayan journeys. While studying tourism, one cannot ignore pilgrimage and various religious travels, as in India it is nearly as ancient as Indian civilization. A study of Proto-historic archaeological sites make it clear that the Hindus practiced mass bathing in rivers/tanks/ reservoirs on auspicious events. This dates back to Indus Valley/Harappan Civilisation, however, there is not much evidence of travel at that time, but the seeds of Indian journey were sown around at that point. The most prevalent reasons for pilgrimage by Hindus include travelling to bathe and pray at religious places. This study affirms that there is difference between the motivation and behaviour of pilgrims and tourists. Despite this, tradition	Current Issues in Tourism	72	3.43
3	Entrepreneurship and Indigenous Enterpreneurs in	The paper highlights the role of religious entrepreneurs in driving religious tourism and the need to understand the differences between religious tourism in the western and non-Western world , particularly in the context	International Journal of Tourism Research	68	4.53

3	Religious Tourism in India, Kiran A. Shinde, 2010	of Vrindavan, India. The paper emphasizes the importance of understanding religious tourism as a natural progression of the traditional pilgrimage economy, influenced by socio-cultural and ritual exchanges. The study uses in-depth interviews, surveys, observation of public behaviour of visitors at temples and their participation in various festivals, events, rituals, and ceremonies.			
4	Sustainable tourism: learning from Indian religious traditions, Vasanti Gupta,1999	This paper elucidates that religious journeys have been undertaken for hundreds of years without causing any adverse effect on environment, culture and social issues related with tourism. Some of the predominant highlights of journeys are: not an over the top burden on the environment; advantageous to nearby communities; happen at certain times of year as it were; individuals carry their own things and buy nourishment, etc. locally; travellers are calm and law-abiding; slaughtering creatures or taking from nature is unthinkable. One can learn few lessons from these prevalent practices for current day tourism.	International Journal of Contempor-ary Hospitality Management	68	2.62
5	Tourism Development in Bhutan: Tensions between Tradition and Modernity, Sandra Brunet, Johannes Bauer, Terry De Lacy & Karma Tshering, 2001	This paper discusses Bhutan's efforts to achieve sustainable development and cultural preservation in the face of increasing tourism demand and potential environmental and cultural impact. It also highlights the challenge posed by political pact between India and Bhutan which allows unlimited numbers of Indian tourists to visit Bhutan and making it difficult for it to achieve cultural and environmental carrying capacity.	Journal of Sustainable Tourism,	65	2.71
6	Emic understandings of Kumbh Mela pilgrimage xperiences, Christine N. Buzinde, Jyotsna M. Kalavar, Neena Kohli, David Manuel-Navarrete. 2014	This paper explores the key motives for participating in the Kumbh Mela pilgrimage, which includes a need for spiritual connectivity and spiritual knowledge attainment. The methodology used was to Interview some focused groups to obtain their opinions, perceptions, and experiences. The activities undertaken by participants were categorised into two, serving self (engaging in prayer, meditation, bathing in the river Ganges, and listening to spiritual discourses) and serving others (voluntary service endeavours). The experiential component of the pilgrimage included experiences of spirituality and social unity.	Annals of Tourism	62	5.64

Source-Author's compilation

The most cited papers enlisted in the table mainly discuss the impact of religious tourism on the local population of the place, which may be met by some resistance by them and the flip side of economic, social, and cultural adjustment by the host community. The main reasons for religious visits to India are guided by the religious texts which include bathing in the water bodies considered sacred and how the religious entrepreneurs are portraying the religious places to the tourists to make it a thriving business. Another point of discussion is how over many years the traditional pilgrimage sites in India have conserved the environment but the increase and the form of present-day high consumerism tourism is causing harm to the environment. Another paper (though related to Bhutan's approach to tourism) discusses the excellent ways employed by Bhutan to achieve sustainable development and preservation of culture as the thriving part of religious tourism.

3.3.b. Extended Analysis

The authors have shortlisted a few more research papers on the topic after careful consideration.

The paper on "Religious Tourism Scholarship: Current State and Future Research Directions" by Sharma and Pearce (2023), offers a valuable overview of religious tourism trends in India. The paper uses the technique of bibliometric analysis of 988 research articles on religious tourism in Social Science Citation Index journals.

The paper's key findings indicate that there has been an exponential growth in religious tourism research publications but the focus is Christianity and Hinduism, Judaism, Sikhism, and Buddhism receive less focus. The paper provides the research directions for the future on sustainability, Covid-19 impact, and reducing the impact of commercialization. (Sharma, S., & Pearce, 2023)

Another worth mentioning paper is Raj's "Negotiating the Sacred in a Globalized World: Religious Tourism and Pilgrimage in India" (2016) paper which analyses the specific impact of globalization on Indian religious tourism. The paper focuses on changes in Shirdi Sai Baba shrine and Bodh Gaya due to tourism. The findings are that there is a gap between modern tourism expectations and traditional religious tourism practices and it makes it difficult for the local communities to balance monetary benefits with maintaining the sanctity of the religious city.(Raj, 2016)

A 2004 paper "Transforming Place: Pilgrimage and Tourism in Puri, India" by Carman follows the journey of the holy city of Puri in terms of the dynamics of tourism. The methodology used is that of observation and interviews of the participants to analyze if pilgrimage and tourism influence each other in the city of Puri. The study indicates that though tourism and pilgrimage are entwined, the experiences and motivations are distinct. It also points out that the growth of tourism affects Puri's sacredness and its local communities. The study also points out that it is important to acknowledge the range of viewpoints and experiences found in pilgrimage and tourism.(Carman, 2004)

Sharma's paper "Gendered Landscapes of Pilgrimage: Negotiating Sacred Space and Embodied Practices in North India" (2016) provides focused research on how women often navigate through religious places and their following of the practices of the pilgrimage. The paper indicates that religious places in North India are not gender-neutral and that women face lesser autonomy and decision-making regarding the pilgrimage as compared to men. Interpretation of religious texts sometimes restricts the access of religious places to women. Women try to navigate these restrictions by performing alternate rituals or they have to rely totally on the male family members. (Sharma, 2016)

Kumar and Singh's (2018) research paper "The Impact of Religious Tourism on Local Communities in India: A Case Study of Shirdi" focuses on the economic and social impacts of tourism at Shirdi Sai Baba shrine on the local community. The key findings are that though it has resulted in economic development, infrastructural improvement, and overall community development it has also impacted the ecological environment of the place raising environmental concerns (water shortage, waste generation, pollution); tourist preferences leading to dilution of the cultural ethics and practices of the region, etc. The study highlights the necessity of sustainable tourism techniques that strike a balance between financial gains, community welfare, and environmental preservation. (Kumar, P., & Singh, 2018).

Table-3 Bibliometric Summary

DESCRIPTION	RESULTS
Time Span	2010-2023
Documents	135 (123 Articles and 12 books)
Annual Growth Rate %	1.19
Document Average Age	6.12
Average Citation per paper	9.548
Most Prolific Year	2020 (18 Publications)
Document Contends	
Keyword Plus (ID)	263
Authors Keyword (DE)	481
Authors	
Total	249
Single Author Articles	52
Most Citations	Kiran A. Shinde (190 citations)
Most Publications	Kiran A. Shinde (12 Publications)
Journals	
TOTAL	96 Journals
Most cited and productive	International Journal of Religious tourism and pilgrimage (20 Publications and H-Index-5)

Source- Author's compilation

V. Conclusion

Though India is rich in its religious places and many people visit these hubs, it is advised to pursue the field academically. The research on the various aspects of Religious tourism includes, how it can be economically beneficial and how the ecological balance can be maintained, The flip side of religious tourism in India is an area that requires more focus from the researchers.

Interested researchers in the field can focus on the International Journal Of Religious Tourism And Pilgrimage since it seems to be conducive to the research of religious tourism in India. The other journals that can be considered are Worldwide Hospitality And Tourism Themes, Annals of Tourism Research and Tourism.

The most cited and relevant papers indicate the role of local communities in shaping religious tourism in India and also, the implications for them in terms of ecological imbalance created by this new age of tourism. Sustainability has been the focus of many research papers on religious tourism. The overall study of the field reveals that religious tourism of Christianity receives the most focus by the researchers and the other religions are less researched in terms of tourism. COVID-19 coupled with revenge tourism has also been considered a driver of religious tourism.

With the inauguration of Ram mandir in Ayodhya, religious tourism in India has been forecasted to rise steeply and would require all the aspects including sustainability, economic impact, ecological balance, commercialization, consumerism in religious tourism, and impact of pandemic; to be studied emphatically.

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ARE WOMEN EMPOWERED IN THE INDIAN HILLY AREAS: A STUDY OF GOVERNMENT FUNDING SCHEME

CA Manav Vigg*, Prof. (Dr) Anil Vashisht**

Purpose: *The purpose of this research is to critically evaluate the implementation and impact of the 'Stand-Up India' scheme initiated by the Government of India, particularly focusing on its effectiveness in empowering women entrepreneurs, especially in hilly regions. The study also compares the level of women empowerment before and after women availed the Stand-up India loan to start their businesses Despite significant policy efforts, the participation of women in key sectors remains stagnant. Thus, this study aims to delve into the operational intricacies of the scheme to understand its efficacy in elevating the position of women in employment and entrepreneurship domains.*

Design/Methodology/Approach: *This study employs a comprehensive research methodology to analyze the 'Stand-Up India' scheme's implementation and outcomes. Both primary and secondary data is gathered from official sources such as SIDBI, NABARD, and the State Bank of India, providing a robust foundation for analysis. Statistical methods including independent sample T test, percentage analysis and pie charts are utilized to dissect the data and uncover meaningful patterns.*

Findings: *The findings of this research shed light on the current status and efficacy of the 'Stand-Up India' scheme in empowering women entrepreneurs, particularly in hilly regions of India. The hypotheses testingimplies that the degree of economic, social and political empowerment among women increased after they initiated their ventures with the assistance of the loan. Analysis of the data reveals insights into the distribution of funds, types of businesses initiated, and loan disbursement patterns. Despite notable efforts by the government, certain challenges persist, hindering the scheme's ability to fully leverage the potential of women entrepreneurship for societal advancement. However, the findings also highlight areas of success and opportunities for improvement, offering valuable lessons for policymakers and stakeholders.*

Originality/Value: *This research contributes to the existing literature by offering a detailed analysis of the 'Stand-Up India' scheme's implementation and impact on women entrepreneurship, particularly in hilly areas of India. By examining a wide range of parameters and employing robust analytical techniques, the study provides unique insights into the operational dynamics of the scheme and its effectiveness in empowering women. The findings hold significant value for policymakers, practitioners, and researchers seeking to design and implement initiatives that promote gender equality and economic development.*

Keywords : *Entrepreneur, Entrepreneurship, women empowerment, government schemes/policy*
JEL Classification Code: *J16, O15, H51, H52,M130, H75,*

I. Introduction

The notion of empowerment emanates from the essence of power itself, manifesting in the act of endowing authority and influence to domains where it is either absent or insufficiently present (Hazarika, 2011). In the work of Sharma and Das (2021), women's empowerment is elucidated as a multifaceted concept encompassing economic empowerment, characterised by financial self-sufficiency; legal empowerment, which entails a robust legal framework ensuring women's safety and security within the nation's legal ambit; and social empowerment, involving social structures that foster comprehensive women's development instead of obstructing their progress. The Human Development Report significantly augmented the scope of women's empowerment by encompassing a comprehensive set of indicators (UNDP, 2022). These indicators encompass three aspects related to women's reproductive health, four pertaining to women's safety, and seven that gauge socio-economic empowerment, including factors such as their presence in high-level managerial roles, access to paid maternity leave, and economic positions, among others.

Throughout Indian history, a remarkable cohort of accomplished women has left an indelible mark on society, stretching as far back as the 18th century. Notable luminaries

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include Ahilyabai Holkar, who distinguished herself as India's first female ruler; Sarojini Naidu, a trailblazer as the inaugural woman governor; Aruna Asaf Ali, honored with the Padmabushan and Bharat Ratna awards for her extraordinary contributions to the freedom movement; Savitribhai Phule, a prolific academician of great repute; and Justice Anna Chandy, who blazed a trail as the nation's first female judge (Bhatnagar, 2020).The pioneering spirit extended to the realm of space exploration, with Kalpana Chawla becoming the first woman of Indian origin to venture into space.Modern India bears witness to an exceptional cadre of women who have shattered glass ceilings in domains traditionally dominated by men. Kiran Bedi emerged as the first woman IPS officer, while luminaries like Kiran Mazumdar Shaw, founder of Biocon; Richa Kar, the visionary behind Zivame; Vandana Luthra, founder of VLCC Ltd.; and Kalli Purie, Vice Chairperson of the India Today Group, have spearheaded multi-million-dollar enterprises, underscoring the gender-neutral nature of the term 'entrepreneur'.In the contemporary epoch marked by globalization and liberalization, women have emerged as formidable entrepreneurs, making substantial contributions to the global growth trajectory (Bullough et al., 2022).

Policy makers have, at various junctures, devised and executed targeted policies aimed at fostering the culture of women entrepreneurship, especially in regions where the contributions of women entrepreneurs have demonstrably enhanced both income generation and economic expansion (Agarwal and Lenka, 2018).The Government of India has diligently enacted noteworthy policies and initiatives aimed at elevating the position of women in the domains of employment and entrepreneurship. These include the National Mission for Women Empowerment (2021), the Women in Manufacturing Programme (2019), herSTART (2018), and the National Credit Guarantee Scheme for Women's Empowerment (2017), among others. However, despite these concerted efforts, the participation of women in pivotal sectors has exhibited stagnation.In India, women currently contribute a mere 18 percent to the nation's Gross Domestic Product (GDP), a figure that ranks among the lowest proportions globally. This situation is emblematic of the stark reality that a mere 25 percent of India's labor force comprises women (Global Gender Gap Report, World Economic Forum, 2023).

Comprehending the operational intricacies of 'Stand-Up India' program and its efficacy in empowering women offers invaluable insights into how government actions can effectively champion the causes of gender equality, economic expansion, and the overarching welfare of society. This research work endeavors to elucidate the pertinence and effectiveness of such initiatives, intending to furnish a blueprint for future policy enhancements dedicated to harnessing the full potential of women entrepreneurship for the broader and more equitable advancement of society. It aims to be a catalyst for change, catalyzing a transformation that empowers women and thereby fuels both individual and collective progress.

II. Review of Literature

Entrepreneurship demands the active participation of diverse segments of society to catalyze economic growth (Agarwal and Lenka, 2018; Olanrewaju et al., 2020). Entrepreneurs manifest an array of skills and competencies stemming from diverse social backgrounds, geographic origins, upbringing, and educational achievements (Anwar et al., 2021). These individuals embody traits such as unwavering determination, a proclivity for risk-taking, elevated self-assurance, an ardent thirst for continuous learning and the embrace of innovative trends, resilience in the face of business setbacks, fervent commitment to entrepreneurial pursuits, and remarkable adaptability (Mitchelmore and Rowley, 2013; Agarwal and Lenka, 2016; Boermans and Willebrands, 2017; Ferreira et al. 2017; Lenka and Agarwal, 2017; Postigo et al., 2021). They excel in interpersonal relationships, networking, and skillfully promoting innovative products and services as their creators. Importantly, these attributes transcend gender boundaries (Omeihe et al., 2023).

Women enter the realm of entrepreneurship driven by a myriad of motivations, including the presence of glass ceiling barriers in the corporate sphere, a yearning for increased work flexibility, a quest for elevated social status, self-recognition, and societal identity (Sharma & Gaur, 2020). They seek to assert their significance and roles within the family, society, and the nation, as underscored by Ferreira et al. (2017), Kushwah et al. (2021) and Noktes (2023).Women's participation in entrepreneurship encompasses adept management of all production elements, a willingness to embrace risk, and active involvement in creative and innovative endeavors. This commitment not only propels their own economic endeavors but also fosters the creation of employment opportunities for others, as emphasized by Agarwal and Lenka (2016) and Sajid et al. (2016).

As time passed, women entrepreneurs started to shift their focus towards what we can call the '3Es' - Engineering, Electronics, and Energy (Agarwal et al., 2018). VanderBrug (2013) indicated that if women's workforce participation approaches parity with that of men, it has the potential to augment Gross Domestic Product (GDP) by a substantial $1 trillion in developing economies. The proactive engagement of women not only affords them opportunities for garnering recognition and prominence on both national and international stages but also serves as a catalyst for bolstering the economic advancement of their respective countries (Daymard, 2015). Demartini (2019) and Kushwah et al. (2021) contemplated that empowerment is an ongoing and progressive journey, not a final destination. It entails the authority to control and access resources and make decisions concerning one's earned income, savings, and expenditures for both household necessities and other purposes. The economic empowerment of women stands as an essential prerequisite for fostering sustainable development, pro-poor growth, and the attainment of all Millennium Development Goals (MDGs).

However, in the context of India, women encounter a complex web of cultural, socio-economic, and gender-based obstacles. In numerous rural areas, as evidenced by Agrawal et al. (2023), prevailing societal and familial norms often dissuade women from pursuing technical or skill-based education, thereby hindering their journey toward empowerment and independent decision-making.This intersectional male dominance perpetuates a constricting environment, limiting women's agency and thwarting their pursuit of economic opportunities and personal development (Dixit et al., 2022).

Gehlot et al. (2022) also contended that, in India's traditional societal framework, women have long been designated to oversee domestic affairs as homemakers. The most formidable hurdles faced by Indian women in the pursuit of entrepreneurial success stem from familial expectations and the weight of personal commitments and responsibilities. In such circumstances, the arduous task of setting priorities and efficiently executing business endeavors becomes exceptionally challenging. Tripathi and Singh (2018) elucidated an array of intricacies inherent in the process of obtaining credit assistance. These complexities encompass the intricate collateral prerequisites demanded for the acquisition of term loans, the exorbitant transaction costs entailed in the realm of imports and exports, the formidable hurdles associated with securing private equity funding, the imposition of elevated interest rates by financial institutions for term loans, the consequential relinquishment of control over a company when private equity investment is sought, the absence of standardized project appraisal systems for term loans, and the weighty burden of cumbersome procedures, frequently leading to protracted delays in the disbursement of funds.

Shamith (2017) underscores that the 'Stand Up India' initiative embodies a long-term vision aimed at enhancing the potential of women entrepreneurs to stimulate economic growth and contribute to building more resilient global communities. It is anticipated that this program will serve as a vital channel and opportunity for motivated women to methodically develop their concepts and ultimately launch their entrepreneurial ventures (Prabhakar et al., 2023).Astonishingly, a mere 10% of scholarly inquiry has been directed towards the study of women entrepreneurs, as reported by Raman et al. (2022) alongside corroborating findings by Welsh et al. (2014). This glaring research gap underscores the pressing need to rectify this dearth in literature. The present research endeavors to bridge this profound chasm in research by delving into the depth of women's involvement in entrepreneurial pursuits, particularly elucidating the significant role played by the Government of India through its Standup India initiative. This study seeks to unravel the extent of women's participation in entrepreneurial ventures, casting light upon the transformative impact of the governmental assistance program, thereby contributing to a more comprehensive understanding of this critical facet of the economic landscape.

III. Research Methodology

This paper aimed to examine the then-present status of the Standup India Loan scheme, a prominent government-funded initiative, with a specific focus on the mountainous regions of India. The research relied on both primary and secondary data sources. Primary data was collected from woman entrepreneurs in the hilly areas, while secondary data was obtained from the official websites of SIDBI, NABARD, and the State Bank of India. The primary objective was to shed light on the extent to which the scheme's benefits had penetrated. To achieve this goal, the study emphasized the allocation of funds through the loan scheme, identified the key banks involved in loan disbursement, outlined district-wise fund distribution to underscore equitable allocation, explored the nature of businesses initiated, assessed loan sizes, and distinguished between guarantee and non-guarantee loans. For this, the investigation employed percentage methods and pie charts for comprehensive analysis. The study also compared the level of women empowerment before and after women availed the Stand-up India loan to start their businesses. Hypotheses were formed to analyze the individual domain of women empowerment among entrepreneur women who availed the Stand-up India loan scheme in hilly areas. A survey was conducted, and questionnaires were administered among Indian women entrepreneurs who availed Standup India Loan in the hilly states, with the questionnaire available in both English and Hindi. Paired sample T-tests were used to test the hypotheses formed. The sampling technique used was judgmental under the non-probability sampling technique. Out of 300 questionnaires administered, 276 were selected for the final analysis, with 47 rejected due to respondent error.

H1: There is no significant difference in the social empowerment of women of hilly area before and after availing the Stand-up India loan.

H2: There is no significant difference in the economic empowerment of women of hilly area before and after availing the Stand-up India loan.

H3: There is no significant difference in the political empowerment of women of hilly area before and after availing the Stand-up India loan.

IV. Results and Discussion

This section is dedicated to analyzing women's empowerment in the North-East region, considering various variables that contribute to all three dimensions: social, economic, and political empowerment. The discussion encompasses the outcomes of hypothesis testing as well as other relevant findings.

Economic Empowerment of Women Before and After Availing the Stand-up India Loan

Findings indicating the analysis of economic empowerment of women entrepreneurs before and after availing the loan are represented in Table 1 and 2. The test reveals a significant difference in the economic empowerment before and after availing the loan as the that the p-value is lower than the 5% significance level. The mean value of women entrepreneurs is observed to be higher after availing the loan compared to before, suggesting a notable enhancement in their economic empowerment. This implies that the degree of economic empowerment among women increased after they initiated their ventures with the assistance of the loan.

Table 1: Statistics of T test on Economic Empowerment

		Mean	N	Std. Dev.	SE. Mean
Economic Empowerment of Women Before and After Availing the Stand -up India Loan	After	12.9601	276	6.03174	0.2029
	Before	12.8949	276	6.05387	0.2043

Table 2: Results of T test on Economic Empowerment

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference: Lower	Upper			
Economic Empowerment of Women Before and After Availing the Stand-up India Loan	After Before	0.0753	0.405	0.0281	0.0397	0.2009	4.607	275	0.000

Social Empowerment of Women Before and After Availing the Stand-up India Loan

Findings indicating the analysis of social empowerment of women entrepreneurs before and after availing the loan are represented in Table 3 and 4. The test reveals a significant difference insocial empowerment among women entrepreneurs before and after availing the Stand-up India loan.It is observed that the mean value of women entrepreneurs is higher post loan availing compared to pre-availing, suggesting an augmentation in their social empowerment. This implies that the degree of social empowerment among women increased following their utilization of the loan to initiate ventures.

Table 3: Statistics of T test on social Empowerment

		Mean	N	Std. Dev.	SE Mean
Social Empowerment of Women Before and After Availing the Stand -up India Loan	After	13.687	276	3.1045	0.1471
	Before	17.955	276	6.5059	0.3516

Table 4: Results of T test on Social Empowerment

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Social Empowerment of Women Before and After Availing the Stand -up India Loan	After Before	-3.2680	6.8150	0.3703	-4.1942	-2.3429	-8.072	275	0.000

Political Empowerment of Women Before and After Availing the Stand-up India Loan

Findings indicating the analysis of political empowerment of women entrepreneurs before and after availing the loan are represented in Table 5 and 6. The test reveals a significant difference inthe political empowerment of women entrepreneurs before and after accessing the Stand-up India loan. It is noted that the mean value of women entrepreneurs is higher post loan availing compared to pre-availing, suggesting an increase in their political empowerment. This implies that the degree of political empowerment among women increased following their utilization of the loan to initiate ventures.

Table 5: Results of T test on Political Empowerment

GROUP		N	Mean	Std. Dev	SE Mean
Political Empowerment of Women Before and After Availing the Stand -up India Loan	After	276	0.3398	0.2569	0.00841
	Before	276	0.2474	0.2124	0.00779

Table 6: Results of T test on Political Empowerment										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Political Empowerment of Women Before and After Availing the Stand -up India Loan	After	6.988	0.014	6.962	550	0.000	0.0824	0.0114	0.0596	0.1255
	Before			8.971	495.86	0.000	0.0725	0.0116	0.0597	0.12554

Results and Discussion

To achieve the objective of assessing the current status of the Standup India Loan Scheme, considering factors such as the number and amount of sanctioned loans, the business status of women entrepreneurs, and the count of Non-Performing Assets (NPAs), we rely on secondary data. Chart 1 presents information regarding the utilization of the "Stand Up India" loan scheme, specifically designed for women belonging to the SC/ST category to establish their own greenfield enterprises. The data reveals that in the Himachal Pradesh region, 276 loans were availed, while Uttarakhand recorded 153 loans. Conversely, Sikkim exhibited a slightly lower number, totaling 110 loans in comparison to the other two states.

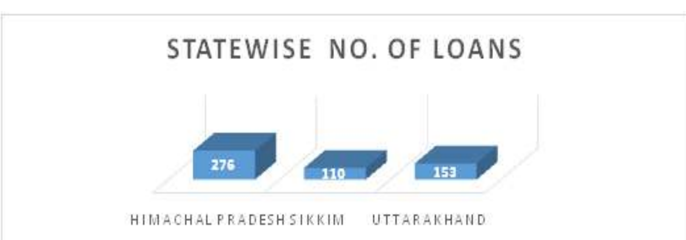

Chart 1: State wise number of loans

Chart 2 provides insights into the distribution of loans based on the respective banks chosen by the population in the three aforementioned states. Specifically, in Himachal Pradesh, 147 individuals opted for the loan scheme offered by Punjab National Bank, while Uttarakhand had 37 applicants, and Sikkim had 12. State Bank of India facilitated loans for 27 applicants in Himachal Pradesh, 77 in Sikkim, and 33 in Uttarakhand. For the Central Bank of India, 23 applicants availed the loan in Himachal Pradesh, whereas the numbers were considerably lower in Sikkim and Uttarakhand. Furthermore, in Himachal Pradesh, 20 applicants chose UCO Bank for their loans, while Sikkim and Uttarakhand had three and seven applicants, respectively. The Bank of India saw 12 applicants in Uttarakhand and only one in Sikkim. Additionally, in Himachal Pradesh, more than 25 applicants obtained loans from other banks such as Corporation Bank and IDBI Bank. In Sikkim and Uttarakhand combined, the total number of applicants who secured loans from other banks exceeded 15.

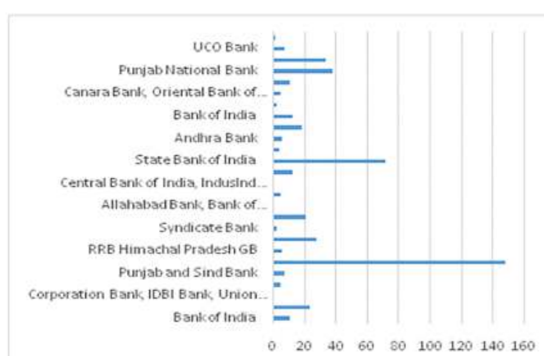

Chart 2: Number of loans, bank-wise in each state

Chart 3 presents data on the distribution of loans based on districts in the three states. In Himachal Pradesh, the Kangra district had the highest participation with 52 applicants, followed by Shimla with 43, Solan with 40, and Mandi with 32. Conversely, only a limited number of applicants from the Chamba district availed the loan scheme. In Sikkim, the distribution across East, West, North, and South districts resulted in 83, 8, 3, and 16 applicants, respectively. Moving on to Uttarakhand, the capital city, Dehradun, witnessed 50 applicants availing the loan scheme. Udam Singh Nagar had 27 applicants, while Nainital, Haridwar, and Almora collectively contributed 50 applicants to the loan scheme.

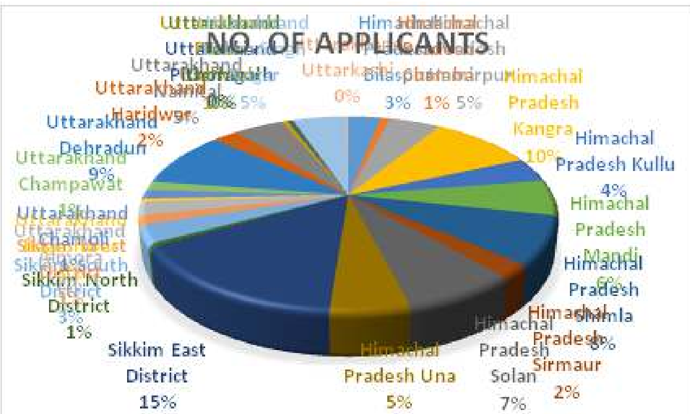

Chart 3: District wise number of loans in each state

Chart 4 outlines the aggregate loan amounts obtained by applicants in the three states. In Himachal Pradesh, applicants secured a total loan amount of approximately five hundred and twenty-two million rupees. Sikkim recorded a total loan amount of Rs. 153,932,004.00 availed by 110 applicants, while in Uttarakhand, the desired number of applicants received a total loan amount of Rs. 351,922,000.00.

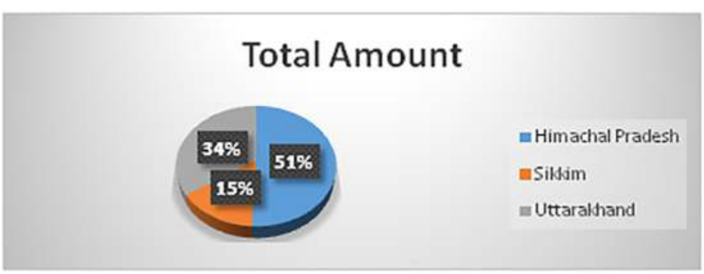

Chart 4: Total amount of loans in each state

Chart 7 highlights the total no. of women who were able to repay the loan amount to the bank which they availed for their business in each state. In Himachal Pradesh, 257 women were paying back the loan. In Sikkim, 101 women were paying back, whereas, in Uttarakhand, 106 women paid back the loan amount.

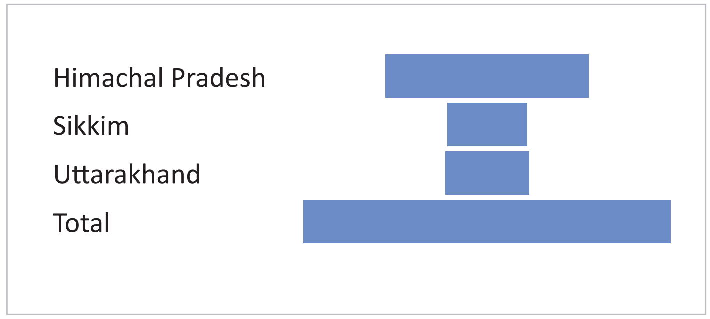

Chart 7: Total number of women paying back the loan, in each state,

Chart 9 highlights the nature of the business that the women applicants established from the loan amount sponsored to them under the scheme. Twenty-eight applicants in Himachal Pradesh established the business in the manufacturing sector compared to 21 in Uttarakhand and 3 in Sikkim. It shows that 248 no. of applicants established business in trading & services in the region of Himachal Pradesh. In Sikkim, 69 applicants invested their loan amount in trading sectors. However, in Uttarakhand total of 132 applicants invested the amount in trading and services.

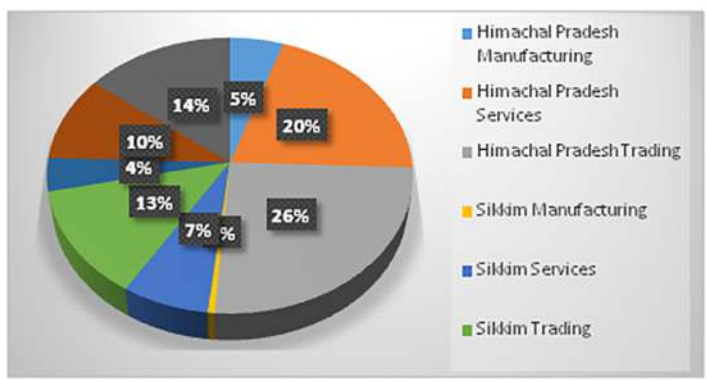

Chart 9: Nature of business-trading or services started from the loan amount in each state

Chart 10 gives the information about the size of loan availed by the desired applicants in the three-state. In Himachal Pradesh, 236 applicants acquired loan up to 25 lakhs compared to 106 in Sikkim, whereas in Uttarakhand, only half the no. of applicants of Himachal Pradesh acquired loan up to 25 lakhs. It shows that in Himachal Pradesh, 33 applicants acquired loan between 26 lakhs and 50 lakhs, seven applicants acquired a loan for the amount more than or equal to 51 lakhs. In Sikkim, a total of four applicants acquired loan between the amount of 26 and 75 lakhs. None of the applicants' acquired loan amount higher than 75 lakhs. In Uttarakhand, 23 applicants availed a loan of amount between 26 lakhs and 50 lakhs. Twelve applicants availed a loan of an amount equal to or more than 51 lakhs.

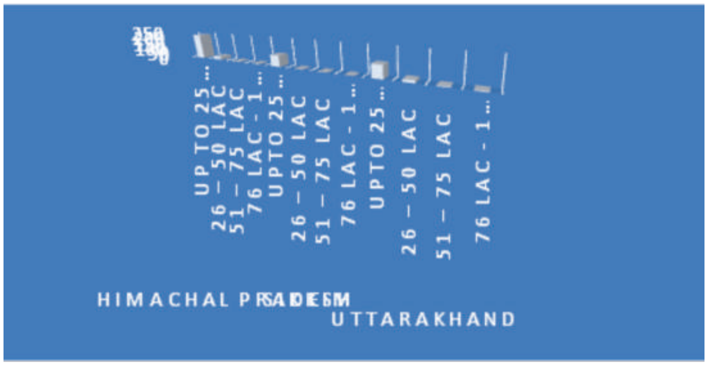

Chart 10: Size of Loan taken in each state

Chart 11 gives information about the no. of applicants who covered the loan amount under a guarantee or collateral in the three states. In Himachal Pradesh, only 81 no. of applicants covered their loan amount under a guarantee or collateral. However, the number of applicants were significantly less in Sikkim and Uttarakhand for those who covered their loan amount under a guarantee or collateral. Eighty-five applicants in Sikkim and 91 applicants in Uttarakhand did not cover their loan amount under any guarantee.

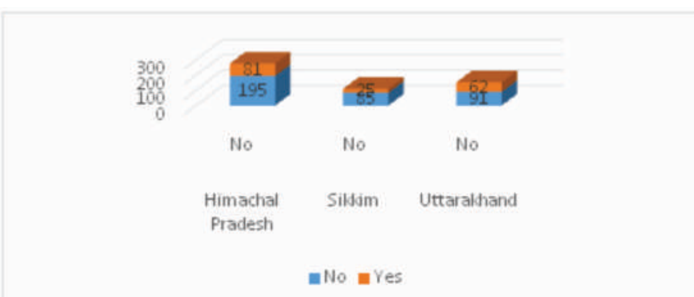

Chart11: Total number of loans covered under guarantee/collateral in each state

V. Conclusion

The examination probes into the present state of the Stand-up India loan initiative, scrutinizing it through various lenses. The hypotheses testing implies that the degree of economic, social and political empowerment among women increased after they initiated their ventures with the assistance of the loan. The findings indicate that the highest number of loans under this scheme were availed in Himachal Pradesh, totaling 276, followed by Uttarakhand with 153 loans and Sikkim with 110 loans. Notably, Punjab National Bank emerged as the preferred bank for Stand-Up India loans in Himachal Pradesh, while State Bank of India held that distinction in Sikkim.Further insights reveal that in Himachal Pradesh, the Kangra district led in the utilization of the loan scheme. In Sikkim, loans were predominantly sought in the eastern region. In Uttarakhand, the city of Dehradun witnessed the highest number of loan applicants. The largest loan amounts were facilitated by Punjab National Bank.An interesting trend emerged, highlighting that in Himachal Pradesh, women played a significant role in loan repayments. However, despite various governmental initiatives, both at the state and central levels, women in these hilly areas, particularly in Himachal Pradesh, continue to face challenges. The primary obstacles include a lack of awareness about available schemes, a hesitancy to make crucial decisions, and insufficient support from both family and community. This underscores the persistent empowerment gap for Indian women in these regions, despite the implementation of numerous schemes over time.

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SUSTAINABLE APPAREL PURCHASE INTENTION: MODERATING INFLUENCE OF ENVIRONMENTAL CONSCIOUSNESS

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Purpose: *This study empirically investigates how environmental awareness and consciousness influences customers' preferences to purchase sustainable apparel. The main objective of this research is to understand the degree to which deeply ingrained environmental values and beliefs impact consumer buying behaviour in relation to purchase intension of sustainable apparel.*

Design/Methodology/Approach: *This research used a quantitative methodology to gather data from a sample of 450 participants. The data collected for the study was through structured questionnaire and data analysis performed using software Smart PLS 4. This methodology makes it possible to comprehend the intricate interrelationship among variables better and identify any potential moderating elements they affect.*

Findings: *The research findings indicate that environmental consciousness significantly moderates consumers' Intention to purchase sustainable clothing. Specifically, those with a higher level of ecological consciousness were significantly more inclined to buy sustainable apparel than those with a lower level of environmental consciousness. This study highlights the increasing significance of environmental awareness in influencing consumer behaviour in the apparel industry and the opportunity for businesses to use sustainability as a distinct competitive advantage.*

Conclusion: *The conclusions of this research improve our understanding of consumer behaviour in relation to sustainable clothing. It provides guidance to businesses aiming to create impactful marketing strategies for promoting sustainable clothes.*

Keywords : *Environmental consciousness, Indian consumers, Sustainable apparel, Intention to purchase, Theory of planned behaviour.*

JEL Classification: *M3*

I. Introduction

Sustainable and environment-friendly apparel is created without the use of any synthetic chemicals. Instead, they include organic apparel high in disease-fighting antioxidants. Concerned consumers have grown increasingly interested in buying sustainable apparel in recent years. This is because there is no danger to the buyer using this apparel (Lauri, R. 2022). An increasing number of research, like that conducted by, indicates that consumers who place a premium on health are more likely to choose sustainable apparel.

Similarly, the research shows that consumers increasingly consider sustainability when purchasing (Luthra S et al., 2016). The private sector's commitment to sustainability is crucial for environmental protection and resilience-building. The developing topic of sustainable and environmentally friendly packaging seeks to find a middle ground between commercial success and protecting the natural world.

According to WTO 2020, India is an essential contributor in manufacturing sector, and the apparels industry is the second most significant exporting industry worldwide (Iqbal, M.A et al 2022). However, as pointed out, the fast development of India's apparels sector over the last decade has resulted in environmental degradation and social difficulties such as terrible working conditions and low salaries (Akter et al., 2022). In Indian apparels industry is expected to increase at an annual rate of 22.3%, from its present worth of $6.1 billion to USD 21.51 billion by 2025. This trend towards buying sustainable apparels directly results from people's desire to do something about the worsening state of the planet. Sustainable apparels is expected to increase at a CAGR of 11.46 per cent from 2015 to 2023, taking the worldwide market to $74 billion. The North American market for environmentally friendly apparel is led by the United States, which accounts for 53% of the total 35% of Asia-Pacific's production and consumption of eco-fibres comes from India (Kautish, P. et al., 2019). Established companies, including

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Van Heusen, Arrow, Nike, and Levi's, have created sustainable clothing lines to appeal to environmentally concerned customers (Khare et al., 2017). The apparels businesses and designers use natural cotton, recycled materials, and handmade silk; they support traditional crafts; they hire local artisans and craftspeople; they adhere to sustainable production practises and fair-trade principles; and they help preserve the environment.

The apparel business significantly contributes to the global economy's expansion. This industry's supply networks are large and complex, covering the world. However, the company faces significant worldwide obstacles due to sustainability concerns (Siddique et al., 2021). Pollutants and effluents are created throughout manufacturing, from developing fibres and textile materials to fabricating and finishing apparel (Islam et al., 2021).

The apparel industry has been criticized for failing to protect the safety of its workers after the Rana Plaza disaster in April 2013. This tragedy was responsible for the deaths of around 1,100 textile workers. The apparel sector is embracing more eco-friendly practices in response to increased consumer awareness and pressure, and the experience of the country's environmental apparels experts is seen as increasingly important (Byrd K. et al., 2021). Textile manufacturers have increased their efforts across a spectrum of environmental and social duties in response to growing demands from various constituencies (Hoque et al., 2023). To distinguish themselves from the competition, Indian apparel makers emphasize the eco-friendliness of their products in their advertising efforts. Fibre and mesh materials have gotten much attention in many businesses because of their unique qualities and uses. These materials have proven essential for improving structures' strength and safety, from fabrics to building materials. In this piece, we will look at the critical roles of fibres and meshes in making buildings more robust and durable while reducing weak fails. Scientists, experts, and academics in the field have done much study to back up this point of view.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

The paper aims to analyse the impact of Indian consumers' desire to buy sustainable clothes in India and explore the concepts of planned behaviour regarding apparel purchasing intentions. In addition, a more comprehensive TPB model and the formulation of hypotheses are discussed.

Ethical fashion and apparel favourable to the environment are two types of increasing demand. Organic fibres, recycled and upcycled materials, and other eco-friendly solutions are gaining popularity in the fashion industry, leading to increased sustainable apparel production (Olwoch, M et al., 2023). Reversible design, ecolabelling, zero-waste design and manufacturing, recycling, and upcycling are a few of the concepts proposed as potential answers to the problem of making the fashion industry more environmentally friendly. The term "sustainability" in the apparel sector refers to how environmentally conscious, ethically sound, and socially responsible practices are followed throughout apparel manufacture, usage, and disposal. Some repercussions include more accountability, fairer trading practices, safer working conditions, and smaller carbon footprints. Sustainable apparels will continue to be strong since consumers are becoming more conscious of the potential impacts that their purchases may have on the world around them (Gupta, M et al., 2024). So, fashion firms must educate themselves on and implement environmentally responsible practices within the apparel sector to thrive in the modern market.

In addition to Hofstede's dimensions, the value orientation model can be used to comprehend cultural differences. This study analyses the collectivism and long-term orientation dimensions proposed by Hofstede and the man-nature orientation dimension proposed by Kluchhohn and Strodtbeck to examine the relationship between cultural values and environmentally conscious purchasing behaviours (Thomoglou et al., 2022). To achieve this goal, a diverse set of criteria has been included in the evaluation process to shed light on the factors contributing to environmentally responsible purchase choices. The study hopes to illuminate the link between cultural values and sustainable purchasing behaviour. The man-nature notion states that people should avoid seeking to control or dominate the natural world and instead strive to live in peace with it. They introduced this factor to comprehend the environmental consciousness of Indian customers better. The authors needed help uncovering research examining how a man-nature orientation affects sustainable apparel production in India.

II. Review of Literature

Many studies have been conducted to understand sustainable apparel's environmental consciousness buying behaviour in different marketing scenarios. Moreover, numerous recent and earlier studies have employed the TPB to study the factors that impact environmentally friendly consumer behaviour (Taufique K.M.R et al., 2018). However, the importance of these studies on environmental consciousness and recycling behaviour has yet to be investigated. Our results suggest that eco-consciousness is highly connected to a recycling purpose attitude and that this attitude and social standards substantially influence recycling practices.

THEORY OF PLANNED BEHAVIOUR

TPB, created by (Ajzen Fishbein, 1985), is a critical conceptual framework for studying environmentally responsible purchasing behaviour. The TPB proposes a correlation between behavioural Intention and an individual's attitude, subjective norms, and PBC. In the investigations above, little consideration was paid to the habits and activities of consumers in the past (Koklic et al., 2019). The Theory considers that actions taken to protect the environment in one sphere may have repercussions in another and that current sustainable consumption practices can affect future practices of the same kind. As a result, TPB provides a comprehensive framework for understanding the factors that lead to the establishment of sustainable consumer behaviour, and it emphasizes the significance of looking at previous behaviour and habits when attempting to predict future behaviour. In other words, TPB is an excellent tool for understanding the factors that lead to the establishment of sustainable consumer behaviour. With the help of TPB, researchers can learn more about the factors that encourage individuals to act on sustainability concerns and develop more effective ways to promote responsible purchase choices. The design was founded on the concept that considering previous sustainable behaviour as a factor that predicts future sustainable apparel, together with other personal and societal factors, may give unique insights into environmentally aware purchasing patterns among consumers. While TPB is a fundamental paradigm for analyzing eco-friendly actions, it has yet to be used in the context of India's sustainable apparel. It is also flexible and allows room for growth (Ajzen, I. 1991). This investigation has resulted in the inclusion of three new variables and five new linkages to the TPB. This study examined the relationship between six variables show in fig 1.

ATTITUDE TOWARDS SUSTAINABLE APPAREL

Their positive or negative emotional response to something reflects an attitude toward it. Several ways describe an individual's disposition (Chen, K et al. 218). In consumer behaviour towards sustainable apparel, "attitude" refers to the extent customers hold a favourable or unfavourable view of these products. This primary psychological reaction may predict customers' behaviours, such as those connected to sustainability, such as purchasing sustainable apparel. Several studies have shown that an individual's viewpoint on life is the single most significant predictor of success.

H1: Attitude towards sustainable apparel has a significant impact on the Intention to purchase sustainable apparel.

SUBJECTIVE NORMS

Subjective standards refer to a person's perception of how others perceive a specific product or activity. These norms are based on an individual's beliefs about what others believe about a particular behaviour, even if those beliefs do not accurately reflect others' attitudes and opinions. It is generally acknowledged that subjective standards can influence an individual's attitudes, perceptions, and behaviour in a way like group or peer pressure. If participants in this research believe that peers would approve of or appreciate their behaviour, they are more inclined to acquire sustainable apparel. Subjective norms have been connected to predicting sustainable and environmental behaviours, such as the desire to purchase sustainable apparel (Teng et al.,2015).

H2: Subjective Norms has a significant impact on the Intention to purchase sustainable apparel.

PERCEIVED BEHAVIOUR CONTROL

PBC refers to an individual's assessment of the ease to performing a particular task. This viewpoint asserts that a person's tendency to participate in a particular behaviour increases if that behaviour is both desired and possible. A person's decision to participate in an activity is greatly influenced by how much control they believe they have over their behaviour. Hence, a feeling of control over one's behaviour is vital (Liobikienė, G. et al., 2016). It has been discovered that it influences people's choices to purchase sustainable and eco-friendly products. To make informed judgments about sustainable apparel, customers must have sufficient information. When customers meet difficulties throughout the purchasing process (such as having a question because they need more knowledge or confidence due to financial or time constraints), they are less likely to purchase.

H3: Perceived behaviour control has a significant impact on the Intention to purchase sustainable apparel.

INTENTION TO PURCHASE SUSTAINABLE APPAREL

When customers want to buy things like sustainable apparel, they are more likely to do so and follow through on their plans. After purchasing sustainable gear, they are more likely to use these things often and in a way that fits with the ideas of sustainability. Also, buying and wearing clothes that are good for the environment can help reaffirm a person's commitment to sustainable practices, which can lead to other changes in behaviour. For example, customers who buy sustainable clothing may be more likely to make other sustainable choices in their daily lives, like using less energy, recycling more, and taking public transportation. However, it is essential to remember that desiring to purchase environmentally friendly products is only one of many things that could affect behaviour (Schlegelmilch et al., 1996). When buying sustainable clothing, a consumer's choice may also be affected by price, level of convenience, and social norms. Because of this, it is essential to make sustainable clothing available to customers and appealing to them in terms of how it looks, how much it costs, and how easy it is to wear. This could help ensure that customers stick to their plans to buy sustainable goods and use them in a way that fits with sustainability principles.

H4: The Intention to purchase sustainable apparel has a significant impact on the behaviour of using sustainable apparel.

ENVIRONMENTAL CONSCIOUSNESS

Several studies have established a positive correlation between environmental consciousness and future sustainable apparel behaviours (Mishal A et al. 2017). Social norms and individual characteristics are significant determinants of sustainability practices. Environmental consciousness is a belief system component reflecting an individual's propensity to engage in sustainable consumption. This concept is considered a mental state variable because it is multivariate, comprising various levels of generality and specificity. The TPB was used to examine the differences in environmental awareness between American and Chinese consumers and found a correlation between environmental awareness and sustainable and environmentally favourable purchasing decisions. A consumer behaviour model for environmental awareness has been created to explain the disparity between consumers' intentions and actions when purchasing sustainable apparel.

H5: Environmental consciousness moderates the relationship between the Intention to purchase sustainable apparel and the behaviour to purchase sustainable clothing.

For the conceptual framework the study has used TBP model with an introduction of environmental consciousness as moderating variable .This study specifically examines how environmental consciousness acts as a moderating variable in the context of sustainable apparel purchasing. This involves confirming the relationship between environmental consciousness and sustainable purchase intention. The study would highlight the complexities of consumer behavior in the sustainable apparel market and help identify more effective strategies for promoting sustainable consumption practices.

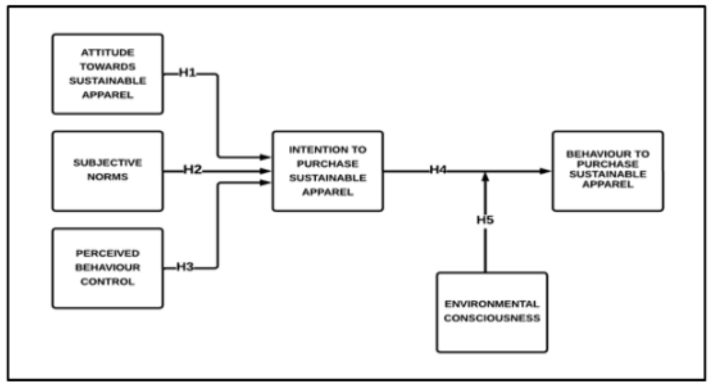


Figure 1: Conceptual framework

III. Research Design and Methods

After exhaustive literature survey the study and focus group interaction of higher education students the conceptual framework was developed (Figure 1). Structural Equation Modelling (SEM) analysis method was used to examine structural correlations among several variables. This method integrates component analysis and multiple regression analysis to investigate intricate correlations between observable and latent variables. Structural Equation Modelling (SEM) is well-suited for evaluating complex theoretical frameworks with many equations, making it a perfect fit for our research.

MEASUREMENT CONSTRUCT

A thorough research measurement informed the development of our research comprehensive and methodically structured questionnaire. The questionnaire was revised from its predecessor and was grounded on TPB. The questionnaire examined the seven dimensions of environmental awareness by using a 5-point Likert scale. Participants were required to indicate their degree of agreement on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). These dimensions were further divided into subcategories. The six aspects of the model created explicitly for this study. A comprehensive and well-structured questionnaire with various evaluation components establishes a robust foundation for examining the correlation between environmentally responsible purchasing decisions and sustainability.

DATA COLLECTION

The data came from primary and secondary sources. Reputed journals, papers, websites, and Scopus articles were used to assemble the secondary data. The first component of the questionnaire was intended to provide a complete picture of the respondent's profile. The remaining portions of the questionnaire were divided into three groups. Using a Likert scale of one to five points, these sections were designed to elicit respondents' opinions and gauge their awareness and flexibility. Data collection was made possible by convenience sampling and disseminating a Google form via Facebook and WhatsApp groups. All 450 data sets were gathered; 50 were eliminated because of incomplete or biased data. The first step before starting the analysis was cleaning the data. Those who desire to buy apparel that utilizes environmentally friendly materials will also be included in the project's data-gathering activities.

DEMOGRAPHIC PROFILE OF RESPONDENT

Table 1: Demographic profile of the respondents

		Frequency	Percent
Gender	Male	252	61.8
	Female	173	38.2
Age	Below 15	89	36.2
	26-35	72	29.3
	36-45	57	23.2
	46 to above	28	11.4
Education	Schooling	23	9.3
	Graduate	126	51.2
	Post Graduate	68	27.6
	Others	29	11.8
Occupation	Students	79	32.1
	Homemaker	68	27.6
	Service	34	13.8
	Own business	33	13.4
	Others	32	13.0
Family Income (Indian rupees)	Up to INR 25,000	81	32.9
	INR 25,001-50,000	93	37.8
	INR 50,001-75,0001	44	17.9
	INR 75,001-1,00,00	15	6.1
	Above INR 1,00,000	13	5.3

IV. Data Analysis and Findings

The study has used Partial Least Squares method for structural equations modelling and the analysis is based on Path analysis is important for identifying direct and indirect relationships among variables in models, identifying complex causal frameworks. Discriminant validity confirms the distinctness of constructs, improving research precision and dependability. Path coefficients measure the strength and direction of relationships between variables, facilitating the interpretation of models and supporting theory advancement. R-squared quantifies the proportion of variance in the dependent variable explained by independent variables, reflecting the model's explanatory power.

PATH ANALYSIS AND MEASUREMENT MODEL

We conducted convergent and divergent validity tests to ensure the accuracy and precision of our scale. An AVE of at least 0.5 and factor loadings of 0.70 were used to show convergent validity (Hair et al., 2011). According to the recommendations of Hair, we used Cronbach's alpha to determine the scale's reliability, and we found it to be valid if the value was more than 0.70. One of the factors that were employed in the process of deciding whether or not the composite was legitimate was the extent to which the individual measurement items matched the latent variable. There was a high degree of dependability across all constructs, with all composite reliability scores being higher than the cut-off value 0.70 established by Carmines and Zeller. The AVE scores were computed so that an assessment could be made on the possible predictive ability of the underlying constructs for the observable variables. When the AVE is more than 0.5, there is a high degree of validity in both the convergent and discriminant directions. According to the results, all the constructs were at good and reliable levels within the criteria established beforehand. Factor loadings, composite reliability, and Cronbach's alpha are all show in Table 2.

Table 2: Loading, Ave & reliability result

Construct	Indicators	Loading	Cronbach's alpha	(rho-a)	(rho-c)	AVE
ATSA	ATSA 1	0.868	0.802	0.803	0.869	0.625
	ATSA 2	0.741				
	ATSA 3	0.706				
	ATSA 4	0.838				
BPSA	BPSA 1	0.760	0.772	0.804	0.863	0.679
	BPSA 2	0.828				
	BPSA 3	0.880				
EC	EC 1	0.823	0.772	0.800	0.860	0.672
	EC 2	0.840				
	EC 3	0.975				

IPSA	IPSA 1	0.828	0.903	0904	0.933	0.776
	IPSA 2	0.879				
	IPSA 3	0.918				
	IPSA 4	0.898				
PBC	PBC 1	0.854	0.770	0.767	0.868	0.689
	PBC 2	0.903				
	PBC 3	0.724				
SN	SN 1	0.853	0.788	0.801	0.875	0.701
	SN 2	0.93				
	SN 3	0.724				

The factor loadings for all structures above the criterion of 0.7 suggest that the indicators suit their respective constructs. The loading values for EC 3 (0.975) and SN 2 (0.93) exhibit a notable degree of elevation, indicating a robust association between these markers and their corresponding constructs. All structures have a Cronbach's alpha beyond the threshold of 0.7, a commonly accepted standard indicating good and strong internal consistency. The IPSA has the highest degree of internal consistency, as shown by a Cronbach's alpha value of 0.903. The values of all constructs beyond the threshold of 0.7 indicate a robust convergent validity. The composite's dependability is likely to be high, since all structures meet the commonly accepted threshold of 0.7, suggesting that the composite is trustworthy. The AVE is a statistical metric used in academic research to evaluate the extent to which a concept captures the variation of its indicators. AVE for all constructs above the threshold of 0.5, which offers empirical proof of the measurement model's convergent validity. The construct referred to as IPSA has the greatest AVE value, namely 0.776. This discovery implies that IPSA effectively captures the most substantial variance across its indicators in comparison to other constructs.

Table 3 shows the value of variables through HTMT ratio to establish discriminant validity Henseler et al. (2015) recommend a threshold value of 0.90 for the Heterotrait-Monotrait Ratio of Correlations (HTMT) if the path model involves closely related constructs. A HTMT value exceeding 0.90 indicates a lack of discriminant validity. When the elements in the route model are conceptually more diverse, researchers should use 0.85 as the threshold for HTMT (Henseler et al. 2015). Since the constructs used in the study are closely related such as attitude, subjective norms, perceived behaviour control and environmental consciousness the threshold value to be considered in this regard would be 0.90, all values in the table lie within the threshold value. As the values suggest that each construct has its own existence in the proposed theoretical framework, the discriminant validity proves that each observed latent variable is distinct and has individual existence.

Table 3: Discriminant Validity using Heterotrait-Monotrait Ratio (HTMT -Ratio)

	ATSA	BPSA	EC	IPSA	PBC	SN	EC x IPSA
ATSA							
BPSA	0.888						
EC	0.587	0.501					
IPSA	0.695	0.750	0.564				
PBC	0.810	0.651	0.553	0.885			
SN	0.700	0.645	0.764	0.821	0.774		
EC x IPSA	0179	0.152	0.277	0.507	0.575	0.443	

Since a self-administered survey gathered this study's data, this process identified potential data issues caused by biases in widely used methodologies. To be more explicit, we performed an exploratory component analysis on the whole dataset using partial least squares (PLS), and we decided that a factor loading of at least 50% was considered significant. The data analysis showed no important indications of bias due to standard method variance in the dataset. Based on the results, this conclusion was made. Since the first component accounted for just 27.46% of the difference between the items, it is evident that the common practice is not a significant source of bias. The findings indicate that the average technique bias did not significantly influence the data acquired from the self-administered survey.

Table 4: Path Coefficient

	O S	S M	S D	T statistics
ATSA > IPSA	0.099	0.110	0.096	1.038
EC > BPSA	0.139	0.162	0.084	1.654
IPSA > BPSA	0.704	0.696	0.085	8.288
PBC > IPSA	0.458	0.452	0.091	5.047
SN > IPSA	0.359	0.355	0.086	4.174
EC X IPSA >	-	-	0.086	1.938
BPSA	0.167	0.163		

R^2 is a measurement that shows how much a change in the dependent variable can explain a change in the independent variable. On the other hand, the correlation coefficient is a scientific way to measure how closely two factors are related. The results show that an R^2 number of 0.01 or more is best.

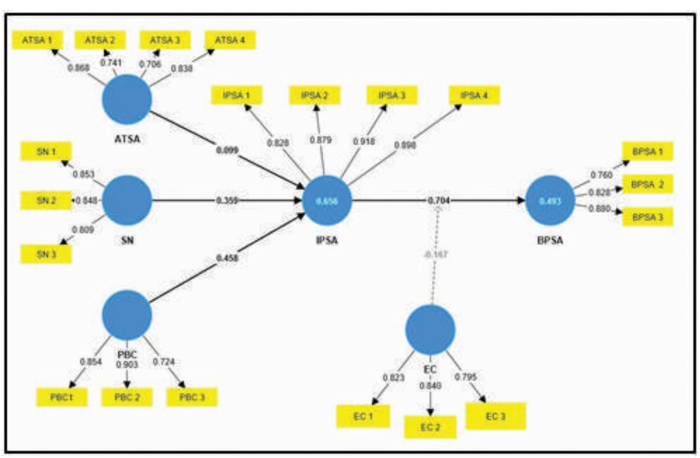
Table 5: R square

	R^2	R^2 ADJUSTED
BPSA	0.593	0.578
IPSA	0.656	0.646

The adjusted R2 is calculated to provide a more accurate evaluation of the goodness of fit for a regression model, especially when comparing models with different numbers of explanatory variables. The modified R-squared takes into consideration the number of variables in the model, unlike the conventional R-squared which might artificially increase when further variables are included, regardless of their significance. By specifically focusing on the elimination of irrelevant predictors, it guarantees a more accurate evaluation of the model's ability to account for the changes in the dependent variable across different models with different numbers of predictors. R^2 adjusted is very valuable for model selection as it aids in determining the model that optimally balances fit and complexity.

Examining the structural model, which may include a moderating variable, follows the evaluation of the measurement model in PLS-SEM analysis, such as environmental consciousness shown in Figure 2.

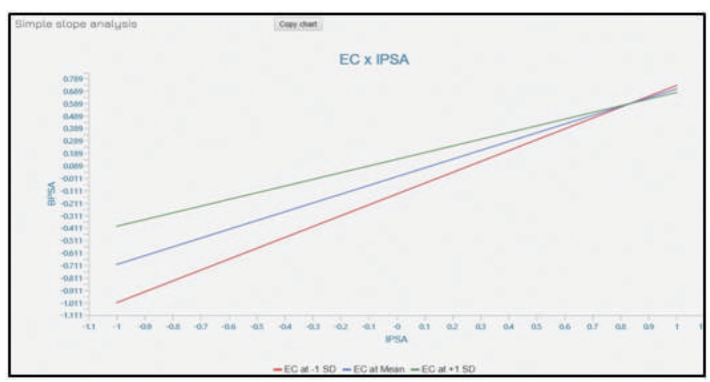
FIGURE 2: Structural Model Research



A positive effect of 0.086 on an overall impact of 0.096 is shown between environmental awareness and the desire to buy sustainably produced apparel in the adjacent scatter plot. This correlation was found to exist between the two variables. Several research studies, including one recently published in the Journal of Consumer Psychology, have investigated the impact of environmental awareness as a moderator (Podsakoff et al., 2003). A simple cross-slope analysis, which can be shown in Figure 3, also demonstrates the results of the moderator investigation. The association between ecological awareness, the Intention to buy environmentally friendly apparel (indicated by the x-axis), and actual purchases of environmentally friendly items (represented by the y-axis) is shown graphically by three lines (y-axis).

Moreover, the environmental consciousness is higher than the mean value plus one standard deviation unit, indicating that it is significantly higher. The positive slope of all three lines on the graph indicates a positive association between environmental knowledge and the Intention to purchase sustainable apparel. According to these findings, firms and marketers that sell eco-friendly clothes should consider the moderating effect of concern for the environment in their marketing strategies. Companies can increase the efficiency of their marketing efforts by understanding more about their target audience's level of environmental consciousness. Also, The data could enhance the positive correlation between environmental concerns and the Intention to buy sustainable apparel.

FIGURE 3: Graphical Representation of Moderating Effect



IV. Conclusion

This study aimed to ascertain whether environmental consciousness has a role in the purchasing decisions of Indian consumers. Results showed that consumer environmental consciousness significantly affects their views and purchasing sustainable apparels. The findings also show that

Indian consumers prioritize sustainable fabrics while buying apparels. However, it was discovered that environmental consciousness significantly attenuated the association between attitudes and intentions to purchase. Specifically, participants with a higher level of environmental knowledge exhibited a stronger positive correlation between their purchase intentions and behaviour. These results are significant for Indian marketers and politicians who seek to promote environmentally sustainable apparel. Marketers must emphasize educating customers about the harmful effects of fast fashion on the environment and the many advantages of choosing sustainable apparel. They could also address the social responsibility of environmentally friendly clothing since this may appeal to customers concerned about environmental concerns. Governments must study the possibility of providing financial incentives to enterprises that make sustainable clothing and encouraging consumer education campaigns on the advantages of sustainable fashion. Manufacturers may be motivated to embrace more environmentally friendly procedures and materials in their manufacturing processes to satisfy the increasing customer need for sustainable goods. Consequently, this may promote the development of inventive, sustainable textiles and environmentally conscious manufacturing methods. Policymakers may use knowledge of the correlation between environmental awareness and consumer intent to inform the creation of policies and incentives that encourage sustainability within the apparel business.

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ASSESSING THE IMPACT OF LEADERSHIP EFFECTIVENESS AND SOCIALLY RESPONSIBLE BEHAVIOR ON BUSINESS PERFORMANCE, BEHAVIOR AT WORKPLACE, AND ORGANIZATION IMAGE

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Purpose: *To understand the relevance of leadership effectiveness, socially responsible behavior as essentialtools for organization to succeed in different dimensions, the study aims to establish relationship between four important variables viz, leadership effectiveness, socially responsible behavior of employees and how does it affect business performance, behavior at workplace and image of organization.*

Design : *The research comprises of exploratory research based on LISREL, SPSS and Process Macro analysis was conducted as mediation analysis also is conducted to establish relationship between the constructs. The relationship was further strengthened based on Confirmatory and exploratory methods.*

Findings: *The findings reflected association between Leadership effectiveness and socially responsible behavior which was found to be largely dependent on how leadership is taking care of this which also affects organization image, business performance and employee behavior at workplace.*

Originality: *The present study adds value to the approach of leadership effectiveness which largely are measured with direct organizational aspects not largely when aligned with socially responsible behavior and its impact on both performance and image of organization.*

Keywords : *Leadership effectiveness, socially responsible behavior, Business Performance, organization image*

JEL Classification Code: M1

I. Introduction

The performance of the organization is based on the influence and effectiveness of the leader (Drucker 1964). Leadership has been understood as an influence that an individual exerts keeping long-term vision, stakeholders' interest, and outside business uncertainties into consideration. Leadership is a determinant in raising the organization's financial performance (Steyrer and Mende, 1994; Howell and Avolio, 1993; Koene et.al., 2002). Leadership is a process of influencing a group towards the achievement of goals. Effective leadership helps to ensure integrated management competency development, fairness, and respect for individuals, reducing unethical practices and contributing to building a positive corporate image and reputation along with financial performance (Boyatzis, 1991; Voegtlin et.al, 2012). Leadership effectiveness and the image of an organization affect business performance(Inglis, Morley & Sammut 2006). Business strategies, motivation, and corporate reputation play a vital role in building and enhancing the financial performance of the firm. The behavior of the employees is primarily determined by the appropriateness of the leadership and alignment of organizational goals with personal goals (Shahzad , Iqbal , Jan and Zahid M, 2022).

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The financial and non-financial performance of people is based on the initiative of the leader. It is important to keep a balance between how a leader enacts, and how socially responsible behavior is sustained which affects the outcome of both business and employees and helps an organization to brand benefit. The main objective of the study was to analyze the role of leadership effectiveness and socially responsible behaviour on workplace behavior, employee performance, and organizational image.

II. Review of Literature

Leadership Effectiveness

An effective leader plays a vital role in the organization's performance (Sirisetti, 2011). Effective leadership enables the building of a progressive environment through motivation and clear vision and guides the whole efforts of the employee to high-level performance (Sirisetti, 2011).As per the Social identity theory, it has been found that leadership effectiveness is based on whether employees feel it is responsible leadership or not which enhances social and citizenship behavior among employees. Since the start of the new millennium, the effectiveness of leadership has been connected with social systems (Valcea, Hamdani, Buckley, & Novicevic, 2011)

The role of the leader cannot be undermined in any organization because it deeply influences the organizational performance. Besides this, leadership is viewed by some researchers as one of the key driving forces for increasing organizational performance (Bennis & Nanus, 1985). A combination of strategic acumen, environmental awareness, and subordinates' trustworthiness are necessary for effective leadership (Byrne et al., 2014). An organization's reputation and goodwill are enhanced by a competent leader. An effective leader determines the right directions, builds organizational vision, and develops strategies in order to achieve long-term organizational goals and objectives. This shows that the role of effective leadership is crucial in organizations. Therefore, Drucker (1964) considers leadership as a key to success for organizations. Leaders strategically use energy to inspire and motivate a team towards achieving a common task. Similarly, effective leadership is believed to be a basic requirement for facilitating and improving organizational performance. It enables organizations to face challenges (Yukl, 1999).

Socially Responsible Behavior

Socially responsible behavior is defined as an action and decision of an individual and organization that results in social well-being. SRB is a framework where people and organizations are held responsible for carrying out their civic duties and making contributions to society. SRB is not only based on a moral view but has the power to decide in any uncertain situation. Concerning human skills, scientific knowledge, and technical skills become insufficient (Tsouka sand Cumming, 1977), but SRB relates to the practical wisdom of life (Schneider, 2005). Responsible behavior is made of different elements like honesty, compassion, level of respect, fairness, accountability, and courage. SRB is also dependent on how effective leadership is expected to bring better financial results and firms better market strategy (Kim, Chang&Kim 2023).

Business Performance

The concept of performance describes how individuals or groups conclude to attain an aim. Organization's success is directly proportionate to its employees' performance. Business performance is a description of the level of the fulfilled task of the business's aim according to obtained output at the end of a business period (Yıldız, 2010). Ithas become evident that while profitability, sales, and market share are the most used criteria in the subjective method, ROA and ROE are the most used ones in the objective method (Yıldız and Karakaş, 2012: 1095). Studies on leadership and business performance claim that leadership is the most important variable affectingan organization's employees' performance and so, business performance. It is found that leadership style has a positive effect on wage earners' performance and so, organizational performance (Avolio and Bass, 1995: 199-218). A study conducted by (Yidiz , Basturk, and Boz 2014)suggests that it is important to keep employees motivated for effective business performance, both transactional and transformational leadership are important to ensure effective organizational outcomes (Khuong, Tung, & Quoc, 2022).

Behavior at workplace

Behavioral preferences of leadership style and ensuring that individuals are a part of effective leadership is largely dependent on the factor that a combination of behavioral and leadership assessment is important for building organization's image. It is vital to see these two factors the leadership assessment and organization outcome are mutually related (Culp, G. 2005).The success of an organization is dependent on how well the engaged workforce is articulated to organization performance, this decides the employee's behavior and also helps in ensuring business outcomes, innovative work behavior is found in studies to be related to leadership behavior which in results helps in affecting employee's behavior and task performance (Gemeda HK, Lee J. 2020).

Organization Image

Organization image is understood as a common impression which majorly people hold about an organization. The image can be both financial non-financial, economic, social, and philanthropic perspectives. Organizational image is found to be an impression also of the stakeholders like internal, suppliers, clients, financial market, and overall organization behavior and image. (Pires, and Trez, 2018). Human resource activities are found to affect leadership effectiveness largely and organization behavior, for an organization to ensure a strengthened brand image it is important to have a multi-facetted perspective of numerous aspects.

H1: Leadership Effectiveness has a positive impact on socially responsible behavior.

H2: Socially responsible behavior has a positive impact on business performance.

H3: Leadership effectiveness has a positive impact on business performance.

H4: Socially responsible behavior acts as a mediator between leadership effectiveness and business performance.

H5: Leadership effectiveness has a positive impact on behavior at workplace.

H6: Socially responsible behavior has an impact on Business performance.

H7: Socially responsible behavior is moderating relationship between leadership effectiveness and business performance.

H8: Leadership effectiveness has a positive impact on an organization's image.

H9: Socially responsible behavior has a positive effect on organization's image.

H10: Socially responsible behavior moderates the relationship between leadership effectiveness and organization image.

III. Research Design and Methods

A quantitative research design with randomly selected automobile manufacturing and auto component manufacturing organization unit to study the diversity of work and different nature of departments within the organization was taken for the research. To pre-test the questionnaire was circulated amongst 55 managers working in 16 different industrial units to ensure the reliability of the questionnaire. Further, the questionnaire was circulated amongst 453 respondents out of which the fully completed questionnaire received were 422, forming the final primary data. Based on 5 dimensions ranging from strongly agree to strongly disagree scale was developed including all four constructs; leadership effectiveness, socially responsible behavior, business performance, behavior at the workplace, and organization image.

Firstly the relationship between Leadership effectiveness and socially responsible behavior was tested followed by the relationship between socially responsible behavior and the three constructs namely- Organization performance, behavior at the workplace, and organization image.

To ensure the data does not confront the problem of common method variance, the formats and anonymity of scales were maintained. Factor analysis was run to identify the variables followed by establishing control through Confirmatory factor analysis, also regression to establish the relationship between dependent and independent was applied, further for mediation analysis Process Macro as developed by Heyes was deployed.

Instruments for Measurement

Leadership effectiveness was measured by the Campbell Leadership Index instrument, Business performance was measured using dimensions drawn from Reiss (1992), Neely et al. (1995) and organizational image was measured using Frandsen(2012), Socially responsible behaviour was measured using Crilly et al. (2008). Behaviour at the workplace was measured using Work Behaviour Inventory (WBI; Bryson et al., 1997)

Analysis

Amongst the collected data of 422 employees, the demographic description of the data 281 were males 141 were females, 110 were graduates 289 were postgraduates 23 had higher degrees. Out of the respondents, 56 were from - the finance department, 93 were from the marketing department, 89 respondents were from the operations department, 75 were from the quality control department, 82 respondents were from the production department and 26 respondents were from the administration dept.

Factor analysis was performed to ensure the scale validity and ensure that unrelated but meaningful dimensions are identified by findings inter-variable relationship. KMO and Bartlett tests of sphericity were also run to establish sample suitability tests and anti-image correlation matrix. The KMO value obtained(Table 1) is .932 at a significance level of .05(for p<.05) thus confirming that the data is suitable for study.

Table 1 KMO and Bartlett Test

KMO Measure of sampling adequacy		**.932**
Bartlett's test of sphericity	**Approximate chi - square**	**6,544.435**
Df	**376**	
Significance		**.000**

After running the Factor analysis 13 unrelated items from a scale of a total 43 questions were dropped for further analysis. CFA is used to determine hidden factors or dimensions in the case of multivariable which contain several measured variables. Several fit values are used including Goodness of Fit(GFI)Comparative fit index(CFI),normed Fit Index(NFI), and Root mean squared error of approximation value(RMSEA).The suggested test value after running CFA is provided in **Table 2.**

Thus, based on the values falling within the suggested range it was clear that there is high validity of the factor structure. Also, the scales have suitable reliability as based on suggested values of scales which should be above .50 are considered sufficient all scales are within the range.

Table 2 Fit index and values obtained

Index	**RMSEA**	**NFI**	**NNFI**	**CFI**	**GFI**	**IFI**
Value(x)	0.008	0.92	0.93	0.97	0.89	0.92
Reference value	$0 \leq x < 0.10$	$x \geq 0.90$	$x \geq 0.90$	$0 \leq x \leq 1$	$0 < x < 1$	$x \geq 0.90$

RMSEA =Root Mean Square Error of Approximation, FI= Normed Fit Index , NNFI= Non-Normed Fit Index, FI=Comparative Fit Index , GFI = Goodness of Fit Index, IFI=Incremental Fit Index

Table 3 Cronbach Alpha Values, AVE and Descriptives

Factors	**Cronbach Alpha(α)**	**M**	**AVE**	**CR**
Leadership Effectiveness	.830	3.052	0.53	0.83
Socially Responsible Behavior	.879	3.170	0.49	0.76
OrganizationPerformance	.863	3.160	0.47	0.82
Behavior at workplace	.867	3.162	0.54	0.81
Organization image	.834	3.103	0.55	0.83

Table 4- Correlation analysis

Factors	**LE**				**SRB**		
Relationship between variables	**SRB**	**OP**	**EBWP**	**OI**	**OP**	**EBWP**	**OI**
Significance (two tailed)	0.512	0.411	0.525	0.421	0.582	0.59	0.543

Note: **LE**=Leadership effectiveness; **SRB**=Socially responsible behaviour; **EBWP** =Employee behaviour at workplace**; OI**=Organization Image; **OP**= Organization Performance

The above tables of fit index values highlight the suitability of the dataset and scales in establishing a relationship between the model, the Cronbach reliability values are within the acceptable range, and further to establish the convergent validity Average variance extracted is also provided which should be more than .50.It is also important to establish the content validity of the scale which is used to be done by Composite reliability, the value suggested for same should be more than .70.All the values of AVE should be more than .50 and less than the Composite reliability. From the tables it was found that all the AVE values are within range and all CR values are higher than AVE values.

Table 4 explains the descriptive analysis of the selected variables which is important to know the distribution of values around a centrally established point from each other. The table.

The correlation coefficient which determines the strength of the relationship between the variables is shown in Table 5, all coefficients obtained were significant. To establish the relationship between the different selected variables as suggested in the conceptual model and explained in the research, method regression analysis was run, firstly to establish a relationship between all the variables. The **F value** of all the factors was found to be statistically significant. Since F is used to determine the statistical significance of the regression equation in the table it was found to be statistically significant for all, it also indicates that the model provides a better fit.

The standardized beta value also in the table(**Table 5**) was found to demonstrate a strong effect of the independent variables over the dependent variables, since the standardized beta coefficient helps in determining the impact of leadership effectiveness and socially responsible behavior on workplace behaivor, organization performance and organization image. From the table all the variables were found to be strongly related to the values of standardized Beta as shown.

To establish the role of mediation socially responsible behavior was added as a mediator. The results are presented in **Table 6.** To establish the mediating effect process macro extension V3 as developed was Hayes was run and results are presented in **Table 7.** The test helps to determine the indirect effect of the relationship between X on Y. In this specific test there are no *p*-values. As a rule if there is zero values between Lower Limit confidence Interval and Upper limit confidence interval a significant value can be determined (Hayes,2009).

Table 5 Regression analysis results

Hypothesis	**IV**	**DV**		**Significance**	**R^2**	**F-value**	**Reject/Accept**
H1	LE	SRB	0.532***	0.000	0.273	156.078	Accept
H2	LE	BP	0.416***	0.000	0.162	79.541	Accept
H3	LE	EBWP	0.528***	0.000	0.267	152.32	Accept
H4	LE	OI	0.431***	0.000	0.176	87.435	Accept
H5	SRB	BP	0.601***	0.000	0.342	204.112	Accept
H6	SRB	EBWP	0.634***	0.000	0.435	313.198	Accept
H7	SRB	OI	0.521***	0.000	0.297	168.041	Accept

Note: **LE**=Leadership effectiveness; **SRB**=Socially responsible behaviour; **EBWP** =Employee behaviour at workplace**;** **OI=**Organization Image; **OP**= Organization Performance

Table 6 Mediation analysis

Independent Variables	**Dependent Variables**	**Standard β**	**Significance**	**Adjusted R^2**	***F-Value***
LE		.128***	0		
SRB	OP	0.436	0.005	0.378	119.231
LE		.232***	0.00		
SRB	EBWP	.476***	0.00	0.487	189.001
LE		.186***	0.00		
SRB	OI	0.412	0.00	0.318	87.354

****p*<.001

Note: **LE**=Leadership effectiveness; **SRB**=Socially responsible behaviour; **EBWP** =Employee behaviour at workplace**;** **OI=**Organization Image; **OP**= Organization Performance

Table 7 Hayes Test Results

Hypothesis	Mediator	X&Y	Effects	BootSE	BOOTLLCI	BootULCI	Result
H7	SRB	LE&OP	0.2523	0.0428	0.1723	0.323	Accept
H8	SRB	LE&EBWP	0.2502	0.0414	0.1736	0.3256	Accept
H9	SRB	LE&OI	0.2453	0.0423	0.1643	0.3211	Accept

Note: **LE**=Leadership effectiveness; **SRB**=Socially responsible behaviour; **EBWP** =Employee behaviour at workplace**;** **OI=**Organization Image; **OP**= Organization Performance

The results of the same are presented in Table 8 wherein the accepted and rejected hypothesis are established. When the test was run for establishing relationship between which hypothesized if there is a significant mediating relationship between Leadership effectiveness and business performance through socially responsible behavior, it was found that there was no zero between the values and the value so obtained were Lower confidence interval and higher confidence interval were .1723 and .3230.

Further in the other hypothesis which aimed at determining if socially responsible behavior mediates relation between leadership effectiveness and behavior at the workplace, the Boot LLCI and Boot ULCI reflected that no zero values between them were also found thus establishing a significant mediating relationship (0.1736 and 0.3256).

IV. Data Analyis and Findings

Leadership is the determinant of the performance of an organization and is among the directing factors behind any organization's success(Tafvelin 2013). Employee behavior at the workplace is determined by how an employee experiences the organization which is further measured by job satisfaction and the organization's environment.

Leadership, corporate social responsibility (CSR), and organizational performance also are found to be affecting each other. The study acknowledges the increasing importance of CSR driven by consumer social concern, which influences attitudes and purchase decisions. The research examines how senior management's ethical leadership impacts operational, commercial, and economic performances, with CSR playing a mediating role. They help the business do good things for society and run smoothly.

The work outcomes are largely affected by leadership style and its experienced effectiveness. Work performance augments intrinsic positive behavior and work outcomes (Khan, Rehmat, Butt *et al.,2020*).The current study is in connection with the previous research shows that leadership is affect work engagement and innovative behavior, it thus helps followers to develop trust through proper participation. it helps in building confidence, high work commitment and thus better employee retention and a positive image.

V. Conclusion

From the above discussion, it can thus be concluded that leadership effectiveness plays a central role in determining organizational success especially when it comes to managing organizational out comes. Employee behavior at the workplace is affected by how leadership culture, working conditions, organizational environment, and trust, empathy with future direction affects organizational outcome. Leadership has been and will be open to changes with rising complexities, developments, and growth of talent along with changes in organization policies the role that leadership plays with internal factors to affect employee behavior is assured. The paper finds higher managerial implications as all the chosen factors are critical success factors for all organizations. It helped in establishing the fact that socially responsible behavior mediates the relationship between leadership effectiveness and organization performance and image largely.

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BROADCOM INC.'S ACQUISITION OF VMWARE: WHEN TECHNOLOGY MEETS TECHNOLOGY

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Abstract: *Broadcom Inc. is a global infrastructure technology leader built on 50 years of innovation, collaboration and engineering excellence. With roots based in the rich technical heritage of AT&T/Bell Labs, Lucent and Hewlett-Packard/Agilent, Broadcom focuses on technologies that connect our world. Through the combination of industry leaders Broadcom, LSI, Broadcom Corporation, Brocade, CA Technologies and Symantec, the company has the size, scope and engineering talent to lead the industry into the future. This acquisition is an acquisition of two large IT giants to enhance their business operations to touch the sky.*

I. Introduction

To learn about VMware, one first needs to know about virtualization. Virtualization is the creation of virtual rather than factual performances of operating systems, waiters, storehouse bias, network coffers, etc. However, you presumably know a thing or two about virtualization, if you've ever divided your hard drive into colorful partitions. A partition is a logical division of a hard drive, basically creating two separate hard drives. In other words, in computer wisdom, virtualization refers to creating a virtual interpretation of a device or resource, similar as a garçon, storehouse device, network, or indeed an operating system, in which a frame divides the resource into one or further prosecution surroundings. VMware is an American pall computing and virtualization technology company. Our headquarters are located in California. innovated on February 10, 1998, officially blazoned at a rally conference in 1999, first products packed in May 1999, and in 2001 he entered the garçon request with VMware GSXserver and VMware ESXserver. The company was the first to virtualize the x86 armature to marketable success. VMware allows you to run a hypervisor directly without taking a primary operating system. VMware products include virtualization, networking, and security operation tools. Software- defined data center software and storehouse software. VMware, also known as a pall operating system or virtualized data center platform, enables IT departments. operation workloads run on the most cost-effective computing coffers available. VMware provides operations for both desktops and waiters. VMware desktop software. VMware desktop software compatible with Linux, Microsoft Windows, and Mac OS. In addition to furnishing dependable data center virtualization results, SUSE and VMware work together to give pall results for private and public shadows. You can fluently move VMware from one physical machine to another if demanded. It can be fluently used in disaster recovery scripts for this purpose. Using VMware tools Improves videotape resolution and color depth. This helps you drag and attach lines between two operating systems. It also speeds up plates' performance. The VMware terrain allows software inventors to make and test products on a variety of operating systems. You can reliably identify bugs and crimes in your virtual terrain before transferring them to your factual physical computer. Another reason to use VMware is the capability to demonstrate the product. Our laptops have a virtual network so we can demonstrate operations to our guests. You can produce VMs to meet your unique requirements. Overall, VMware virtualization technology provides a flexible and effective way to run multiple operating systems and operations on a single physical garçon or computer, allowing for more effective use of tackle coffers. and simplify operation.

Broadcom's OBJECTIVES to acquire Vmware:

VMware's invention continues. It's a leading provider of multi-cloud services for all operations and a colonist of virtualization technology, an invention that has appreciatively converted x86 computing. The company also erected a software- defined data center and played a commanding part in network and storehouse virtualization

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before becoming a leader in cold-blooded pall and digital workspaces. VMware's multi-cloud immolation includes all operations, structure, networking, security and pervasive workspaces- the cohesive digital foundation on which utmost associations make, operate, manage, connect and cover their largest businesses.

Broadcom Software Group will transition to VMware, integrating Broadcom's structure and security software results into the broader VMware portfolio. By combining Broadcom Software's reciprocal portfolio with the leading VMware platform, the new company will give enterprise guests with an expanded critical structure platform with results that accelerate invention and match's most complex business requirements. Through the combined company's participating focus on technology invention and exploration and development spending, Broadcom will deliver compelling benefits to its guests and mates. President and CEO of Broadcom, said" erecting on our proven track record of successful combinations and accessions, this sale brings together our leading semiconductor and structure software companies with a software iconic, disruptive and innovative company like us. “Let's suppose again about what we can do.” It presents itself to guests as a leader in structure technologies. VMware has long been honored as a leader in the enterprise software request, and through this sale we will give our guests around the world with coming- generation structure software.

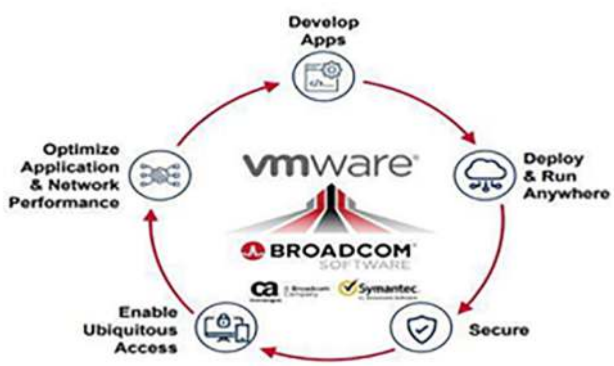

Fig 01: Broadcom, VMware Integration

This is a transformative moment for VMware, furnishing our shareholders and workers with the occasion to take part in significant benefits. This is the million- dollar question among VMware's customers these days. Broadcom's strategy is to concentrate on the top payers and offer them solid service to ride this train for as long as possible. This does mean that lower customers may be neglected a bit in the process. Now it's not sure about what this means in practice; is it cuts in the support channel in Favor of TAMs and Success 360? Is it simply related to the increase in the license prices? presumably both, anyhow, history does not play in the favor of small guests as CA technologies and Symantec customer saw prices increases along with a drop in client support quality and R&D after the products moved under the Broadcom umbrella since the company shifted the focus to these big guests as mentioned preliminarily. It's still way too early to make any rash decision as the deal will take time to close and the new strategy won't be executed incontinently. still, there are formerly a many affects you can start allowing about before Broadcom cracks down on VMware's inner workings Renew on conservation contracts before an implicit price hike.

II. Acquisition Story

On the 26th of May 2022, VMware blazoned that they entered and accepted an unasked accession offer by Broadcom for$ 61B. This is nearly$ 50 per share above the ending price the day ahead. The whole IT community, were taken by surprise by this advertisement as it was fully unanticipated. Broadcom being in a different playfield than VMware, numerous wondered what was the play there. Innovation Through Accessions From the mid-2000 up until the moment, VMware established itself as the leader in garçon virtualization. still, the focus has shifted relatively dramatically from garçon virtualization to operation. The operation being the core of the business, virtualization is now a commodity and waiters should be interchangeable in a matter of twinkles. This change drove VMware to address different areas of the SDDC so as to not lose the race of invention, an incredibly fast bone.

In the world of IT. Through company combinations, it has been VMware's strategy in the last many times with no lower than 22 company accessions since 2018, they indeed have a devoted runner with the rosters! This allowed the virtualization mammoth to expand its reach into the pall, security and ultramodern apps areas. This has actually been a fairly blamed strategy by numerous who claimed VMware demanded invention and simply took lanes by buying technologies. While there's some verity in that, it's and has always been how the IT geography works. Above that, some of the products developed by these companies get included in the VMware portfolio and benefit from the deals, marketing and direction power of a large company to drive it to the finish line. Why is Broadcom Buying VMware? According to Broadcom's sanctioned communication, the main moto behind this deal is to diversify the company's exertion down from the core business of dealing semiconductors.

Fig 02: Snapshot of Broadcom buying VMware

By acquiring VMware, Broadcom boosts its access to the SaaS and pall worlds through the personality entrance. Combined with former software company accessions, this will induce subscription- grounded, recreating profit which has a much more advanced profit periphery than tackle. On top of that, VMware has a large client base and solid assiduity following that can only profit Broadcom in the long run. According to Broadcom's communication, the plan would be to rebrand as VMware. Now whether it'll be the software division or the whole company is unclear. The significance of virtualisation and pall-native platforms Virtualisation companies like VMware produce seller- agnostic software that can operate on any garçon.

Vmware will profit from Broadcom's investment in perfecting the ease of moving workloads. Broadcom could play the part of a strong strategic mate, helping VMware to meet its multi-cloud challenges and intentions. The company has a track record of bringing disruptive technologies to request and helping enterprises better position those technologies to achieve their business issues.

Financial Details:

Semiconductor giant Broadcom has signed a deal to acquire cloud software company VMware for $61 billion in cash and stock. But analysts say Fierce Broadcom still has work to do to prove itself after the deal, both as a software provider and to enterprise customers who value predictability and consistency. He said there are many. Under the terms of the transaction, VMware shareholders have the option of receiving either $142.50 in cash or 0.2520 shares of Broadcom common stock for each VMware share. In addition to the cash and stock market, Broadcom agreed to assume $8 billion of his VMware debt as part of the deal. Notably, the agreement includes a "go-shop" clause that allows VMware to actively seek alternative offers during his 40-day period. Barring a new offer from VMware, the deal with Broadcom is expected to close during Broadcom's 2023 fiscal year, which is scheduled to begin in November of this year. Broadcom noted that the deal was already backed by Michael Dell and private equity firm Silver Lake Partners, which both own 50.2% of VMware. Dell owns 40.2% of the larger of his two stocks. In a call with investors, Broadcom CEO Hock Tan called the partnership "a unique opportunity to take our

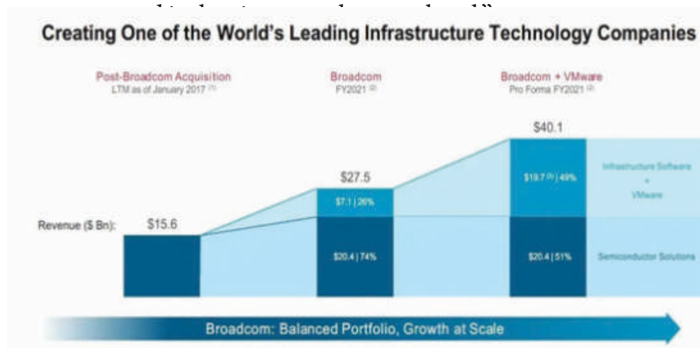

Fig 03: Creating world's leading infrastructure technology company

Versatility and Innovation:

Broadcom's decision to expand its semiconductor business into the software and cloud arena reflects a growing industry trend. Many technology giants are diversifying theirofferings to offer end-to-end solutions that include hardware, software and cloud services. This positions Broadcom to deliver end-to-end infrastructure solutions that drive innovation and meet the changing needs of businesses.

Impact on Customers: Existing VMware customers may understandably be concerned about potential changes in pricing, support and product direction. As with any major acquisition, it is important that customers communicate with their VMware representatives, understand the impact of their specific contracts, and plan accordingly. Renewing support contracts and assessing the health of software-defined data centers (SDDCs) are sensible steps.

Technology synergy: Thecombined expertise of Broadcom and VMware can create disruptive technology solutions.

VMware's strengths in virtualization, multi-cloud management and software-defined infrastructure is a good match for Broadcom's capabilities. This synergy can lead to the development of innovative integrated products that meet the complex challenges of modern IT environments.

Market Dynamics: Acquisition highlights the competitive nature of thetechnology industry, where companies are constantly looking for opportunities to grow and expand their market. VMware's purchase of Broadcom reflects a broader trend of mergers and acquisitions aimed at strengthening market positions, improving product portfolios and diversifying revenue streams.

Long-term vision: While the immediate effects of the acquisition may raise questions and uncertainty; it is important to consider the long-termvision of both companies. Broadcom's investment in VMware demonstrates a commitment to the success of the partnership, and we can expect strategic initiatives and product roadmaps to take shape over time. All in all, the acquisition of Broadcom and VMware is a pivotal moment in the technology industry. It highlights the transformative power ofstrategic acquisitions, the importance of adaptability in rapidly evolving markets, and the potential for innovative solutions from industry leaders working together. As this partnership evolves, it will undoubtedly shape the future of infrastructure technology and cloud computing, providing new opportunities and possibilities for businesses and IT professionals alike.

III. Conclusion

Broadcom Inc. is a testament to the power of innovation, excellence and strategic acquisitions in the technology world. Through many groundbreaking developments, Broadcom has solidified its position in the industry and continues to shape the future technology. Broadcom's strategic acquisitions, including LSI, Brocade, CA Technologies and Symantec, have allowed the company to expand its reach and capabilities, placing it at the forefront of the technology industry. Thanks to these acquisitions, Broadcom has been able to offer a wide range of solutions from networks and storage to information security and cloud services. On the other hand, the American cloud computing and virtualization technology company VMware has also played a key role in the technology world. VMware's virtualization technology has transformed the way businesses operate by providing flexibility, efficiency and scalability. Its products serve desktop, server and cloud environments, so it is a versatile solution for different computing needs. Broadcom's acquisition of VMware in 2022 marked a significant turning point in the trajectory of both companies. Broadcom's efforts to diversify its business beyond semiconductors and move into software and cloud services could change the industry. By combining Broadcom's expertise with VMware's industry-leading solutions, the new entity is poised to deliver innovative, mission-critical infrastructure platforms that meet the complex requirements of businesses worldwide.

However, it is important to note that these changes will take time to materialize, and both companies will likely work hard to ensure a smooth transition for their customers.

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https://youtu.be/OXGkDNcPJsQ

Jagannath International Management School

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This radio is being run by the students and is providing an opportunity to develop programmes for community broadcast. The radio station is used by the college as laboratory for training students specializing in radio broadcast and they work in close coordination with community representatives and leaders. At present the radio broadcasts daily for eight hours with original programme of four hours in morning which is repeated in the afternoon. The students are encouraged to explore the needs of the society, thereafter, they conceive, design and broadcast their own programmes in a real life environment.

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