

# Parikalpana

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## Imagineering Business



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# **Parikalpana**

**Imagineering Business**

**December-2022 Issue, Vol.18.2**

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# Parikalpana-KIIT Journal of Management

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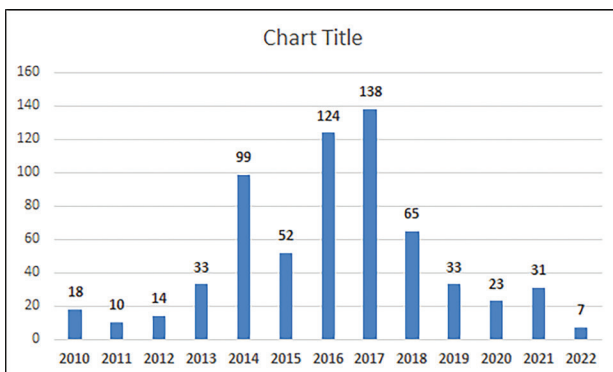
## Editorial:



We are so happy to record here about the successful completion of 18th volume of our research journal, which was started some 20 years back. Two decades' time is a big milestone for us, where we had some initial hiccups during its infancy. But we continued to publish consistently and continuously tried to improve quality and also our researcher contributors network, globally. Continuously, we have been trying to put it on globally reputed indices of research journals, like EBSCO, ProQuest, JGate, i-Scholar, Ulrich and Cabell's. We tried to make it transparent and well documented, making available all the back volumes. Our hard work and consistent efforts paid last year, when our journal was listed in UGC-CARE list. Gradually, number of submission of articles increased very significantly. From 20-25 articles per issue initially to over 100 articles per issue now, is a great satisfaction for us.

Of course there is pleasure as well as the pain of 'problem of plenty'! Scrutiny, review and editing of so many articles have of course become a major task for our editorial team, but at the same time, we are able to select the 'select few', purely based of double-blind review by the subject experts. We are very much grateful to all the reviewers, who have supported us, all along selflessly, without any expectation or remuneration. From this this onwards, we shall be publishing the name of those reviewers with our gratitude.

As we had mentioned earlier about consistent cite-score of our research journal (previous data shown as exhibit, here), we are happy to record here that total citations of the articles of our journal has crossed 650 mark, with average cite-score of over 2.45.



We wish sincere to improve still further and shall have greater research impact and shall make significant value addition to the research publication world. We have started the new tagline, from this issue: 'Parikalpana: Imagineering business.'

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## Factors Affecting Green Marketing: An Empirical Study

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### Abstract:

As green marketing has become an essential tool for business survival, so worldwide companies are adopting green marketing practices to achieve better business performance. Similarly, Indian consumer durables marketing firms are gradually adopting green marketing practices and ideologies. The inculcation of 'green marketing practices' in consumer durable goods foresee a long journey from product based certification to changes in features, supply chain, raw material choices, packaging based innovations and retail based advertising options. Hence, there are so many factors which affect green marketing. So, the current study is an attempt to shed light on the same issue. A questionnaire was framed based on review of literature and distributed among the manufacturers who have adopted green marketing practices in Punjab. Factor Analysis was applied on the collected information. 11 factors have been extracted and some suggestions were made with regard to the current study.

Keywords: Green, Marketing, Practices, Punjab, Companies

### 1. Introduction

Green marketing is a vulnerable issue which gained the attention of the consumers as well as the manufacturers few decades back. Earlier people were buying traditional goods with normal features which slowly and slowly created hazardous effects on the environment.

Many public and private organizations have shown concern about the danger of atmospheric deviation. This has driven organizations to reconsider their business concepts. As a result, associations had been propelling to adopt innovative concept which is recognized as "green commercialization" or

“green marketing”. It is connected with the purchasing of goods that are environmentally amicable and do not hurt the organic network and society. These things are produced in a manner that are friendly to the environment (Saini, 2013).

### **1.1 Green Marketing: Need of the Hour**

The pace of environment concern has escalated. The nineteenth century experienced that the big companies were just concerned with money making and were least interested about the environment. Massive production led to enormous pollution which posed a threat for human survival too. In addition, the corporate and business houses were seen not distinguish between positive or negative practices which led to the increase in pollutants, emissions of carbon gases, depletion of ozone layer etc which further raised the concerns for the environment.

In order to protect the environment, the business needs to consider contemptibility, social values and natural reasonability. There is also a need to distinguish between moral action and immoral activities.

Thus, in the past green marketing was viewed as a futuristic approach but now it has become the need of the hour in order to save the environment.

Besides this, the rising awareness among customers with regard to the environment and growing realization that ecological imbalance is a threat to human survival is identified as a critical change (Nguyen et al., 2019). The increased awareness with regard

to health issues, intent to give back to nature, sense of altruism, rising knowledge about action and reaction notions and the belief in doing good for the environment is shaping the impetus about the manner in which durable goods are being marketed and would be marketed in coming times.

### **1.2 Durable Goods based Green Marketing Practices in India**

Indian consumer durables marketing firms are adopting green marketing practices and ideologies . The inculcation of ‘green marketing practices’ in consumer durable goods foresee a long journey from product based certification to changes in features, supply chain, raw material choices, packaging based innovation (Dubihlela and Ngxukumeshe, 2016) and retail based advertising options (Hasan and Ali, 2015).

A plethora of studies emphasized on changes in marketing approaches in wake of rising customer’s environmental awareness. Marketing myopia seems to operate when it comes to durable goods marketing as more of the changes in practices are mere symbolic and less real in nature. This state of affairs denotes the momentum of practices whereby the firms are projecting as if they are adopting green marketing practices (Thakur and AlSaleh, 2018) but are merely changing the marketing communication. In fact, a lot of confusion seems to prevail with regard to definition of ‘green’ in marketing (Mathur et al., 2018).

Most of the studies pointed out the

window dressing approach towards inclusion of green marketing initiatives in Indian scenario . With regard to interpretation of green in marketing, some corporate practices emphasize the recycling perspective, some focus on generation of lesser pollution, some insist on recyclability, others underline the importance of increase in eco-friendliness, environment friendly packaging, lesser carbon footprint, green certification and eco-labeling. In the similar manner, some corporate practices call for no testing on animals, inclusion of non-lead material and mercury components. But green marketing does not focus on one aspect; rather it is a broad concept. According to Michael Polonsky (1994) “green marketing is related not only to the marketing of green products but actually it is much wider concept, i.e. it is not only related to the marketing of green or environment friendly products, but it incorporates a broad range of activities ranging from product modification, changes in the production process, changes in packaging, as well as modifying advertising of the products or removing any activity that impacts the natural environment in negative manner.

Despite the rising environmental awareness across Indian consumer base, the durable goods marketers have been slow in incorporating changes, innovations and grass roots driven transformation adhering to green marketing (Ginsberg and Bloom, 2004).

## **2. Review of Literature:**

Karna et al., (2003) studied the social

duty, values and ecological concern in the advertising plan of firms of 4 countries. Data was collected from 50 firms from these 4 countries with the help of personal interviews. Data was analyzed with the help of descriptive techniques. It was found that most of the Swedish, Finnish, German and United Kingdom firms underscored in terms of ecological concern while promoting their methodologies, qualities, capacity and structures. Jain and Kaur (2004) examined the level of environmental awareness among Indian consumers. Data was collected from primary sources by framing a questionnaire. Data was collected from 100 respondents. It was analyzed with the help of descriptive analysis. It was found that Indian consumers are highly concerned about environment and so they take part in green communication campaigns and have information about green products. Chen (2009) dissected the natural mentalities, wellbeing awareness and the intervening impacts of a sound way of life. Data was collected from 150 respondents in Ghana. Their opinion was gathered with the help personal interviews. The examination uncovered that natural concern and individual wellbeing are the two significant thought processes in buying natural nourishment. Maheshwari (2014) studied the beliefs of consumers with regard to environment protection. The study was carried out in Madhya Pradesh (India). It was found that consumers were not aware about green products and there is a need of marketing and brands promotion to sell environment friendly products. Pandurangarao et al., (2015)

observed that there is negative impact of manufacturing, storing, and marketing of product to the environment, by the companies and business houses. The data is collected from 200 respondents in Andhra Pradesh, which revealed that if the manufacturer of green product offer products which are eco-friendly i.e. makes no harm to environment at low rates with high quality as compare to conventional products, consumer definitely shift to green products and sale of green product increases. Tara et al. (2015) discussed the common methodology, biological viable and green promoting process. The researcher has coordinated hypothetical examination and discovered that tremendous amounts of associations are using green publicizing. One essential shortage is that associations' using green publicizing must make sure that their behavior are not misdirecting to the purchasers. It was furthermore found that, associations should unequivocally and totally describe the natural points of interest. Namagembe (2017) showcased that green showcasing is a convincing advertising system. It shows that the strategy for retailing the items and administrations dependent on their natural points of interest. This paper examined the significance of sun based vitality which is used in producing the green goods as an alternative of electricity. Slowly, customers are becoming aware of this fact and shifting towards buying of less hazardous goods. Trivedi and Sharma (2018) found that the green item quality and green customer fulfillment are seen as the principle factors for future green item buys. In addition,

shoppers are ecologically cognizant so advertisers should show natural concern in their advertising strategies. Further demographic variables were also examined with regard to green buying behavior and it was depicted that gender and age do not have any influence on buying pattern while other demographic variable have huge connection with green buying habits such as occupation and pay. Jeevandas et al., (2019) analyzed the effect of green showcasing on buying behaviour of the green items and to check afterward effects in Kerala. Information was gathered with the assistance of essential sources by surrounding a poll. The outcomes after examination of information unveiled there are countless potential clients for green items and along these lines their number can be expanded with expanded activities in green advertising exercises.

A large section of literature observed that the affordability, local availability, local servicing emerge as core concerns while zeroing in for green products. The availability of product at a retail store in the close neighborhood remains a critical issue while deciding for green products. Another research reflected on the differences in attributes that ideally make a product green. Still somehow the product attributes do shape the impetus for adoption and implementation of green marketing practices (Tseng and Hung, 2013).

Eventually, the concept of green marketing has taken a very important place in Indian market. The companies and manufacturers are showing great interest towards green marketing. Many

companies are showing themselves as green companies to fulfill government rules and regulations; however the implementation of green marketing is not easy task as it involves huge amount of investment in terms of technology, process alteration and spreading awareness among the consumers about green products. In India, a very little research has been conducted on factors affecting green marketing. Without any doubt, factors affecting green marketing need an extensive consideration across durable goods sector.

### 3. Research Methodology and Data

The current study is based on a primary survey. A questionnaire was framed to collect data which was based on review of literature. Before finalizing the questionnaire, it was tested for reliability and validity. Reliability was checked through Cronbach Alpha while to confirm the validity, suggestions from experts were taken specifically from marketing field. Some statements from the questionnaire were dropped on the basis of low reliability. Further some more statements were also plummeted after the advice of experts as they found some statements duplicate. However, some statements deliberately framed negatively in order to seek correct responses from the respondents. Before final survey, a pilot survey was

also conducted in order to ensure the predicted results. Data was collected from those persons who are purchasing green goods for at least 2 years. Total 500 questionnaires were distributed and respondents were approached on convenience cum judgmental basis. Out of 500 questionnaires, only 477 responses were found useable.

#### 3.1 Sample Characteristics

To the extent the demographic profile of the respondents is concerned, the sample included various types of respondents. It very well may be seen from Table 1 that more male respondents participated in survey (55.8%) than female (44.2%) respondents. Besides, test populace shaped the greater part (44.7%) in the age group of 30-40 years old followed by 40-50 years old (23.7%).

After it, the biggest category comprised of the individuals who are under 30 years old (22.9%). followed by those respondents who are falling in the age class of over 50 are simply 8.8%. As marital status of the respondents is concerned, it is obvious from Table 1 that practically 60.8% respondents are hitched and 38.4% are unmarried while 0.8% respondents are divorced person.

With regard to occupation of respondents is concerned, a major part of respondents have a place with administration class

Particulars		Frequency	Percent
<b>Gender</b>	Male	266	55.8
	Female	211	44.2

	Total	477	100.0
<b>Age (Yrs)</b>	Less than 30	109	22.9
	30-40	213	44.7
	40-50	113	23.7
	Above 50	42	8.8
	Total	477	100.0
<b>Marital Status</b>	Married	290	60.8
	Single	183	38.4
	Divorcee	4	0.8
	Total	477	100.0
<b>Education Level</b>	Matriculation	159	33.33
	Graduation	245	51.4
	Post Graduation	66	13.8
	Any other	7	1.5
	Total	477	100.0
<b>Occupation</b>	Student	99	20.8
	Businessman	149	31.2
	Service	150	31.4
	Retired	41	8.6
	Housewife	27	5.7
	Others	11	2.3
	Total	477	100.0
<b>Monthly Income (Rs.)</b>	Less than 20000	73	15.3
	20000-40000	264	55.3
	40000-60000	110	23.1
	More than Rs 60000	30	6.3
	Total	477	100.0

**Source: Compiled through Survey**

(31.4%), trailed by finance managers (31.2%), understudies (20.8%), resigned (8.6%) and housewives (5.7%) and

other (2.3%). As far as education level is concerned then Table 2 portrays that 51.4% of the respondents are graduates

trailed by matriculate (33.33%). The following biggest class included those respondents who are post graduate (13.8%). According to income level, Table 2 shows that 55.3% respondents are falling in the pay classification of Rs.20000-40000 followed by 23.1% who has a place with pay classification of Rs. 40000-60000. However 15.3% are falling in the pay category of not as much as Rs. 20000 yet 6.3% are falling in the pay class of above Rs.60000 pay bunch.

#### 4. Interpretation of Factors affecting Green Marketing Practices

The factors affecting 'green marketing' were quantified with aid of Likert scale. The data as collected was examined for reliability (internal consistency) and dimensional validity as mentioned in earlier sections. The research study incorporated the standard research tool of 'Cronbach alpha' in SPSS for reliability assessment to ascertain the "internal reliability and respective consistency" of the primary data. The assessment of internal reliability or consistency is essential to ascertain the

homogeneity of the responses being collected from the Likert based closed ended questionnaire.

#### 4.1 Factor Extraction

The factor analysis is to be applied on the responses received from the Likert based closed ended questionnaire and only on the responses that are valid and complete in nature. The research leverages the extractive factor analysis methodology to ascertain the respective dimensions. This was accomplished through series of tests namely the theme wide consideration of factors, usage of principal component analysis in SPSS, KMO-Bartlett's test for ascertainment of factorability, communality test for ascertaining the extent of variance that a particular variable or factor has in common with the construct and finally the conduct of extractive factor analysis with focus on dimension segregation. The sections below concentrate on the steps before final realization of pattern matrices across responses.

The responses were first examined for satisfactory presence of the data

**Table 2: KMO and Bartlett's Test**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.868	
Bartlett's Test of Sphericity	Approx. Chi-Square	12156.868
	df	1128
	Sig.	.000

factorability with aid of Kaiser Meyer-Olkin Measure of Sampling Adequacy. The KMO measure was observed to

be 0.903 which is in the satisfactory range of 0.7 to 0.99. This is tantamount to say that data collected with regard

to factors comprising construct operationalization; is factorable. The Bartlett test of data sphericity revealed a p-value of 0.000(<0.05) which stands for satisfactory presence of statistically significant variance cross the data collected with regard to scale. The significant “p-value” in other words points towards the significant utility of the data and suitability of the data

for consideration with regard to factor analysis. The communalities assessment reveals the extent of variance that is exhibited by each sub scale item. The retained sub scale items with regard to each factor essentially have value in range of 0.5 to 0.99 or simply greater than 0.5.

The factor extraction formed the next crucial stage. This is essential to ascertain

**Table 3: Communalities Assessment**

Sub Scale Dimensions	Item	Initial	Extraction
Supporting environmental protection makes me feel as an environmentally responsible person	EC1	1.000	.708
I should be responsible for protecting our environment	EC2	1.000	.789
Environment protection starts with me	EC3	1.000	.732
I would say I am emotionally involved in environmental protection issues	EC4	1.000	.738
Supporting environmental protection makes me feel special	EC5	1.000	.724
I am very knowledgeable about environmental issues	EK1	1.000	.756
I know more about recycling than the average person	EK2	1.000	.709
I know how to select products and packages that reduce the amount of waste	EK4	1.000	.754
I very well understand the environmental phrases and symbols on product package	EK5	1.000	.718
Health needs to be addressed vis –a-vis the usage of daily required consumer durables	HE1	1.000	.737
Emissions and extent of lead usage in product could prove injurious to health	HE2	1.000	.750
I consider health functionality of green products	HE3	1.000	.727
I regard health friendly products as obvious companions	HE4	1.000	.722
I think the legislations are addressing the gravity of environment problem	LEG1	1.000	.835
I think government is legislating well to encourage usage of environment friendly products	LEG2	1.000	.847
I regard on going rules and regulations as vital to save pollution	LEG4	1.000	.812



The product needs to be available at a retail store in my neighborhood	AV1	1.000	.718
The local service center is essential in times of repair	AV2	1.000	.724
The availability of spare parts in local shops is essential	AV3	1.000	.675
The access to experts in local areas for tear and wear management	AV4	1.000	.603
The maintenance of such products should be manageable with local resources	AV6	1.000	.639
Eco labeling and environment friendly products would be dearer than normal products	AF1	1.000	.804
There is no harm in initially paying more for being environment friendly	AF2	1.000	.787
There is no loss in seeking a product that is eco-friendly and recyclable	AF3	1.000	.739
It is wise to choose a product that is re sellable and environment friendly	AF4	1.000	.723
It makes sense to buy eco-friendly goods as they complement my life style	AF6	1.000	.760
When I shop, I like to try most unusual product even if I am not sure I would like them	VA1	1.000	.674
While shopping for consumer durables, I like to try new ideas	VA3	1.000	.702
I think it is good to try out new brands one is not familiar with	VA4	1.000	.641
I like to experiment with new consumer durable brands	VA5	1.000	.739
Green marketing practices are workable and environment friendly	GMP1	1.000	.605
Green marketing mix offers me multiple choices to express my care for nascent environment	GMP2	1.000	.688
Green marketing ensures my little participation in environment conservation	GMP3	1.000	.684
Green marketing is workable as this ensures customer's role in environment preservations	GMP4	1.000	.639
Green marketing ensures supply chain level embedment of environment consciousness	GMP6	1.000	.617
I experience changes in my buying behavior	BB1	1.000	.709
I can feel the change in my decisions about going in for eco-friendly product options	BB2	1.000	.700

I feel delighted to have my say in saving environment	BB5	1.000	.667
I can experience the change in my buying based sense making	BB8	1.000	.706
Environment protection is responsibility of government and citizens alike	GS1	1.000	.773
Government support is evident in form of subsidies	GS3	1.000	.738
Government based tax incentives are accessible	GS4	1.000	.716
Government is encouraging exemption on purchase of such products	GS6	1.000	.658
I learn so much about environmental products from my friends	RG1	1.000	.676
I learn so much about environmental issues and challenges from my friends	RG2	1.000	.707
I often buy environmental products with my peer circle	RG3	1.000	.758
I often share information regarding environmental product with my friends	RG4	1.000	.721
I regard it as vital to be in line with changing life style	RG5	1.000	.719

the factor weightage that each factor occupies across scale composition. This enables the research in comprehending the variance that is exhibited by each scale constituent. As observed, the factor “affordability” exhibited maximum

variance amounting to nearly 18.4 per cent which was followed by the factor “environmental concern” exhibiting 8 per cent variance. This was followed by the factor “reference group” and “availability”.

**Table:4 Total Variance Explained**

Total Variance Explained									
Component	Initial Eigenvalues			Extraction sum of Squared Loadings			Rotation sum of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1=Affordability	8.875	<b>18.490</b>	18.490	8.875	18.490	18.490	3.839	7.997	7.997
2=Environment Concern	4.240	<b>8.834</b>	27.324	4.240	8.834	27.324	3.694	7.695	15.693
3=Reference Group	3.804	<b>7.925</b>	35.248	3.804	7.925	35.248	3.614	7.529	23.222
4=Availability	3.013	<b>6.277</b>	41.525	3.013	6.277	41.525	3.319	6.916	30.137
5=Green marketing	2.814	<b>5.862</b>	47.387	2.814	5.862	47.387	3.246	6.763	36.900

6=Environ Knowledge	2.473	<b>5.152</b>	52.540	2.473	5.152	52.540	2.918	6.079	42.979
7=Health	2.302	<b>4.797</b>	57.336	2.302	4.797	57.336	2.918	6.079	49.058
8=Government	2.061	<b>4.294</b>	61.631	2.061	4.294	61.631	2.909	6.060	55.118
9=Buying Behavior	1.873	<b>3.903</b>	65.534	1.873	3.903	65.534	2.774	5.779	60.897
10=Variety seeking	1.678	<b>3.496</b>	69.030	1.678	3.496	69.030	2.770	5.771	66.667
11=Legislation	1.332	<b>2.774</b>	71.804	1.332	2.774	71.804	2.466	5.137	71.804
Extraction Method: Principal Component Analysis.									

### Factor One: Affordability

The factor exhibited maximum weightage of 18 percent and was represented by loading statements 'Eco labeling and environment friendly products would be dearer than normal product', 'There is no harm in initially paying more for being environment friendly', 'There is no loss in seeking a product that is eco-friendly and recyclable', 'It is wise to choose a product that is re sellable and environment friendly' and 'It makes sense to buy eco-friendly goods as they complement my life style'.

### Factor Two: Environmental Concern

The second factor "Environmental Concern" exhibited a variance amounting to nearly 8 per cent illustrating maximum weightage being assigned. The loading sub scale dimensions in regional perspective were classified as 'Supporting environmental protection makes me feel as an environmentally responsible person', 'I should be responsible for protecting our environment', 'Environment protection starts with me', 'I would say I am emotionally involved in environmental protection issues' and

'Supporting environmental protection makes me feel special'.

### Factor Three: Reference group

The factor exhibited maximum weightage of 7.9 percent and was represented by loading statements 'I learn so much about environmental products from my friends', 'I learn so much about environmental issues and challenges from my friends', 'I often buy environmental products with my peer circle', 'I often share information regarding environmental product with my friends' and 'I regard it as vital to be in line with changing life style'

### Factor Four: Availability

The factor exhibited maximum weightage of 6.2 percent and was represented by loading statements are: 'The product needs to be available at a retail store in my neighborhood', 'The local service center is essential in times of repair', 'The availability of spare parts in local shops is essential', 'The access to experts in local areas for tear and wear management' and 'The maintenance of such products should be manageable with local resources'.

**Factor Five: Green Marketing**

The factor exhibited maximum weightage of 5.8 percent and was represented by loading statements: 'Green marketing practices are workable and environment friendly', 'Green marketing mix offers me multiple choices to express my care for nascent environment', 'Green marketing ensures my little participation in environment conservation', 'Green marketing is workable as this ensures customer's role in environment preservations' and 'Green marketing ensures supply chain level embedment of environment consciousness'.

**Factor Six: Environmental Knowledge**

The factor exhibited maximum weightage of 5.1 percent and was represented by loading statements 'I am very knowledgeable about environmental issues', 'I know more about recycling than the average person', 'I know how to select products and packages that reduce the amount of waste', 'I very well understand the environmental phrases and symbols on product package'.

**Factor Seven: Health**

The factor exhibited maximum weightage of 4.7 percent and was represented by loading statements 'Health needs to be addressed vis-a-vis the usage of daily required consumer durables', 'Emissions and extent of lead usage in product could prove injurious to health', 'I consider health functionality of green products', 'I regard health friendly products as obvious companions'.

**Factor Eight: Government Support**

The factor exhibited maximum weightage of 4.2 percent and was represented by loading statements 'Environment protection is responsibility of government and citizens alike', 'Government support is evident in form of subsidies', 'Government based tax incentives are accessible', 'Government is encouraging exemption on purchase of such products'.

**Factor Nine: Buying Behavior**

The factor exhibited maximum weightage of 3.9 percent and was represented by loading statements 'I experience changes in my buying behavior', 'I can feel the change in my decisions about going in for eco-friendly product options', 'I feel delighted to have my say in saving environment', 'I can experience the change in my buying based sense making'.

**Factor Ten: Variety Seeking**

The factor exhibited maximum weightage of 3.4 percent and was represented by loading statements 'When I shop, I like to try most unusual product even if I am not sure I would like them', 'While shopping for consumer durables, I like to try new ideas', 'I think it is good to try out new brands one is not familiar with', 'I like to experiment with new consumer durable brands'.

**Factor Eleven: Legislation (on environment)**

The factor exhibited maximum weightage of 2.7 percent and was represented by loading statements 'I

think the legislations are addressing the gravity of environment problem’, ‘I think government is legislating well to encourage usage of environment friendly products’, ‘I regard on going rules and regulations as vital to save pollution’.

**Table 5: Pattern Matrix: Extractive Factor Analysis**

Sub Scale Dimensions	Item	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
Supporting environmental protection makes me feel as an environmentally responsible person	EC1		.791									
I should be responsible for protecting our environment	EC2		.828									
Environment protection starts with me	EC3		.826									
I would say I am emotionally involved in environmental protection issues	EC4		.799									
Supporting environmental protection makes me feel special	EC5		.808									
I am very knowledgeable about environmental issues	EK1						.846					
I know more about recycling than the average person	EK2						.815					





There is no loss in seeking a product that is eco-friendly and recyclable	AF3	.846										
It is wise to choose a product that is re sellable and environment friendly	AF4	.841										
It makes sense to buy eco-friendly goods as they complement my life style	AF6	.866										
When I shop, I like to try most unusual product even if I am not sure I would like them	VA1									.813		
While shopping for consumer durables, I like to try new ideas	VA3									.825		
I think it is good to try out new brands one is not familiar with	VA4									.782		
I like to experiment with new consumer durable brands	VA5									.843		
Green marketing practices are workable and environment friendly	GMP1					.724						





Environment protection is responsibility of government and citizens alike	GS1								.848			
Government support is evident in form of subsidies	GS3								.843			
Government based tax incentives are accessible	GS4								.808			
Government is encouraging exemption on purchase of such products	GS6								.780			
I learn so much about environmental products from my friends	RG1			.800								
I learn so much about environmental issues and challenges from my friends	RG2			.818								
I often buy environmental products with my peer circle	RG3			.834								
I often share information regarding environmental product with my friends	RG4			.811								
I regard it as vital to be in line with changing life style	RG5			.827								

**Table 6: Components extracted across SPSS**

Component	Factor Name	Number of Variables	Factor Loadings	Variables
1.	Environmental Concern	5	.739-.861	EC1, EC2, EC3, EC4, EC5
2.	Environmental Knowledge	4	.793-.939	EK1, EK2, EK4, EK5
3.	Health	4	.909-.977	HE1, HE2, HE3, HE4
4.	Legislation	3	.766-.980	LEG1, LEG2, LEG4
5.	Availability	5	.703-.836	AV1, AV2, AV3, AV4, AV6
6.	Affordability	5	.516-.651	AF1, AF2, AF3, AF4, AF6
7.	Variety Seeking	4	.709-.841	VA1, VA3, VA4, VA5
8.	Green Marketing Practices	5	.803-.868	GMP1, GMP2, GMP3, GMP4, GMP6
9.	Buyer Behavior	4	.795-.925	BB1, BB2, BB5, BB8
10.	Government Support	4	.423-.530	GS1, GS3, GS4, GS6
11.	Reference group	5	.516-.652	RG1, RG2, RG3, RG4, RG5

*Source: Outcome of SPSS based Dimensional Validity Analysis*

**5. Conclusion of the Study:** Current study is an effort to find out the factors affecting green marketing. Some statements were taken to finalize the questionnaire in order to collect the primary data. Further, questionnaire was refined after consultation with experts and through pilot survey. Total 11 factors were extracted after applying factor analysis namely environment concerns, environment knowledge, health, legislation, availability, affordability, reference groups, government support, buyer behavior etc.

**6. Theoretical Implications:** Green marketing practices and their successful adoption across firms in consumer durable goods sector will remain a challenging task. As the firms aim at seeking green marketing practices, but the transition would not be easy.

#### **To The Manufacturers**

Current study would help in making manufacturers aware that legislations have been framed for adoption of ethical practices for manufacturing green goods which they need to follow. In the absence of such practices, penalty

can be imposed on them.

Study will also be beneficial in making manufacturers and sellers understand that customers will buy green goods if these goods will be available at price within the pocket of customers so they should try to manufacture green goods within their budget.

Customers also prefer those outlets which are nearby to them so it should also be kept in mind by the producers and suppliers of green goods to open their outlets nearby residential areas.

Customers also shift or retain with that brand which provides them multi variety of goods with a plethora of features.

#### **To the Customers**

The factors environment concerns and environment knowledge have been identified as important factors and current study imply on customers in making them aware regarding ill effects of non green goods on environment.

They would come to know through current study that green goods not only beneficial to the environment but also useful for human health as ecologically balanced environment should be maintained for human survival.

#### **To the Governments**

The core contingencies examined in this research revolve around the possible roles of 'reference groups' and 'government supports and legislation' in shaping green marketing practices being practiced. The study reflects well on the situations where the reference group based influences along with government support may be critical for pushing the

adoption of green marketing practices. This owes implications in terms of sustenance of market orientation and leveraging the market orientation as a competitive strength.

Government should formulate stringent law for the proper implementations otherwise purity of environment cannot be regained.

#### **7. Limitations of Current Research**

The research could suffer from limitation in form of genuineness of information being leveraged and the adequate reach across identified sample for the current research.

The research experienced numerous limitations in terms of time, geography of coverage, approach and selection of factors.

The current research suffers from the limitation in terms of the focus.

The study was time bound yet longitudinal perspective could have yielded better results and enabled mapping of influences over a larger time frame of analysis.

The current study borrowed from literature and pre-validated scales on subject matter from the studies from Western economies and exhibits less of focus on Indian economy and the unique challenges of Indian durable goods markets.

The relative limitation could be choice of individual retail consumer over institutional consumers of durable goods.

#### **8. Scope for further Research:**

The current research paper summarized

the conclusions from the research exercise. The future research can be conducted across areas of other verticals from the durable goods industry focusing on urban and rural locations. The future areas of research could include diverse user segments involving multiple age groups, involving users from diverse technology literacy backgrounds and users from diverse households. The

further research could be conducted across diverse customer class involving retail and institutional goods users. The latest technology based variations could be explored across consumer goods user segments in India and across global perspective. Further research can be conducted by taking a larger sample and from different geographical area.

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# Factors affecting Knowledge sharing through Social media amongst Employees

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## Abstract

Knowledge sharing is an essential component of every company's success. In the absence of efficient knowledge management, no company can last long. Social networking is a relatively new notion that has shown to be quite effective for knowledge sharing.

**Purpose-**This Paper aims to study factors that impact job related knowledge sharing of the employees through social media. The scholarly research on factors influencing knowledge sharing by employees is uncovered in this study from the knowledge sharing self-efficacy and knowledge sharing behaviour perspectives.

**Methodology-**The Primary data for the study was gathered using a structured questionnaire in Google form from the employees in IT sector in Chandigarh, Panchkula and Mohali. Factor Analysis has been applied to study the proposed objective.

**Findings-** Knowledge sharing Self-efficacy and Knowledge sharing behaviour were extracted as the two factors that impact job related knowledge sharing by the employees through social media.

**Keywords:** Social media, Knowledge sharing, Employees, Workplace.

## Introduction

It is the age of knowledge management, with knowledge exchange playing a significant role. Knowledge sharing is the most important aspect of an

organization's knowledge management. For a company's survival and success, regular knowledge exchange among its employees is required. Knowledge sharing supports the business's innovative knowledge. All operations

of generating, transforming, and transmuting the proper information from the right individual to the right individual at the right place and at the right time are included in knowledge management (Akram, Lei, Haider, Hussain, & Puig, 2017).

In order to accomplish this, the association must foster a climate of trust and community development. So that the members' goals of sharing information might be realised. People who work in the business acquire information and hoard it. Intentions to share and actions to communicate that knowledge are vital for its dissemination (Chow & Chan, 2008). An organisation that supports knowledge sharing will fare better than one that does not. A good knowledge management system in a corporation can help a company gain a competitive advantage by retaining personnel, lowering turnover, increasing efficiency, and developing knowledgeable capital (Razak, et al., 2016). This article will look at the factors that influence how employees share job-related knowledge on social media.

## **Theoretical Background**

### **Knowledge sharing**

Implicit/tacit knowledge can be either open/explicit or implicit/tacit knowledge. Open knowledge can be classified and codified in inscriptions or codes. It is linked to evidence, procedures, and rules, among other things (Matzler, Renzl, Muller, Herting, & Mooradian, 2008). It is more official in character and more relaxing to communicate information via records,

instruction manuals, and copies, for example. Another form is implicit or tacit knowledge, which is linked to repeated runs and cannot be classified as inscriptions or codes. Nature contains the majority of knowledge. Implicit information is more difficult to impart because it is more personal and demands more dialogue among the individuals. It is difficult to disseminate implicit knowledge since it necessitates the creation of visual representations and a variety of different ways of communicating it. It must be comprehended (Razak and colleagues, 2016). So, tacit information is personal and requires more energy to impart, whereas explicit knowledge is prescribed and autonomous in nature, and is relatively easy to articulate and explain.

(Hooff & Ridder, 2014) Knowledge sharing is the exchange of knowledge, whether tacit or explicit, between individuals, as well as the creation of new knowledge as the process progresses. As a result, they can contribute or gather knowledge. Information contribution refers to the act of conveying and sharing one's knowledge or intellect with others. Referring to and conversing with colleagues or acquaintances to get their information is known as knowledge gathering. Because of its implicit nature, knowledge is difficult to gather and implement (Zaffar & Ghazawneh, 2012).

(Zaffar & Ghazawneh, 2012) Their research focused on the knowledge phase, which includes:



(a) Internalization, which refers to the practise of acquiring or comprehending knowledge from the organisation. Within the organisation, several mechanisms for peer-to-peer distribution of information and expertise are developed.

(b) Externalization is the activity of sharing and exchanging knowledge with others in order to reuse it. It might be a formal or informal get-together. Official channels include conferences, assignments, sessions, and so on, whereas casual channels include casual interaction over lunch or in some other way. Knowledge development follows knowledge transmission.

(c) Objectification: Knowledge exchange does not imply any appropriate purpose until it is accepted by the association. This is the way that takes the longest from the time the information is obtained and transmitted for no reason until it is acknowledged by the entire business. As a result, objectification is the process of forming knowledge as a whole.

(d) Intermediation: This is another important concept offered in the evolution by the study, as it is the practice that connects the information seeker with the knowledge provider. It takes into account the SECI model, which includes (i) socialisation, which involves changing implicit to explicit knowledge, (ii) externalisation, which involves expressing implicit to explicit knowledge, (iii) combination, which involves translating explicit to explicit knowledge, and (iv) internalisation, which involves changing explicit to implicit knowledge.

(Benbya, Passiante, & Belbaly, 2004) At work, they contributed to four stages of the knowledge procedure, which include (i) knowledge conception, which is the creation of knowledge by acquiring it; (ii) knowledge acquisition, which is the acquisition of knowledge by acquiring it; and (iii) knowledge application, which is the application of knowledge (ii) knowledge storage, which entails storing knowledge in a system of facts bases or handbooks; (iii) knowledge dissemination, or making knowledge official, which entails disseminating knowledge among business associates; and (iv) knowledge application, which entails putting on or consuming information in the organization for job-related purposes.

### **Research gap and contribution of the Study**

The main objective of the present study is to investigate into the factors affecting job related knowledge sharing of the employees through social media .The study is significant as it aims to fill gap in the literature regarding job related knowledge sharing through social media amidst IT sector in Chandigarh, Panchkula and Mohali.

### **Objective of the Study**

To examine the factors that influences job related knowledge sharing through social media.

### **Research Methodology**

The study aims to ascertain the factors that impact job related knowledge sharing through social media. This study aims to bring forward the factors

that encourage people for knowledge sharing. Through a structured questionnaire via Google form and offline visits data was gathered from 600 employees of IT sector of Chandigarh, Panchkula and Mohali. Pilot study was done of the questionnaire so as to ensure the appropriateness of the questionnaire before actual research. Statements were checked for their positive correlation and further for the data adequacy. Application of Cronbach's alpha and KMO techniques signified the appropriation of factor analysis. Factors that impact the job related knowledge sharing through social media were extracted by analyzing the gathered data using Factor analysis. Being a method of data reduction, exploratory factor analysis was carried out and further the method of principal

component analysis of factor analysis was applied using SPSS. After initial factor extraction, varimax rotation was applied to determine and justify the non-correlation of factors to each other.

#### Data Analysis and Result-

Factor analysis has been used on data gathered from 600 respondents so as to evaluate the factors that impact employees job related knowledge sharing through social media. Out of total 12 statements two factors were extracted which had 60.275 of cumulative variance. The extracted factors from the statements were named as knowledge sharing self-efficacy and knowledge sharing behavior. Item wise reliability was also carried out. Cronbach's alpha was applied to check the reliability.

**Table-1 Communalities**

Communalities		Corrected Item total correlation	Cronbach's Alpha if Item Deleted	Mean	Std.Deviation	
	Initial	Extraction				
To share my knowledge through social media with other organizational members, I feel confident in providing my experiences, insights or expertise as an example.(KS1)	1.000	.586	.612	.854	5.0817	1.59664

To share my knowledge through social media with other organizational members, I feel confident in providing my experiences, insights or expertise by engaging in dialogue with others. <b>.(KS2)</b>	1.000	.585	.637	.853	5.0650	1.53341
To share my knowledge through social media with other organizational members, I feel confident in providing my ideas and perspectives to others through participating in discussions. <b>.(KS3)</b>	1.000	.624	.589	.856	4.9733	1.63107
To share my knowledge through social media with other organizational members, I feel confident in articulating myself in written, verbal or symbolic forms. <b>.(KS4)</b>	1.000	.764	.686	.850	4.8883	1.57480
To share my knowledge through social media with other organizational members, I feel confident in authorising an article or posting a message to the community forum or discussion area. <b>.(KS5)</b>	1.000	.605	.594	.856	4.7933	1.62943
To share my knowledge through social media with other organizational members, I feel confident in responding or adding comments to messages or articles posted by others. <b>.(KS6)</b>	1.000	.543	.548	.859	4.8283	1.68432

To share my knowledge through social media with other organizational members, I feel confident in answering questions, giving advice or providing examples to questions or inquiries from others. <b>.(KS7)</b>	1.000	.455	.536	.859	4.7000	1.54833
I frequently participate in knowledge sharing activities with other organizational members through social media. <b>(KS8)</b>	1.000	.600	.469	.863	5.1500	1.50708
I usually spend a lot of time conducting knowledge sharing activities with other organizational members through social media. <b>.(KS9)</b>	1.000	.634	.461	.864	5.0450	1.52102
When participating in social media, I usually actively share my knowledge with other organizational members. <b>.(KS10)</b>	1.000	.677	.518	.860	5.0467	1.49941
When discussing a complicated issue with other organizational members on social media, I am usually involved in the subsequent interactions. <b>.(KS11)</b>	1.000	.642	.442	.865	4.9117	1.53985
On social media I usually involve myself in discussions with other organizational members on various topics rather than specific topics. <b>.(KS12)</b>	1.000	.517	.536	.859	4.9117	1.56246

**Factor Analysis outcomes**

Feasibility of the gathered data for application of factor analysis was carried out. Exploratory factor analysis was carried out as a mean of data reduction via SPSS. Principal component analysis brought forward 2 factors comprising of Eigen value greater than 1 thereby explaining 60.275 of variance. Table 1 shows the value of communalities ranging from 0.46 to 0.764.

**Pearson correlation Analysis**

Pearson’s correlation coefficient has been used to determine association amongst the variables. For measuring relationship between 12 independent variables relating to knowledge sharing through social media correlation analysis was done. Correlation analysis was conducted to check the independence of variables from each other

The Variance defined by each factor is shown in Table 2.

Inter-Item Correlation Matrix												
	KS1	KS2	KS3	KS4	KS5	KS6	KS7	KS8	KS9	KS10	KS11	KS12
KS1	1.000	.619	.521	.603	.483	.488	.391	.206	.204	.202	.175	.367
KS2	.619	1.000	.586	.578	.505	.429	.374	.267	.242	.263	.212	.347
KS3	.521	.586	1.000	.625	.557	.491	.419	.152	.158	.201	.101	.296
KS4	.603	.578	.625	1.000	.660	.586	.613	.194	.196	.223	.159	.278
KS5	.483	.505	.557	.660	1.000	.516	.430	.187	.147	.197	.171	.284
KS6	.488	.429	.491	.586	.516	1.000	.473	.157	.153	.207	.149	.197
KS7	.391	.374	.419	.613	.430	.473	1.000	.233	.182	.238	.177	.241
KS8	.206	.267	.152	.194	.187	.157	.233	1.000	.516	.516	.557	.415
KS9	.204	.242	.158	.196	.147	.153	.182	.516	1.000	.608	.519	.425
KS10	.202	.263	.201	.223	.197	.207	.238	.516	.608	1.000	.543	.524
KS11	.175	.212	.101	.159	.171	.149	.177	.557	.519	.543	1.000	.461
KS12	.367	.347	.296	.278	.284	.197	.241	.415	.425	.524	.461	1.000

**Extraction of factors**

Factor analysis was applied to determine the factors influencing job related knowledge sharing through social

media. Respondents rated 12 statements on a seven point Likert scale ranging from strongly disagree to strongly agree. All factors had a factor loading

of more than .5 so all were considered from 0.654 to 0.867 .The Eigen value of for the study. The factor loading ranged the factors were 2.273 and 4.960.

Rotated Component Matrix	Component	
	1	2
To share my knowledge through social media with other organizational members, I feel confident in articulating myself in written, verbal or symbolic forms. .(KS4)	.867	
To share my knowledge through social media with other organizational members, I feel confident in providing my ideas and perspectives to others through participating in discussions. .(KS3)	.786	
To share my knowledge through social media with other organizational members, I feel confident in authorising an article or posting a message to the community forum or discussion area. .(KS5)	.770	
To share my knowledge through social media with other organizational members, I feel confident in providing my experiences, insights or expertise as an example.(KS1)	.747	
To share my knowledge through social media with other organizational members, I feel confident in responding or adding comments to messages or articles posted by others. .(KS6)	.732	
To share my knowledge through social media with other organizational members, I feel confident in providing my experiences, insights or expertise by engaging in dialogue with others. .(KS2)	.730	
To share my knowledge through social media with other organizational members, I feel confident in answering questions, giving advice or providing examples to questions or inquiries from others. .(KS7)	.654	
When participating in social media, I usually actively share my knowledge with other organizational members. .(KS10)		.810
When discussing a complicated issue with other organizational members on social media, I am usually involved in the subsequent interactions. .(KS11)		.798
I usually spend a lot of time conducting knowledge sharing activities with other organizational members through social media. .(KS9)		.791
I frequently participate in knowledge sharing activities with other organizational members through social media.(KS8)		.765

On social media I usually involve myself in discussions with other organizational members on various topics rather than specific topics. .(KS12)		.659
Eigen values	4.960	2.273
% of Variance	41.335	18.940
Cumulative variance %	41.335	60.275
Scale reliability alpha Cronbach's alpha	.884	.838
Cronbach's Alpha = .868, Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .890, Bartlett's Test of Sphericity ( Approx. Chi-Square= 3236.070 , Df=66, Sig=0.000		

### Knowledge sharing self-efficacy:

The first factor is knowledge sharing self-efficacy. It includes seven indicators i.e.

1. To share my knowledge through social media with other organizational members, I feel confident in providing my experiences, insights or expertise as an example.
2. To share my knowledge through social media with other organizational members, I feel confident in providing my experiences, insights or expertise by engaging in dialogue with others.
3. To share my knowledge through social media with other organizational members, I feel confident in providing my ideas and perspectives to others through participating in discussions.
4. To share my knowledge through social media with other organizational members, I feel confident in articulating myself in written, verbal or symbolic forms.
5. To share my knowledge through social media with other organizational

members, I feel confident in authorising an article or posting a message to the community forum or discussion area.

6. To share my knowledge through social media with other organizational members, I feel confident in responding or adding comments to messages or articles posted by others.

7. To share my knowledge through social media with other organizational members, I feel confident in answering questions, giving advice or providing examples to questions or inquiries from others.

Self-efficacy plays an imperative role in inducing individuals 'motivation and behaviour (Bandura, 1982, 1986; Igbaria and Iivari, 1995). Persons who have high self-efficacy will be more expected to do connected behaviour than those with low self-efficacy. Self-efficacy has been applied by many researchers in different research areas. More lately, the perception of self-efficacy has been applied to knowledge management to see the consequences of personal efficacy confidence in knowledge

sharing, i.e. knowledge sharing self-efficacy. Self-efficacy, or the confidence in one's competences to form and effect progressions of activities mandatory to achieve potential circumstances (Bandura, 1997). It is a significant factor influencing the decision to share knowledge (e.g., Bock and Kim, 2002; Kankanhalli et al., 2005). This factor alone has explained 41.335 % of the total variance in the factor analysis. Scale reliability of this factor is .884 and this factor covers 4.960 of the Eigen values. The factor loading of this trait of personality ranges from .654 to .867 and the indicator relating to confidence in oneself in articulating in written, verbal or symbolic forms has the highest loading of .867.

#### **Knowledge sharing behaviour:**

Knowledge sharing behaviour is the second factor. It includes five indicators i.e.

1. I frequently participate in knowledge sharing activities with other organizational members through social media,
2. I usually spend a lot of time conducting knowledge sharing activities with other organizational members through social media,
3. When participating in social media, I usually actively share my knowledge with other organizational members,
4. When discussing a complicated issue with other organizational members on social media, I am usually involved in the subsequent interactions,
5. On social media I usually involve myself in discussions with other

organizational members on various topics rather than specific topics.

Founded on Davenport and Prusak's (1998) suggestion, knowledge sharing among employees can be demarcated as a method that comprises the effort to transfer knowledge by a sender, the accomplishment of the transmission, and the positive captivation of this knowledge by a receiver. To be more precise in relation to the existing study, knowledge sharing behaviour means the readiness of employees to share with others the knowledge they have acquired or created through social media for work purpose.

The factor loadings of knowledge sharing behaviour range from .659 to .810. The indicator *When participating in social media, I usually actively share my knowledge with other organizational members* has the highest factor loading of .810 and the factor covers 2.273 of the Eigen values. The factor has explained 18.940 % of the total variance in the factor analysis. The scale reliability of this factor related to knowledge sharing behaviour is 0.838.

#### **Conclusion**

This study has brought forward two different factors comprising of different items that impact job related knowledge sharing of employees through social media i.e. Knowledge Sharing Self efficacy which refers to a person's belief in his or her ability to effectively convey information. To hold such a conviction, one must be convinced that they have true knowledge worth sharing and that they possess the required skills to do so



and Knowledge sharing behavior which means a set of individual behaviors involves sharing one's work-related knowledge and experience with other individuals inside one's organization in IT sector in Chandigarh, Panchkula and Mohali. The current research paper's findings will be beneficial to businesses attempting to establish a knowledge-sharing culture. Similarly, this research will assist employees in better understanding how to improve their knowledge-sharing and learning methods. This Study would be helpful for the HR managers as well, as they will be guided to know the factors that affect job related knowledge sharing in the organization through social media and also can frame their social media usage policy accordingly. Technology is employed to capture and share knowledge so this study has ramifications for knowledge management system designers and implementers too.

The findings can be used by managers and HR specialists to devise methods to improve the knowledge sharing efficacy and knowledge sharing behavior of employees through social media, as knowledge management is a crucial factor in organizational success and usage of social media for work purposes and hence for knowledge sharing can provide leverage to organizations.

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## Limitation and scope for future research

To begin with, because knowledge sharing is such a broad and complex concept, the scale used in this study may not adequately reflect employees' overall sense of knowledge sharing for work purpose in the dynamic setting of the IT sector. Second, the potential moderating impacts of different industrial sectors (e.g., government versus private sector) or the knowledge sharing context of the participating organization were not examined in this study. Furthermore, IT sector is made up of a number of organisations whose workers operate in various fields and adhere to various organisational cultures. This may have an impact on their desire to provide information. As a result, future study may investigate employing longitudinal data collecting and a participant observation method to acquire a better understanding of more in-depth aspects affecting individuals' knowledge-sharing behaviour. Lastly, the Study has been conducted only in Tricity i.e Chandigarh, Panchkula and Mohali and only in IT sector. So, the results of the study cannot be generalized to the other sectors as well. Moreover the study has been carried out during the pandemic situation, the same study if carried out during a normalized situation may generate different results.

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# Diagnosing The Conditional Dependence Between Returns And Risk With Vector Autoregressive Model During Covid Crisis

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## Abstract

**Introduction:** This paper proposed two separate tests for checking the conditional dependence between returns and risk of selected securities using Vector Autoregressive (VAR) model.

**Methodology:** The proposed first test is based on Special Wald's F-statistic. This test was employed in order to check whether the expected returns conditionally depend on risk and past year returns if the returns follow normal distribution. Similarly, in order to scrutinize the conditional dependence of risk on return and past years risk, the second test based on Lagrange's multiplier (LM) statistic was employed. The methodology consists to model the data over the security returns of selected 5 companies under FMCG Industry listed in National Stock Exchange (NSE), India over the period between Jan 1, 2020 to Dec 31, 2020.

**Results:** From the result of the study, it is revealed that even though the stock liquidity of Britannia and Marico is good, their expected returns reveals that this was not a deciding factor on their past year risk and return during the period of the study. And also Nestle and ITC proved to be their risk has an influence over their past risk and past returns.

**Keywords:** returns, risk, conditional dependence, autoregression, vector autoregression, heteroscedasticity, Special Wald test, Lagrange's multiplier test

### Introduction and related works

Vector autoregression (VAR) is an econometric model and widely used in econometric applications. It is said to be a time series model in which it is used when two or more time series have an impact on each other and known to be inter dependence between multiple time series. The reason that VAR is considered as an Autoregressive model (AR), it is proven for forecasting. Therefore, with the help of the Past actions or behaviours of variables it is modelled as a function. Following are the works regarding the studies especially on Vector autoregression by adopting new framework. Sims (1980) first proposed Vector Auto Regression (VAR). Phillips and Hansen (1990) designed Fully modified least squares (FM – OLS) regression. Philips (1995) developed an asymptotic theory based on the above method and also with Fully modified Vector autoregression (FM-VAR). The fully modified (FM) estimators designed to estimate cointegrating relations directly by modifying traditional OLS. Le et.al (1996) introduced Univariate mixture autoregressive models and it was further developed by Wong and Li (2000), in order to modelling the non-linear time series and they introduced mixture autoregressive (MAR) model by generalizing Gaussian mixture transition distribution (GMTD) model. This model assists to modelling the time series along with Multimodal conditional distributions and with heteroscedasticity. Balcilar et.al (2016) used non-linear logistic smooth transition vector autoregressive model

(LSTVAR) and analyzed whether the financial shocks especially the positive and negative shocks have asymmetric effect or not. Kalliovirta et.al (2016) developed Gaussian mixture vector autoregressive (GMVAR) model, which is a new nonlinear vector autoregressive (VAR) model and a mixture VAR model (MVAR) which focus on regime switching behavior. Qian (2016) studied a VAR model with varied frequency data in a Bayesian context. Lower frequency (aggregated) data are essentially a linear combination of higher frequency (disaggregated) data. Luintel and Khan (1999) examined the long-run relationship between financial development and economic growth in a MVAR. Ahalawat and Patro (2019) Predicted the predict dynamic behaviour of economic and financial time series The outcomes of vector autoregression approach depicted that the two variables have positive impact and are statistically significant in the short run. Christopoulos and Tsionas (2003) investigated the long run relationship between financial depth and economic growth, trying to utilize the data in the most efficient manner via panel unit root tests and panel cointegration analysis. The long run relationship is estimated using fully modified OLS. Rahbek and Nielsen (2014) proposed a discrete-time multivariate model where lagged levels of the process enter both the conditional mean and the conditional variance. Specifically, the model bridges vector autoregressions and multivariate ARCH models in which residuals are replaced by levels lagged. The model thus allows for volatility induced stationarity and the

paper shows conditions under which the multivariate process is strictly stationary and geometrically ergodic. This paper utilised the Vector autoregressive model and proposed a test to check the conditional dependency between return

and risk based on Special Wald and Lagrange’s multiplier test statistic. The proposed tests were performed based on two assumptions namely

Expected returns are Non-Stationary.

Risk of the security is Heteroscedastic

• **Section 2 - Testing the conditional dependency of returns on risk**

Based on the above pointed assumptions, the authors made an attempt to test the following Vector autoregression of the expected returns on risk is given as follows:

$$E\left(X_t / \sigma_{X_t}^2, \sigma_{X_{t-1}}^2, \dots, \sigma_{X_{t-p}}^2, \mu_{X_{t-1}}, \dots, \mu_{X_{t-q-1}}, \mu_{X_{t-q}}\right) = \alpha + \sum_{i=0}^p \alpha_{1i} \sigma_{X_{t-i}}^2 + \sum_{j=1}^q \alpha_{2j} \mu_{X_{t-j}}$$

-(2.1)

Vector autoregressive model(Var) of lag length (p,q) is used to perform the test based on the above said assumptions, the following steps need to adopt:

**Step 1:** Consider the actual returns( $X_t$ ) as an endogenous variable and the Squared deviations from the average returns namely  $(x_t - \bar{x})^2, (x_{t-1} - \bar{x})^2, \dots, (x_{t-p-1} - \bar{x})^2, (x_{t-p} - \bar{x})^2$   $x_{t-1}, x_{t-2}, x_{t-3}, \dots, x_{t-q-1}, x_{t-q}$  are exogenous variables.

**Step 2:** Based on (2.1), Regress the actual returns of the security at time 't' with the lagged Squared deviations from the average returns and the lagged actual returns of (p,q)the security with a lag length of by using the method of OLS for (2.2) and  $u_t \square ND(0, \sigma_u^2)$

which given as 
$$X_t = \alpha + \sum_{i=0}^p \alpha_{1i} (X_{t-i} - \bar{X})^2 + \sum_{j=1}^q \alpha_{2j} X_{t-j} + u_t$$

**Step 3:** Compute the Wald’s F-statistic  $F' = \frac{R^2}{K-1} / \frac{1-R^2}{n-K} \square F(K-1, n-K)$

which follows F-distribution with (K-1, n-K) degrees of freedom, k=p+q+1 is the estimated no. of parameters which is equal to the no. of lags used plus one and R<sup>2</sup> is the unadjusted R-squared from the regression model (2.2).

**Step 4:** Reject the null hypothesis that

$$H_0 : \alpha_0 = \alpha_{10} = \alpha_{11} = \alpha_{12} = \dots = \alpha_{1(p-1)} = \alpha_{1p} = \alpha_{21} = \alpha_{22} = \dots = \alpha_{2(q-1)} = \alpha_{2q} = 0$$

if the computed  $F' > F_{0.05}(K-1, n-K)$  or  $F' > F_{0.01}(K-1, n-K)$  the upper Percent point of the F-distribution with (K-1, n-K) degrees of freedom at 5% and 1% significance level respectively.

**Step 5: Decision** - The rejection of the null hypothesis confirms that the expected

return of the security conditionally depends on the risk and returns over different time periods. If the acceptance proves, that the expected returns is equal to the constant, this shows that the expected returns is constant not depends on the risk and returns over time. Similarly, the risk and returns over different time periods are not having any effect on its actual returns at time 't'.

### • Section 3 - Testing the conditional dependency of risk on returns

In this section, another attempt is made to test the following Vector autoregression of the risk on the expected returns of the security is given as follows:

$$E\left((X_t - \mu X)^2 / \mu_{X_t}, \mu_{X_{t-1}}, \dots, \mu_{X_{t-r-1}}, \mu_{X_{t-r}}, \sigma_{X_{t-1}}^2, \dots, \sigma_{X_{t-s-1}}^2, \sigma_{X_{t-s}}^2\right) = \beta + \sum_{i=0}^r \beta_{1i} \mu_{X_{t-i}} + \sum_{j=1}^s \beta_{2j} \sigma_{X_{t-j}}^2$$

- (3.1)

Vector autoregressive model (*Var*) of lag length (*r, s*) is used to apply the test based on the above assumptions, the following steps need to adopt:

**Step 1:** Consider the Squared deviation from the average returns  $(X_t - \bar{X})^2$  and time 't' as an endogenous variable and the lagged actual returns namely  $X_{t-1}, X_{t-2}, X_{t-3}, \dots, X_{t-r-1}, X_{t-r}$  and  $(X_{t-1} - \bar{X})^2, (X_{t-2} - \bar{X})^2, \dots, (X_{t-s-1} - \bar{X})^2, (X_{t-s} - \bar{X})^2$  are exogenous variables.

**Step 2:** From (3.1), Regress the lagged values of the security returns with the squared deviation from the average returns by using the method of OLS for (2.4).

$$(X_t - \bar{X})^2 = \beta + \sum_{i=0}^r \beta_{1i} X_{t-i} + \sum_{j=1}^s \beta_{2j} (X_{t-j} - \bar{X})^2 + v_t$$

- (3.2)

**Step 3:** Since is non-normally distributed, then perform the LM test by computing the chi-square-statistic  $nR^2 \square CHISQ(K)$  which follows Chi-Square distribution with *K* degrees of freedom, where  $K=r+s+1$  is the estimated no. of parameters which is equal to the no. of lags used plus one and is the unadjusted R-squared from the regression model (3.2)

**Step 4 :** Reject the null hypothesis that ,

$$H_0 : \beta_0 = \beta_{10} = \beta_{11} = \beta_{12} = \dots = \beta_{1(r-1)} = \beta_{1r} = \dots = \beta_{21} = \beta_{22} = \dots = \beta_{2(s-1)} = \beta_{2s} = 0$$

if the computed *CHISQ statistic*' > *CHISQ*<sub>0.05</sub>(*K*) or , *CHISQ statistic*' > *CHISQ*<sub>0.01</sub>(*K*) the upper Percent point of the Chi-square distribution with *K* degrees of freedom at 5% and 1% significance level respectively.

**Step 5 Decision:** The rejection of the null hypothesis confirms that risk of the security conditionally depends on the expected returns over different time periods and the risk of the security in the past time periods. If the acceptance confirms,



that the risk is equal to the constant and this shows that risk is not depending on its security returns and risk over time. Similarly, the expected returns and risk of the securities over different time periods has no influence on its risk at time 't'.

- **Section 4 - Data and methodology**

This section deals with the data and methodology for the proposed test by selecting equity securities from FMCG Industry listed in National Stock Exchange (NSE), India. The selected securities from FMCG Industry are ITC, Britannia, Dabur, Marico and Nestle. The historical prices of these securities were collected over the period from January 1, 2020 to December 31, 2020 with 252 Observation and its returns are calculated. The proposed tests were performed with the help of the Gretl version 2020d (Gnu Regression, Econometrics and Time-series library). The test results are presented from Table-1 to Table-10 in which testing the conditional dependence of present year expected returns on past year risk and expected returns of the selected securities are shown in Table-1 to Table-5. Likewise, testing the conditional dependence of present year risk on past year expected returns and risk of selected securities are visualized from Table 6 to Table 10.

- **Section 5 - Discussion**

Table 1-5 visualizes the results of the Special Wald test based on F-statistic of the selected securities of FMCG Industry listed in NSE, India. The test was conducted to scrutinize the Vector

autoregression of expected returns on risk with securities returns as dependent variable and risk as independent variable with 30 combinations. The results of the analysis exhibits that most of the securities attained the significance level at 5% and 1% level in which it shows that expected returns conditionally dependent on risk as well as the past year expected returns. Securities such as Britannia, Dabur and Marico do not achieve the level of significance at 5% and 1% respectively in several lag combinations. Britannia does not achieve the level of significance in (0,1) (0,2) (0,3) (0,4) and (0,5) lag periods and this exhibits that the null hypothesis is accepted in these periods. This shows that there is no conditional dependence between present year expected returns on Past year risk and past year expected returns in these specific periods. Regarding Marico, in (1,1) and (1,3) does not achieve the level of significance hence the risk is proven to be heteroscedastic. This shows that there is no conditional dependence between present year expected returns on Past year risk and past year expected returns in these specific periods for Marico. Regarding Dabur, all the 30 combinations of lag periods does not achieve its level of significance. Hence it is proved that from (0,1) to (5,5) periods there is no conditional dependence between present year expected returns on Past year risk and past year expected returns in these specific periods for Dabur. This shows that the expected returns are constant not depends on the risk and returns over time. Similarly, table-6-10 exhibits the

results of Lagrange's multiplier test of the securities of the selected FMCG securities. The test was conducted to scrutinize the Vector autoregression of risk on expected returns with risk as independent variable and securities returns as 5 independent lagged variable periods with 30 combinations. The results revealed that for the majority of the securities their risk is conditionally dependent on their expected returns. Nestle does not achieve the level of significance for the entire lag time periods. Whereas, Britannia and Marico achieved the level of significance in certain periods. Therefore, it is proved that the null hypothesis is accepted and with respect to Nestle there is conditional dependence of present year risk on past year expected returns and risk over the entire time period considered in the study. At the same time regarding Britannia, apart from (0,1) and (0,2) lag periods all the other combinations from (0,3) to (5,5) not achieved the level of significance. Hence it is proved that there is conditional dependence of past year's risk exists. Concerning Marico, the result of the analysis reveals that the lag periods such as (0,1), (0,2) (0,3) (0,4) (0,5) and (1,1) are significant than the following periods from (1,2) to (5,5). Hence it shows that the risk of the above said securities have no significant relationship with the returns in the remaining periods. and it is proved that there is no conditional dependence of risk on returns for Marico in these specified time period.

### **Conclusion**

From the above statistical inference, the following considerations were made:

In this study the authors diagnosed conditional dependence between returns and risk by using vector autoregressive model. The authors emphasized on the dependency and independency of security returns, not of the lags. Here, in this study lags are taken arbitrarily. In Vector autoregressive models, the time series must influence each other variables and as a statistical model it is used to find out the influence on the endogenous variables, especially how it changes over time. Therefore, the results of the study shows that if the returns have influence over risk, then it is said to be heteroscedastic and if returns have its effect on its previous year returns then it is non-stationary in nature. Securities under FMCG Industry listed in NSE, India were considered in the study. Security returns other than Britannia, HCL and Dabur has no significant effect on their previous year returns. And also, it is revealed that ITC and Nestle have no relationship either their previous year returns nor their risk. Security returns such as Britannia and Marico have an effect and said to be Jointly conditional with its previous year's return and risk. Regarding the risk of these securities, for the specified time period it is proven that the null hypothesis is rejected and alternative hypothesis is accepted, Hence the risk of the security is Heteroscedastic. Whereas security returns of Dabur have no conditional dependent on its previous year returns. Hence it is revealed that it is asymmetric in nature in those time period. Based on the vector auto-regressive model the results of the analysis varies and changes over different time period.

Whenever the market declines, the trend of FMCG stocks in Nifty are in high demand usually for a past decade. Its demand based on several factors other than its risk aspect. In this study Stocks such as Britannia and Marico are proved that even though their stock liquidity their expected returns was not a deciding factor on their past year risk and return. Moreover, Britannia, Dabur and Marico's risk may influence its expected return. Therefore, the investors must look into the various factors of these

individual stocks in order to minimize the risk in the future. Especially, the challenge is for the investors during this pandemic period is whether to build a new portfolio or to reframe it with other sectorial stocks because of the setback in FMCG stocks. The risk of Nestle and ITC proved that it has an influence over their past risk and past returns. FMCG Sector in both Recession and in boom must be highly considered by the investors that what were their risk factors. That may have an impact on the following years.

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**Table 1. Testing the conditional dependence of present year expected returns on past year risk and expected returns of ITC**

Lags		Con- stant	$\sigma_{X_t}^2$	$\sigma_{X_{t-1}}^2$	$\sigma_{X_{t-2}}^2$	$\sigma_{X_{t-3}}^2$	$\sigma_{X_{t-4}}^2$	$\sigma_{X_{t-5}}^2$	Special Wald Test	
p	q	$\alpha$	$\alpha_{11}$	$\alpha_{12}$	$\alpha_{13}$	$\alpha_{14}$	$\alpha_{15}$	$\alpha_{16}$	(df1, df2)	F-statistic
0	1	0.0014		58.3886	-	-	-	-	(2, 248)	4.249771**
0	2	0.0019		135.8250		-	-	-	(3, 246)	3.617209**
0	3	0.0008				951.891**	-	-	(4, 244)	6.437213**
0	4	0.0003				782.790**	907.149**	-	(5, 242)	8.129322**
0	5					646.457**	812.718**	544.149*	(6, 240)	7.563860**
1	1	0.0014		30.9075	-	-	-	-	(3, 247)	2.891407*
1	2	0.0019		104.8540		-	-	-	(4, 245)	2.774619*
1	3	0.0008				948.232**	-	-	(5, 243)	5.132786**
1	4					742.769**	970.245**		(6, 241)	6.962970**
1	5					576.653*	887.495**	605.403*	(7, 239)	6.798953**
2	1	0.0016			-	-	-	-	(4, 245)	2.956150*
2	2	0.0020		29.7861		-	-	-	(5, 244)	2.634616*
2	3	0.0008				972.774**	-	-	(6, 242)	4.781186*
2	4					761.839**	1023.92**		(7, 240)	6.711385**
2	5					620.378*	944.4130	501.8990	(2, 248)	4.249771**
3	1	0.0016		0.559703	-	-	-	-	(8, 238)	6.338591**
3	2	0.0019		49.7772		-	-	-	(5, 243)	2.735956**
3	3	0.00078				955.956**	-	-	(6, 242)	2.417619*
3	4					766.130	1025.59**		(7, 241)	4.092835**
3	5					632.264**	948.740**	507.700	(8, 239)	5.848860**
4	1	0.00173			-	-	-	-	(9, 237)	5.618413*

4	2	0.00198		10.7799		-	-	-	(6, 241)	2.541522*
4	3	0.00075				1047.33	-	-	(7, 240)	2.263914*
4	4					828.622	964.347		(8, 239)	4.056330**
4	5					691.321**	898.605**	488.897	(9, 238)	5.317510**
5	1	0.00147			-	-	-	-	(10, 236)	5.131058**
5	2	0.00164				-	-	-	(7, 239)	5.401373**
5	3	0.00058				924.775**	-	-	(8, 238)	4.749799**
5	4					768.420**	768.205**	-	(9, 237)	5.859736**
5	5					565.468*	648.799*	692.832	(10, 236)	6.314250**

n=251 \*Significant at 5% level \*\*Significant at 1% level

**Table 2. Testing the conditional dependence of present year expected returns on past year risk and expected returns of Britannia**

Lags		Con-stant	$\sigma^2_{X_t}$	$\sigma^2_{X_{t-1}}$	$\sigma^2_{X_{t-2}}$	$\sigma^2_{X_{t-3}}$	$\sigma^2_{X_{t-4}}$	$\sigma^2_{X_{t-5}}$	$\bar{X}_{t-1}$	Special Wald test	
p	q									(df1, df2)	F-statistic
0	1	0.00044		381.15	-	-	-	-	-	(2, 248)	1.297681
0	2	0.000007		217.76	415.30*	-	-	-	-	(3, 246)	1.890985
0	3			220.51	285.67	353.56	-	-	-	(4, 244)	1.923963
0	4	-0.000032		321.01	282.24	474.72*		-	-	(5, 242)	1.817577
0	5	-0.000014		319.98	284.84	474.63*			-	(6, 240)	1.504839
1	1	0.00070		413.66	-	-	-	-		(3, 247)	4.045866**
1	2	0.00017		218.29	503.04*	-	-	-		(4, 245)	4.223773**
1	3			222.32	333.64	484.24	-	-		(5, 243)	4.183683**
1	4	0.00008		302.07	329.84	578.05		-		(6, 241)	3.630139**
1	5	0.00011		290.76	351.05	575.82				(7, 239)	3.094763**
2	1	0.00053		415.16	-	-	-	-		(4, 245)	3.223854**
2	2	0.00007		224.76	488.35*	-	-	-		(5, 244)	3.474815**
2	3			225.13	332.64	467.73	-	-		(6, 242)	3.490924**
2	4	0.00004		312.02	328.12	560.44		-		(7, 240)	3.133275**
2	5	0.00008		299.49	352.54	556.88				(2, 248)	2.729862**
3	1	0.00021		479.42*	-	-	-	-		(8, 238)	3.342416**

3	2			289.13	488.52*	-	-	-		(5, 243)	3.546861**
3	3			283.56	349.58	418.60*	-	-		(6, 242)	3.460665**
3	4			412.59	346.16	538.76*		-		(7, 241)	3.275091**
3	5			390.20	399.52	530.05*				(8, 239)	2.932958**
4	1	0.00020		486.61	-	-	-	-		(9, 237)	2.782251**
4	2			297.57	509.82*	-	-	-		(6, 241)	3.075363**
4	3			292.32	371.21	420.06	-	-		(7, 240)	3.059432**
4	4			430.83	373.12	547.75*		-		(8, 239)	2.971733**
4	5			405.34	448.48	538.28*				(9, 238)	2.720162**
5	1	0.00018		489.13*	-	-	-	-		(10, 236)	2.365667*
5	2			301.58	521.12*	-	-	-		(7, 239)	2.687036**
5	3			299.06	381.85	449.89	-	-		(8, 238)	2.751837**
5	4			436.57	383.45	576.07*		-		(9, 237)	2.699522**
5	5			409.38	466.42	569.26*				(10, 236)	2.516796**

**n=251 \*Significant at 5% level \*\*Significant at 1% level**

**Note:** Above two tables are abridged versions of original large tables. Table-3 on Dabur, Table-4 on Marico, Table-5 on Nestle, Table-6 on ITC Britannia and some other very large but useful tables could not be placed here with this article, because of space issues. *We request all readers and interested scholars to contact the author for complete tables, for their reference. We apologize for the inconvenience.*

# Government Policies for the Migrant Workforce in India: Endeavour towards Achieving Sustainable Development Goals

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**Abstract:**-The migrant workers having low skill are deprived of their basic rights. Further, they are working in the low paid salary and exploitative working conditions. The 8<sup>th</sup> Sustainable Development Goal (SDG) is to promote inclusive growth in a sustainable way by providing respectable job with augmented productivity for all. This goal is to protect the rights of all types of the labour including migrant labour, by providing safe and secure environment. The 10<sup>th</sup> SDG is to scale-down the level of inequality both internally and internationally. It is found that the country like India fails to achieve those objectives. In this Paper, the primary and secondary data is collected from different sources for a descriptive research study. For in-depth interviews, 100 migrant workers are selected on the basis of the convenient sampling. This research aims to analyze different government policies that may facilitate the migrant workers to achieve Sustainable Development Goals.

**Keywords:** Sustainable Development Goals, Migrant Workers, Government Policies, Achievements, Obstacles

## INTRODUCTION

The concept of Sustainable Development Goals (SDGs) has now become the central theme for countries across the globe. Achieving 17 Sustainable Development Goals by 2030s is now the priority of most of the countries of the world. However, points of concern are there for the constraints inherent in almost all the economies. India like

emerging economies are a bit more tensed for huge population coupled with socioeconomic constraints. As it comes to the migrant workforce of the country, the issue is more serious. The migrant workers having inferior skill set are deprived of their basic needs. As they are working hard with lower remuneration and exploitative work culture at many migrated places, achieving SDGs for them is a question

mark. The 8<sup>th</sup> SDG is to promote inclusive growth in a sustainable way by providing respectable job with augmented productivity for all. This goal is to protect the rights of all types of the labour including migrant labour, by providing safe and secure environment. Similarly, the 10<sup>th</sup> SDG is to scale-down the level of inequality both internally and internationally. The main objective of the goal is to implement a planned and well managed migration policy so that mobility of human resource will be ease, smooth and respectable. From different interspersions, it is understood that the country like India fails to achieve those objectives. With this backdrop, this study aims at assessing the different government policy measures meant for the migrant workers to achieve Sustainable Development Goals and devise the way out for how the migrant workers are accessing those schemes meant for them. Accordingly, both primary and secondary data have been used to have a descriptive analysis. In-depth interviews have been conducted on 100 migrant workers selected through non-random sampling.

## REVIEW OF LITERATURE

The existence of back-and-forth between the goals among the 17 SDGs is there. It is pertinent to see how to establish synergy among them to take care the back-and-forth between the goals. Then only SDGs can be achieved. It is inferred that there is limitation to get over back-and-forth and subsequently impairment in achieving some Sustainable Goals [1]. Since different Millennium Development Goals are interlinked, the

achievement in one goal will trigger in achieving the other goals. While achieving those goals, the synergies are not visible and countries differ on that. It is concluded that even if synergies can be achieved between Millennium Development Goals, it should not be taken for granted [2]. All the 193 countries of the United Nation agreed to achieve Sustainable Development Goals (SDGs). This is considered as the transition for achieving a sustainable world. There is clarification from the policy makers, scientists and practitioners about the way of achieving those goals [3]. There should be new-sprung metrics that incorporate visual modality from ecology and psychology for the description of the interaction among different assets starting from human capital to stacked capital assets for providing well-being in a sustainable way [4].

From the existing literature, it is found that all the SDGs are interlinked and negligence to any of the goals may lead to failure in the achievements concerning any of the other goals. While we think about sustainable development, it must include development across the sectors and communities. Migrant workforce in India, which is of considerable size, has been neglected in many aspects that need attention to achieve SDGs. Thus, governmental intervention is a must to safeguard the interest of the migrant workforce. Considering this, it has been thought of linking the existing governmental policies meant for the migrant workforce and their status in the way of achieving SDGs. The findings



of this study will help government to devise policies that will upgrade the status of the migrant workforce and also the economy through achieving SDGs.

## **OBJECTIVES AND METHODOLOGY:**

### **3.1. OBJECTIVES**

The objectives of this paper are as follows;

- To explore the different Government Policies meant for the migrant workers to achieve Sustainable Development Goals.
- To devise how the migrant workers are accessing the benefits out of those policies.
- To suggest policy measures for the more inclusion of these migrant workers in the process of development.

### **3.2. METHODOLOGY**

Methodology adopted for the study is mentioned below.

- To explore the different Government Policies meant for the migrant workers to achieve Sustainable Development Goals secondary data is collected from different sources and statistical analysis done to derive the requisite result.
- To devise how the migrant workers are accessing the benefits out of those policies, both primary and secondary data is collected and statistically analyzed. Primary data is collected from the 100 migrant workers to substantiate the result.

- To suggest policy measures for the more inclusion of these migrant workers in the process of development the views of the 100 migrants, opinion of the resource persons will be taken into consideration.

## **GOVERNMENT POLICIES FOR MIGRANT WORKERS TO ACHIEVE SDGS:**

The 8<sup>th</sup> SDG is to promote inclusive growth in a sustainable way by providing respectable job with augmented productivity for all and 10<sup>th</sup> SDG is to promote inclusive growth in a sustainable way by providing respectable job with augmented productivity for all. These goals meant for the upliftment of the marginalized section of the society in general and migrant labour in particular. For providing a better standard of living and reduce social inequality among these people following schemes are adopted by the Government of India in different time period.

### **i. Garib Kalyan Rozgar Abhiyan**

The Prime minister of India launched Garib Kalyan Rozgar Abhiyan to provide employment to the migrant workers who returned to their native place because of the pandemic coronavirus with an outlay of Rs 50,000/- crore. The objective of the scheme is to build public infrastructure and provide livelihood opportunity. The project targeted 25 works like housing for the poor, drinking water, construction of panchayat bhavans, rural mandis, community toilets, rural roads, anganwadi bhavans, and cattle sheds etc.

**(ii) Ayushman Bharat Yojana**

To achieve the target of Sustainable Development Goal and its commitment of “Leave no one behind”, Government of India launched Ayushman Bharat Yojana as per the recommendations of the national health policy 2017 for providing Universal Health coverage. It is one of the need based Health care service to holistically address the healthcare system at the Primary, Secondary and Tertiary level. The scheme has two components- Health and Wellness Centres and Pradhan Mantri Jan Arogya Yojana.

In the year 2018, Government transferred the sub-centres and Primary Health Centres to create 150000 Health and Wellness Centres. It covers Child and maternal health services and non-communicable disease by providing free essential drugs and diagnostic services. The main objective of it is to keep the people healthy and reduce the risk of chronic diseases and morbidities. The Pradhan Mantri Jan Arogya Yojana, a health assurance scheme, launched on 23<sup>rd</sup> September 2018 aims at providing health coverage of Rs 5 lakhs per family per year. The target is to cover 50 crore beneficiaries from the bottom 40% of the Indian Population. As per the report of the Government of India, 30 lakh beneficiary availed treatment as on 24<sup>th</sup> June 2019. Further 1 crore Hospital admission took place as on 20<sup>th</sup> May 2020. In addition to that as on 10<sup>th</sup> August 2020, 12.55 crore E-card issued, 1.09 crore Hospital Admission took place and 22,796 Hospitals empanelled.

**(iii) Pradhan Mantri Shram Yogi Mandhan (PM- SYM) Yojana**

This scheme meant for the old age protection and social security of the unorganised workers. The unorganised workers in the age group of 18 to 40 years, earning income up to Rs 15000/- are eligible for this scheme. Here the Government assured a monthly pension of Rs 3000/- per month on the basis of the Individual contribution and Government contribution. The target is to cover 42 crore unorganised workers engaged in different sectors like street vendors, mid-day meal workers, brick kiln workers, rickshaw pullers, rag pickers, washer men, landless labourers, agricultural workers, handloom workers, beedi workers, audio-visual workers, leather workers etc. Till now 4004930 workers have been enrolled as per ministry of labour and employment.

**• National Food Security Act:**

Article 21 of the Indian Constitution shows the right to live with dignity. This includes the right to food and other basic necessities. The Government of India enacted National Food Security Act, 2013 to provide basic food for active and healthy life. The Act targeted to provide 75% of the rural population and 50% of the urban population to receive subsidized food under Targeted Public Distribution Scheme. At present 81.34 crore persons covered under National Food Security Act to receive subsidized food grains. The Government has made the provision that eligible migrant labourers will avail their entitled food grains at the subsidized rate using the

same ration card after AADHAR / Biometric authentication.

- **BOCW Act**

The Building and other Constructions Workers Act is one of the Social Welfare legislation for the workers engaged in building and construction activities. The main target is to cover 28 million workers engaged in the labour intensive construction sector and working under inhuman and pitiful conditions. In this scheme Ministry of Labour and Employment, Government of India provides health, safety and welfare measures to registered construction workers.

- **PM Ujjwala Scheme**

Ministry of Petroleum and Natural Gas, Government of India in the year 2016 launched Prime Minister Ujjwala scheme to provide clean cooking fuel. The main objective is to cover deprived household who are cooking by using firewood, cow-dung cakes, coal etc. Its target was to provide 8 crore LPG connection by March 2020. On 7<sup>th</sup> September 2019, the target is achieved before the targeted time. In the Budget 2021-22, Special Provision has been made to provide 1 crore LPG connection to the migrant families.

- **Pradhan Mantri Gramin Awaas Yojana**

The Government of India introduced Pradhan Mantri Gramin Awas Yojana to fulfil the vision 'Housing for All' by the year 2022. The objective of the scheme is to provide a pucca house with some basic amenities to the people who do

not own a house and people who live in kutcha house.

- **Integrated Child Development Scheme**

As per Census 2011, In India 158 million population of India constitute 0-6 years. Government of India has taken so many steps for their welfare, development and protection. ICDS launched by Government of India on 2<sup>nd</sup> October 1975 for the early childhood care and development. The main target of the scheme is to provide pre-school non-formal education and to break the vicious cycle of morbidity, malnutrition, mortality and reduced learning capacity. The scheme provides nutritional support and healthcare to adolescent girls, pregnant and lactating women and children under six. Anganwadi workers at the Anganwadi centres provide maternal and child health. Further, ASHA workers are appointed under National Health Mission to carry out the objective of the scheme. The migrant labourers are getting benefit out of this scheme. The main objectives of the schemes are to improve the health and nutritional status of the children less than six years, prioritise on the psychological, social and physical development of the child. This covers a package of Supplementary nutrition, Pre-school non-formal education, nutrition and health education, Immunization, Health Check-up and referral services.

Pradhan Mantri Matru Vandana Yojana (PMMVY) Ministry of Women & Child Development

Women taking antenatal care pregnant

women and lactating mothers receive a cash benefit of Rs. 5,000 i; early registration of pregnancy, antenatal check-up and registration of the birth of the child.

#### National Crèche Scheme, Ministry of W&C

Under this scheme children are provided stimulating environment for their holistic development while their parents are at work. In the crèche, children under the age of six years will be provided care, guidance and supervision outside their home during the day. In India 23, 293 crèches are functioning as on January 2015.

#### (xi) National Social Assistance Programme, Ministry of Rural Development

The Directive principle of State Policy of Indian constitution undertake to welfare to its citizens in the means of livelihood, improve public health, raise the standard of living, provide free and compulsory education for children etc. So the Ministry of Rural Development, Government of India, introduced a welfare programme named National Social Assistance Programme. Presently, NSAP includes Indira Gandhi National Old Age Pension Scheme, Indira Gandhi National Disability Pension Scheme, Indira Gandhi National Widow Pension Scheme, National Family Benefit Scheme and Annapurna. The achievement of this is mentioned in the table no.1.

#### (xii) Sarva Shiksha Abhiyan (SSA) & RTE 2009 Government of India introduced

Sarva Shiksha Abhiyan to provide free and compulsory education to the children of 6-14 years age group to achieve universalization of elementary education. Padhe Bharat Badhe Bharat is sub-programme of the SSA to improve comprehensive early reading, writing and early mathematics programme for students in class 1 and 2. Here the Government identify the children of the migrant workers who are deprived of education and take necessary steps to include them in the Sarva Shiksha Abhiyan.

#### (xiii) Pradhan Mantri Jan Dhan Yojana (PM –JDY)

For achieving the objectives of the financial inclusion of all the households in the country, Government of India introduced Pradhan Mantri Jan Dhan Yojana. Its main objective is the universal access to banking facility with at least one basic account for every household, access to credit, insurance and pension facility and financial literacy. The beneficiary will be provided a Rupay debit Card covering accident insurance of Rs. 1lakh. The achievement of it is mentioned in the table no.2

#### (xiv) Pradhan Mantri Gareeb Kalyan Yojana (PMGKBY)

Government of India introduced a relief package of Rs. 1.70 lakh crore meant for the poor who are fighting the battle against corona virus in March 2020. The package are Insurance of Rs 50 lakhs for the health worker fighting covid-19, 80 crore people will receive freely 5 Kgs of wheat or rice and 1 kg pulses for three months, Jan dhan

account holders 20 crore women have to get Rs 500 per month for three months, MGNREGA wage increased from Rs 182/- to Rs.202/- to benefit 13.62 crore families, provision for relief to construct workers, Rs.2000/- paid to farmers under PM KISAN Yojana to benefit 8.7 crore farmers. Further 3 crore people belonging to poor senior citizen, poor disabled and poor widows received an ex-gratia of Rs.1000/-.

(xv) MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act 2005)

MGNREGA is to enhance the livelihood security of people in rural area by providing hundred days of wage employment in a financial year to a rural household whose adult member volunteer to do unskilled manual work.

(xvi) Janani Suraksha Yojana

Under Janani Suraksha Yojana, Interstate migrant workers' mother who give birth in a public hospital can avail financial assistance

#### **MAJOR CONSTRAINTS WITH THE MIGRANT LABOUR IN ACCESSING THESE SCHEMES:**

Most of the migrant labourers are facing following difficulty in accessing the different schemes meant for them.

Most of the migrant workers are working in the unorganized sector of the economy. So there is no such facility available there regarding to social security, food security and any other security of these people.

The migrant workers are mobile from

one place to another in search of work. So they are facing the problem of accessing the government schemes as no portability of the scheme is available.

As some of the migrant workers are illiterate, they are unaware about the registration of the migrant labour. The unregistered migrant labourers are unable to access the Government facility at the source of their work.

Despite so many constraints, they are accessing the schemes at their native place.

#### **THE MIGRANT WORKERS ARE ACCESSING THE BENEFITS OUT OF THOSE POLICIES:**

To effectively analyse how different schemes help the marginalized section of the society in general and migrant labour in particular in fulfilling the goals of the SDGs, migrant labours working in unorganized and filthy atmosphere are taken into consideration.

Figure-1 shows that out of the 100 migrants selected for the sample study, 27 people are engaged as security guard, 23 people are engaged in different institutions for the official work, 20 people are working as daily wage labourer in different sector, 11 people are doing painting work and 19 people doing agricultural activity.

Figure 2 shows the educational status of the migrant labour where 30 percentages of the people are having qualification of Graduation and more than that. Similarly, 21% belongs to illiterate, 15 % belongs to intermediate, 10% belongs to below primary, 4% belongs

to primary, 5% belongs to Middle, 7% belongs to secondary, and 8% belongs to matriculation.

Figure-3 shows that 61% of the migrant have registered, 15% of the people have not registered and 24% of the people are unknown about it.

Table-3 shows that 88 migrants are accessing the banking facility and 10 people are not accessing any banking facility and two people are unknown about it.

This figure-4 shows that 58 Percentage people are accessing the free health facility, 87 Percentage are accessing the educational facility, 37 percentage people are accessing the crèche facility, 85 percentage people are accessing the LPG connection, 92 percentage people are accessing the free food grains supplied by the government, 25 percentage people are accessing the insurance scheme, 32 percentage have the House, and 35 percentage people are covered under pension scheme.

This figure-5 shows that 97 Percentage people are accessing the health facility, 93 Percentage are accessing the educational facility, 37 percentage people are accessing the crèche facility, 92 percentage people are accessing the LPG connection, 25 percentage people are accessing the insurance scheme, 32 percentages have the House, and 35 percentage people are covered under pension scheme.

## **ACCESSIBILITY OF FACILITIES BY THE MIGRANT WORKERS:**

### **6.1. ACCESSIBILITY OF FOOD**

To explore how the food grains are accessed by the migrants, the following nine variables are identified.

V1- Any of my family members easily receiving the food grain at the native place.

V2- I am satisfied in the quality of food.

V3- I am timely accessing the food.

V4- The food distribution centre is at walkable distance.

V5- I am not waiting more time while receiving the food.

V6- The behaviour of the Food distributing staff is very good.

V7- I am receiving the exact quantity of food meant for my household.

V8- The food I am receiving is sufficient to my family.

V9- I am satisfied in the food grain whatever received from the Government. Here nine Variables are taken to find the accessibility of food grains by the migrants. The Variable nine (V9) is taken as dependent variable and other variables, i.e. V1 to V8, are considered as independent variable. Then data is collected from the 100 sample migrants through 5 point rating (Likert) scale. To know how the independent variables significantly influence the dependent variable, regression technique is applied.

After testing the reliability of the collected data through SPSS, we find the Cronbach's Alpha 0.729. This is highlighted in the table no.4. So we accepted the collected data as reliable for exploring how the food grains are accessed by the migrants.

Null Hypothesis: Migrants are not easily accessing the food grains supplied by the Government.

As per the table number 5, null hypothesis is rejected as level of significance is less than 0.05. So it is concluded that food grains supplied by the Government are effectively accessed by the migrants.

As per the table no.6, the independent variables like V1, V2, V3, V6 and V8 significantly influence the dependent variable-V9. As per the SPSS calculation, the significance value of V1, V2, V3, V6 and V8 is 0.006, 0.000, 0.018, 0.029 and 0.029 respectively and hence this is less than the presumed level of significance i.e. 0.05. Other independent variable whose value is more than 0.05 don't have significant influence on the dependent variable. So it is concluded that migrants are effectively assessing the food grains supplied by the Government.

## 6.2. ACCESSIBILITY OF EDUCATION

To explore how the children of the migrants are accessing the education, the following eleven variables are identified.

V1-The distance of the school is convenient.

V2-The Books are easily available nearby.

V3- The education is received at affordable fee.

V4-The Students are not facing any problem with regards to language in the class room.

V5-Class room is well organised and better managed.

V6- Transportation facility is very suitable in reaching the school

V7-Parents are involved in the decision making process of the school.

V8-The students are regularly evaluated in the school.

V9- The school infrastructure like library, toilet, drinking water etc. are available.

V10- The teacher and staff of the school are very cooperative.

V11-I am satisfied in the education provided by the school.

Here eleven Variables are taken to find the accessibility of education by the migrants. The Variable eleven (V11) are taken as dependent variable and other variables, i.e. V1 to V10, are considered as independent variable. Then data is collected from the 100 sample migrants through 5 point rating (Likert) scale. To know how the independent variable significantly influence the dependent variable regression technique is applied.

After testing the reliability of the collected data through SPSS, we find the Cronbach's Alpha is 0.727. This is highlighted in the table no.7. So we accepted the collected data as reliable for exploring how the education is accessed by the migrants.

Null Hypothesis: Migrants are not easily accessing the education.

As per the table number 8, null hypothesis is rejected as level of significance is less than 0.05. So it is concluded that education provided by the Government

are effectively accessed by the migrants. As per the table no.9, the independent variables like V1, V2, V3, V5, V8 and V10 significantly influence the dependent variable-V11. As per the SPSS calculation, the significance value of V1, V2, V3, V5, V8 and V10 is 0.008, 0.000, 0.001, 0.008, 0.003 and 0.049 respectively and hence this is less than the presumed level of significance i.e. 0.05. Other independent variable whose value is more than 0.05 don't have significant influence on the dependent variable. So it is concluded that migrants are effectively assessing the education provided by the Government.

### 6.3. ACCESSIBILITY OF HEALTH

To explore how the migrants are accessing the health facility, the following twelve variables are identified.

V1- Health centre is available at convenient distance.

V2-Different facilities like diagnosis centre, inside tap water, drinking water, inside toilet available in the hospital.

V3- Prescribed medicines are easily available.

V4-Ambulance service is easily available.

V5-Food supplied in the hospital is of good quality

V6-The cleanness of the hospital is very good.

V7-Behaviour of the hospital staff is very good.

V8-I am feeling safety inside the hospital.

V9- Hospital staff always ready to receive any emergency patient.

V10- Hospital staffs are not taking any tips from the patients.

V11- I am not waiting much time to get check-up and receiving the diagnosis report.

V12- I am satisfied in the service provided by the hospital.

Here twelve Variables are taken to find the accessibility of health by the migrants. The Variable twelve (V12) are taken as dependent variable and other variables, i.e. V1 to V11, are considered as independent variable. Then data is collected from the 100 sample migrants through 5 point rating (Likert) scale. To know how the independent variable significantly influence the dependent variable regression technique is applied.

After testing the reliability of the collected data through SPSS, we find the Cronbach's Alpha is 0.750. This is highlighted in the table no.10. So we accepted the collected data as reliable for exploring how the health facility is accessed by the migrants.

Null Hypothesis: Migrants are not easily accessing the available health facility.

As per the table number 11, null hypothesis is rejected as level of significance is less than 0.05. So it is concluded that health facility provided by the Government are effectively accessed by the migrants.

As per the table no.12, the independent variables like V2, V3, V5, V6, V8 and V10 significantly influence the



dependent variable-V12. As per the SPSS calculation, the significance value of V2, V3, V5, V6, V8 and V10 is 0.000, 0.002, 0.003, 0.045, 0.001 and 0.035 respectively and hence this is less than the presumed level of significance i.e. 0.05. Other independent variable whose value is more than 0.05 don't have significant influence on the dependent variable. So it is concluded that migrants are effectively assessing the available health facility.

#### **POLICY MEASURES FOR INCLUSION OF MIGRANT WORKERS IN THE PROCESS OF ACHIEVING SDGs:**

The following measures are necessary for effective implementation of different schemes to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

(i) Most of the migrant labourers are highly mobile in nature. They are not working at one place. This leads to inaccessibility of the Government schemes at their working place. To make it effective, Portability of the scheme is highly necessary. "One Nation One Policy" movement is necessary in coordination of all the State Government and Central Government.

(ii) Most of the migrant labourers are unable to access the health and educational benefit at their working place because of the language problem. It is necessary to create one post of "Language Converter" who will be appointed at such place where migrants are accessing the medical and

educational benefit. The work of the language converter will be to bridge the gap between the migrant and the policy executor.

(iii) Strict vigilance measures are necessary for the effective implementation of the existing schemes.

(iv) Most of the Migrant labourers are not covered under the Insurance schemes. So Government should take necessary steps for including the migrant labourer in the insurance scheme.

(v) Most of the migrant labourers are not covered under the social security measures. So it needs the cooperation of the Government and other private organisation to take necessary steps for including them in different Social security schemes.

(vi) Complete databases of all the migrant workers are necessary.

#### **CONCLUSION:**

Keeping in mind the contribution of migrant workforce in India economy, government has been aptly implementing a good number of schemes for their inclusion in the process of economic development and achieving SDGs. It is found from the analysis that migrant workforce in India are effectively accessing the food grains supplied, education facilities provided and health facilities catered by the government. However, to make all these facilities accessed by them with perfect appropriation of benefits, government needs to play its role in wiping out the bottlenecks like language barrier in the migrated places, improper database

of the migrant workers, immobility of schemes, intervention of the middlemen and no insurance of their lives. Making the migrant workers aware of the schemes and facilities is also equally important as sufferings of some of those are due to their ignorance. To facilitate a proper database of the migrants, each of the migrant workers needs to register himself/herself in his/her locality as a migrant. With the collaborative efforts of the government and the migrant workers,

achieving the 8<sup>th</sup> SDG, i.e., promotion of inclusive growth in a sustainable way by providing respectable job for all and the 10<sup>th</sup> SDG, i.e., scaling down the level of inequality across the globe both internally and internationally won't be difficult.

#### **Acknowledgments**

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**Table-1. Beneficiary under the scheme as on 27-10-2021**

Scheme	Number of Beneficiary	Number of Beneficiary in percentage
Indira Gandhi National Old Age Pension Scheme	24868475	73.57%
Indira Gandhi National Widow Pension Scheme	7574552	22.8%
Indira Gandhi National Disability Pension Scheme	1048461	3.11%

Source: Ministry of Rural Development, Government of India.

**Table-2. Beneficiary as on 27-10-2021**

Bank name/Type	Total Beneficiaries	Deposits in Accounts (in Crore)	Number of Rupay Debit cards issued to beneficiaries (in crore)
Public Sector Banks	34.53 crore	113826.42	27.18
Regional Rural Banks	7.96 crores	28004.37	3.38
Private Sector Banks	1.27 crore	4468.52	1.11
Total	43.76 crores	146299.31	31.67

Source: - pmjdy.gov.in/account

**Table-3. Number of Migrants accessing the banking facility:**

Yes	88
No	10
Unknown	02

Source: - Primary data

**Table-4. Reliability Statistics**

Cronbach's Alpha	N of Items
.729	9

Source: - SPSS Output

**Table-5. ANOVA output**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.622	8	3.328	26.360	.000 <sup>b</sup>
	Residual	11.488	91	.126		
	Total	38.110	99			
a. Dependent Variable: V9						
b. Predictors: (Constant), V8, V3, V1, V7, V4, V6, V5, V2						

Source: - SPSS Output

**Table-6. Regression Output Coefficients**

Coefficients <sup>a</sup>						
Model		Coefficients (Unstandardized)		Coefficients (Standardized)	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.241	.411		7.887	.000
	V1	-.155	.055	-.175	-2.807	.006
	V2	.513	.063	.997	8.208	.000
	V3	-.193	.080	-.278	-2.419	.018
	V4	.079	.068	.075	1.159	.249
	V5	-.016	.051	-.026	-.325	.746
	V6	.125	.056	.164	2.212	.029
	V7	.106	.078	.086	1.361	.177
	V8	-.149	.067	-.145	-2.224	.029
a. Dependent Variable: V9						

Source: - SPSS Output

**Table-7. ANOVA OUTPUT**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	sig.
1	Regression	28.034	10	2.803	24.761	.000 <sup>b</sup>
	Residual	10.076	89	.113		
	Total	38.110	99			
a. Dependent Variable: V11						
b. Predictors: (Constant), V10, V1, V6, V2, V9, V8, V4, V7, V5, V3						

Source: - SPSS Output

**Table-8. Regression Output Coefficients**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients	Standardized Coefficient		T	Sig.
		B	Std.Error	Beta		
1	(Constant)	2.821	.532		5.303	.000
	V1	-.145	.053	-.164	-2.717	.008
	V2	.497	.066	.966	7.542	.000
	V3	-.289	.086	-.415	-3.356	.001
	V4	-.071	.086	-.058	-.829	.409
	V5	.183	.068	.244	2.694	.008
	V6	-.093	.067	-.098	-1.388	.169
	V7	-.071	.047	-.112	-1.509	.135
	V8	.173	.057	.227	3.059	.003
	V9	.104	.062	.103	1.682	.096
	V10	.121	.060	.116	1.997	.049
a. Dependent Variable: V11						

Source: - SPSS Output

**Table-9. ANOVA OUTPUT**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.205	11	2.564	22.780	.000 <sup>b</sup>
	Residual	9.905	88	.113		
	Total	38.110	99			
a. Dependent Variable: V12						
b. Predictors: (Constant), V11, V8, V9, V4, V10, V6, V5, V1, V7, V3, V2						

Source: - SPSS Output

**Table-10. Regression Output Coefficients**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	sig.
		B	Std. Error	Beta		
1	(Constant)	3.140	.522		6.011	.000
	V1	-.079	.059	-.089	-1.328	.188
	V2	.491	.070	.955	7.064	.000
	V3	-.277	.085	-.399	-3.276	.002
	V4	-.055	.078	-.044	-.696	.488
	V5	.203	.067	.270	3.041	.003
	V6	-.121	.059	-.128	-2.030	.045
	V7	-.073	.048	-.114	-1.504	.136
	V8	.188	.056	.247	3.338	.001
	V9	.075	.061	.074	1.222	.225
	V10	-.093	.044	-.135	-2.141	.035
	V11	.023	.051	.032	.452	.653
a. Dependent Variable: V12						

Source: - SPSS Output

## **FIGURES**

**Figure-1. Migrant workers of different occupations working in different parts of India**

Source: - Primary data

**Figure-2. Educational Status**

Source: - Primary data

**Figure-3. Number of Migrants Registered**

Source: - Primary data

**Figure-4. Accessibility of different policy measures of the Government.**

Source: - Primary data

**Figure-5. Accessibility of different policy measures provided by the Government and private sector**

Source: - Primary data

## Antecedents and Consequences of Deviant Workplace Behaviour:

### A Conceptual Study on Literature Review

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### Abstract

**Purpose:** To study earlier researches done on deviant workplace behaviour and identify the antecedents and consequences of deviant workplace behaviour and finally draw propositions based on the literature review which can be empirically validated.

**Methodology:** This literature review has covered 150 research articles. The study mainly covered research works on antecedents and consequences of deviant workplace behaviour. Keywords which have been used to search the relevant articles are deviant behaviour, employees, deviant workplace behaviour. The relevant papers were considered in the study and others were excluded from the study.

This research has been conducted based on literature review. The concept of deviant workplace behaviour is quite old but awareness among the employees and the organisation is still not prominent. Concept of deviant behaviour is still theoretical but practical implementation of theories to increase positive deviant workplace behaviour and decrease negative deviant workplace behaviour is absent in the organisation. Since this research paper is based on qualitative analysis, quantitative analysis need to be conducted to validate the concept.

**Keywords:** Deviant workplace behaviour, employees, organisation.



## 1. Introduction

In the year 1995 Robinson and Bennett first coined out the term Deviant workplace behaviour . Deviant workplace behaviour is the behaviour that is shown by the workforce in the form of violating the norms of organisation which is harmful for the organisation . Workforce runs the organisations, and these workforces are made up of different people with distinct personalities. As a result, it is important to maintain a healthy psychological balance in order to acquire the desired behaviour and performance from them. These employees help to attain successful organisational output. Negative deviant workplace behaviour is portrayed by a shift in behaviour with a negative attitude. Toxic environment of the organisation gives rise to deviant behaviour . Negative deviance is harmful for the organisation and positive deviance is for better of the organisation which is shown voluntarily . Workforce is reluctant to accept and admit the negative deviant behaviour , so a study was aimed to identify such deviance through self assessment conducting a psychometric test where the deviance can be evaluated through self assessment of the workforce . There are different dimensions which drives deviant workplace behaviour in the organisation. These dimensions can be broadly categorised into three factors: Job satisfaction, Quality of work life and Organisational Justice. These dimensions are studied by several researchers and identified different parameters lying under each

of the factors. These parameters can be organisational culture, ethical climate, workplace spirituality, leadership style, organisational support, procedural justice, compensation, economic state of the nation, market demand, strategic challenges, self esteem, emotional stability, Machiavellian or psychopathic tendency etc. These factors drive the individuals towards negative deviant workplace in case of realisation of breach of contract from the employer's side, sluggish market environment and self intuition. There is a psychological contract between the employer and employee which can be formal or informal in nature. Negative deviance is traced in major cases where there is a breach of contract and dissatisfaction. Positive deviance is more traced where contract or agreement between employer and employee is maintained with trust and honesty. The author aimed at exploring deviant workplace behaviour based on the previous study under the three dimensions. The objectives of the study are:

- (1) To explore previous researches done on deviant workplace behaviour.
- (2) To study the antecedents and consequences of deviant behaviour.
- (3) To propose hypotheses based on the literature review which can be empirically validated in further study.

## 2. Methodology

This literature review has covered 150 research articles. The study mainly covered research works on deviant workplace behaviour which was initiated by job satisfaction, quality of

work life and organisational justice. The study mainly followed the concepts which have been drawn by and :

Identifying different factors which lead to deviant workplace behaviour.

Conducting a comprehensive search

Analysing the different factors which are affecting deviant workplace behaviour

Writing

And finally proposing hypotheses based on the study

Keywords which have been used to search the relevant articles are deviant behaviour, employees, deviant workplace behaviour. Relevant research articles were mainly taken from Emerald Journals, Taylor and Francis and Sage Journals. The relevant papers were considered in the study and others were excluded from the study. The articles which were studied were published in 1995 to 2021, and the research paper where concept of deviant workplace behaviour which was first published in the year 1995 by and later extension of the study by was studied to frame this review article.

### 3. Findings:

#### 3.1 *The history of deviant behaviour*

The term Deviance has been originated from sociology which means violating certain norms through some actions and behaviour. There are several theories drawn by the researchers of sociology in respect to deviant behaviour. The most prominent theories are: Merton's Strain Theory, Gresham Sykes and David Matza's neutralization Theory, Frank

Tannebaum and Howard S. Becker's Labeling Theory, Cesare Lombroso's Theory of Biological Deviance. Dimension of deviant behaviour which can stretch from minor versus serious and interpersonal versus organisational which affects the organisation's performance in respect to property deviance, production deviance, political deviance and personal aggression . Property deviance is unethically using organisation's property, production deviance is hampering the productivity of the organisation, political deviance is introducing politics within the organisation and personal aggression can vary from verbal abuse to sexual harassment. The study later concluded that toxic organisation thrives for deviant workplace behaviour which is again a result of toxic people, so a thorough background check is recommended before selection an employee. Ethical climate and organisational climate are influenced by ethical leadership which increases employee commitment as a result organisation experiences positive deviant workplace behaviour .Ethical leadership is build with trust which when gets violated it gives rise to authoritarian leadership with a consequence of negative deviance . The researcher has examined and concluded that supervisory guidance and behavioural integrity increases organisational citizenship behaviour and positive deviant behaviour in the organisation. In organisation Supervisory support motivates the workforce and pay equity gives them treatment of equality in terms of compensation which gives positive correlation with workplace deviance.

Linking to supervisory support and organisational support the researcher said bureaucracy practice of organisation strives towards organisational deviance and interpersonal deviance. studied and concluded that nice and fair that is the main protocol to maintain deviant behaviour. The researcher has examined and concluded that supervisory guidance and behavioural integrity increases organisational citizenship behaviour and positive deviant behaviour in the organisation. In organisation Supervisory support motivates the workforce and pay equity gives them treatment of equality in terms of compensation which gives positive correlation with workplace deviance. Linking to supervisory support and organisational support the researcher said bureaucracy practice of organisation strives towards organisational deviance and interpersonal deviance. Deviant behaviour is an outcome of psychological impact by the perceived organizational treatment towards the employees which comes out either with a positive deviance or negative deviance based on the perceived treatment. .

### ***3.2. Deviant behaviour***

Deviant behaviour is intentionally violating the rules and regulations of the organisation. Though it can be positive deviance as well and is voluntarily shown by the workforce. This positive deviance is for the betterment of the organisation. Negative deviant workplace behaviour has a negative consequence for the entire entity and the associates as a whole. studied about deviant work place behaviour and how it costs to the

organisation and concluded that non toxic organisational culture motivates the workforce towards positive deviant workplace behaviour. explored in his study that healthy behaviour, proper rules and laws, employee focus, personal ethics, self interest and efficiency defines deviant behaviour in the organisation. Followers get influenced with ethical culture in the organisation, thereby expecting positive deviant workplace behaviour. Performance of employees is influenced by compensation and organisational culture (Putri & Wardi, 2020). Hence it indicates ethical leadership, good organisational culture, fair compensation and job satisfaction influences positive deviant workplace behaviour. This positive deviant behaviour is the outcome of psychological contract, job security, fair treatment, ethical culture which altogether creates gives job satisfaction. Job satisfaction increases employee attachment and commitment. (Itzkovich & Heilbrunn, 2016) explored solidarity among employees reduces deviant workplace behaviour and incivility increases deviant workplace behaviour. Abusive supervision increases work family conflict which in turn initiates deviant workplace behaviour in the organisation (Aminah & Zoharah, 2013). This deviant behaviour is harmful to the organisation. The researcher also studied the contribution of work family conflict, abusive supervision and deviant behaviour in the engagement of employees towards deviant workplace behaviour. (Yadav & Rai, 2020) Different forms of deviant behaviour ranging from withdrawal of

job effort to abuse and violence affects the organisation both economically and psychologically. Researcher also identified emotional intelligence can act as a moderator of organisational stress and deviant workplace behaviour. (Di Stefano et al., 2019) Adhocracy and clan culture of organisation reduces the level of deviant behaviour. (R. Singh, 2020) Embeddedness predicts the organisation's as well as employee's performance. Cultural embeddedness of organisation helps the organisation to increase positive deviant workplace behaviour. (Abdallah & Abdallah, 2021) productive work behaviour can be achieved from flexible job and well defined job specification. (Enwereuzor et al., 2017) individuals with low agreeableness tend towards deviant workplace behaviour. (Agarwal & Avey, 2020) found psychological breach of contract is a moderating factor between abusive supervision and cyberloafing. It is also perceived that abusive supervision and psychological breach of contract induces cyberloafing. Deviant behaviour fetches impact on student's performance. It lowers down the performance with the attitudes of the teachers like taking frequent breaks, wasting time by gossiping, showing favouritism, provoking students against other teachers, verbal abuse and not completing the syllabus (Khan, 2017). Deviant behaviour overall impacts the performance of the organisation either in a positive way or in a negative manner.

#### ***4. Deviant Workplace Behaviour and Job satisfaction***

Job satisfaction is the extent to which

an individual is satisfied with his job content. Job satisfaction emphasizes an employee's right to have the freedom of thought, proper job content, stress free work life, and a proper job content (Pavitra Dhamija, 2019). Job satisfaction deals with psychology of the employees. This individual psychology can indicate satisfaction or dissatisfaction in respect to specific job. (Kura et al., 2019) explained that deviant behaviour is the consequence of psychology of individuals on breach of contract by the employer. Positive deviant workplace behaviour facilitates the proper flow of working in the organisation in influencing performance, profitability, goodwill, organisational climate with an extreme support extending to survival of the organisation. Job dissatisfaction comes from role ambiguity, improper career growth opportunity, gender inequality, unethical climate, faulty appraisal, improper grievance redress procedure. Satisfaction in the workplace motivates an individual which drives a person to attain certain thing. Satisfaction and dissatisfaction are driven by factors which are called motivation and hygiene factor respectively. The psychology of workforce with the trace of hygiene factor initiates deviant workplace behaviour in the organisation. The feeling of breach of contract from the employer side allows dissatisfaction among the workforce and act unnaturally or in an unacceptable manner. This dissatisfaction is shown by the act of production deviance, property deviance, political deviance and personal aggression. (Aboramadan et al., 2020) Servant leadership has a positive

relationship with employee engagement. Job satisfaction acts as a mediator between servant leadership and affective commitment. Increase employee commitment portrays positive deviant behaviour and enhances employee performance. (Sawalha et al., 2019) Job satisfaction acts as a moderating role in enhancing job characteristics and organisational citizenship behaviour. Hence the study concluded that job satisfaction moderates feedback, skill variety, and task identity, autonomy of job characteristics and altruism and courtesy of organisational citizenship behaviour. (Bashir & Gani, 2020) Educational institutes are human capital intensive. These institutes use practices to increase job satisfaction to retain the existing talent pool. Job satisfaction is found to be most significant contributor in retaining and motivating the employees. This motivation initiates positive deviant behaviour in the workplace. (Ashraf, 2020) job satisfaction and organisational commitment is influenced by compensation. Institutes can focus on fair justice and compensation to increase job satisfaction, organisational commitment and motivation. Increased motivation and employee commitment initiates positive deviance among the employees. Organisations focusing on this can increase the job satisfaction level and initiate positive deviant behaviour within the system. (Mahmood et al., 2019) There is a positive relationship with job satisfaction and remuneration strategies. Organisations focus on practices to increase job satisfaction which drives towards employee commitment and experience positive

deviant behaviour in the organisation.

#### *4.1. Job satisfaction and Leadership style*

Leadership style is the way and strategies which the leaders adopt to deal with his subordinates. The leadership style determines the success and unsuccessful of leaders. Successful leaders have a strong bonding with the followers who utilises them to perform the job. Acceptable leadership style is always welcomed and appreciated by the subordinates and provides job satisfaction. Servant leadership and work engagement is again mediated by job satisfaction. Job satisfaction drives towards positive deviance. (Mwesigwa et al., 2020) leadership style has a relationship with employee commitment and job satisfaction plays the mediating role. (Mickson et al., 2020) transformational and transactional leadership style has a positive relationship with both intrinsic and extrinsic job satisfaction respectively. Transformational leadership and intrinsic job satisfaction is mediated by organisational climate. Hence leadership has a significant relationship with job satisfaction which ends with deviant workplace behaviour. The deviance can either be positive or negative based on the leadership style and the respective possibility of job satisfaction or job dissatisfaction.

#### *4.2. Job satisfaction and Organisational culture*

The values and practices that guide the employees of the organisation are termed as organisational culture. (Dirisu et al., 2018) organisational culture

differentiates the organisation from its competitors and has a significant association with job satisfaction. Hence the researcher has drawn the managerial implications to focus on organisational culture and inculcate such values which can increase the performance of the employees. Matured management acts as a moderating factor for innovative culture and supportive management. This ultimately leads to employee job satisfaction and hence inclination towards positive deviant workplace behaviour. (Tran, 2021) Adhocracy culture positively affects job satisfaction. The theory of culture was basically divided into four types namely: hierarchy, adhocracy, clan and market. Clan and market culture has no significant relationship with job satisfaction. (Soomro & Shah, 2019) There is a positive relationship between organisational culture and job satisfaction. Job satisfaction has an association with organisational commitment. More job satisfaction leads to more commitment towards the organisation. This sums up with positive deviant workplace behaviour. Organisational spirituality plays a major role in building organisational culture. (Kökalan, 2019) Organisational spirituality decreases the organisational cynicism and enhances job satisfaction. Organisational spirituality again has a strong relationship with organisation justice. More spirituality in the organisation more is the organisational justice. Organisational justice again gives job satisfaction to the employees. This holistically gives rise to positive deviant workplace behaviour. (Lin &

Huang, 2020) Job satisfaction reduces employee turnover and increases performance. Learning culture in organisations moves the organisation forward through continuous learning procedure. Job satisfaction acts as a mediating role between organisation learning culture and job performance. Hence job satisfaction here defines the performance of the employee. Organisational culture derives the job satisfaction level which ends with deviant workplace behaviour. (Usmanova et al., 2020) Motivating language of the supervisor is the mediator between job satisfaction and knowledge sharing behaviour. Supervisory style is the outcome of organisational culture. It can be well concluded that organisational culture provides job satisfaction through supervisory style. (Nguyen, 2020) Knowledge sharing intention builds the organisational culture. This supportive culture moderates both intrinsic and extrinsic motivation. Motivated individuals bring positive deviant workplace behaviour. (S. K. Singh & Singh, 2019) Organisational culture should focus on organisational citizenship behaviour to enhance job satisfaction and increase performance through support. (Park & Doo, 2020) Organisational culture indirectly affects job satisfaction and human resource practices directly affect job satisfaction. The researcher concluded job satisfaction can be enhanced by aligning organisational culture and human resource practices. Hence organisational culture has a strong association with job satisfaction which ultimately initiates deviant workplace behaviour.

#### 4.3. *Job satisfaction Organisational support*

The perception of the employees about their well being, contribution, values, worth and requirements from the organisation explains the organisational support. Organisation support gives the individual job satisfaction. (Arasanmi & Krishna, 2019) Organisational support is necessary to attract, maintain and retain employees. The reason behind it is organisational support provides job satisfaction and increases motivation and ends up with positive deviance in the workplace. (Huning et al., 2020) Servant leadership is transmitted by organisational support with the help of job satisfaction. This servant leadership impacts the performance of the employees positively. This introduces positive deviant workplace behaviour. Apart from providing organisational support for employee well-being, it should also provide ample resources to maintain the employee well being of the employees (Roemer & Harris, 2018). (Maan et al., 2020) perceived organisational support and job satisfaction is weaker for less proactive individuals. Organisational support provides empowerment to the less proactive individuals and increase job satisfaction. (Kumar et al., 2018) Organisational support and development and job satisfaction is mediated by work engagement. Job satisfaction leads to motivation and organisational commitment through employee engagement. (Côté et al., 2021) Work engagement and job satisfaction is moderated by perceived organisational support. (Islam &

Ahmed, 2018) perceived organisational support and job satisfaction is mediated by self efficacy. Therefore it is concluded that there significant relationship between organisational support and job satisfaction.

Hence we can propose the proposition that deviant workplace behaviour has a significant relation with job satisfaction.

#### 5. *Deviant workplace behaviour and Quality of work life*

Quality of work life is the standard of life that an employee gets in the organisation. Dissatisfaction in respect to quality of work life gives rise to negative deviant workplace behaviour. Quality of work life has a strong association with work load and working condition (Nayeri et al., 2011). Again it is evident that quality of work life has a positive relation with job satisfaction and negative relation with turnover intension (Jabeen et al., 2018). Job satisfaction in respect to quality of work life motivates the individuals and hence reflection of positive deviant workplace behaviour. The mediating factor between workplace empowerment and employee commitment is quality of work life (Nayak et al., 2018). Satisfactory quality of work life enlightens and empowers the workplace and increases employee commitment. This indicates positive deviant workplace behaviour. Focusing strategic human resource management to increase job satisfaction can enhance quality of work life of employees (Qudah et al., 2019). There is a significant positive relationship of quality of work life and job satisfaction

and job security (Subbarayalu & Al Kuwaiti, 2019). Job security plays a major role as a psychological factor. Job satisfaction and job security psychologically impacts positively to the employees. This drives positive deviant workplace behaviour. Quality of work life has a strong relationship with strategic human resource management (Qudah et al., 2019). According to the change in the internal and external environment situation, organisation needs to modify each and every corner which impacts the quality of work life. So that the different factors responsible for maintaining quality of work life aligns with the requirements of the employees. Fulfilment of these requirements satisfies the employees which initiate positive deviant workplace behaviour. Incivility fetches a great impact on quality of work life (Itzkovich et al., 2020). Incivility grows in an unethical climate. It impacts psychologically to the employees negatively which might result in negative deviance in the organisation. Quality of work life has a strong association with the performance. Quality of work life can be boost up by the organisation by providing training to increase the self efficacy, reduce job burnout, and change in attitude (Li et al., 2020). These remedies will initiate positive deviant behaviour and a sharp rise of performance can be witnessed. Financial and interpersonal relationship need to be focused by the organisation to maintain the quality of work life so as to maintain the expected performance of the employees (Mohammadi & Karupiah, 2020). Constitution at organisation, working condition and social relevance

can reduce depersonalisation which can enhance the quality of work life (Permarupan et al., 2021). Quality of work life has a positive relationship with job satisfaction; it shares a negative relationship with job stress and positively related to job commitment (Aruldoss et al., 2021). Hence it is concluded that quality of work life has a significant relationship with working condition and stress.

### *5.1. Quality of Work Life and Working condition*

Working condition has a major impact on quality of work life and job satisfaction. Job satisfaction has a negative relationship with improper and unsatisfactory working condition (Pavitra Dhamija, Shivam Gupta, 2019). To maintain employee wellbeing it is important to have healthy and safety working condition (Chan & Wyatt, 2007). Quality of work life is impacted by working condition and has a with a strong association with it (Nayeri et al., 2011). Employees are affected by quality of work life with respect to working condition (R, 2015). Workplace empowerment increases the satisfaction which initiates positive deviant workplace behaviour with employee engagement and increase productivity. Employee engagement is increased by this psychological perception which increases the productivity and commitment of the employees towards the organisation. It holds a major role in establishing the quality of work life of employees. Satisfaction with working condition can result in increase in employee commitment,



employee engagement, increase in motivation, increase in performance and contribution and overall increase in performance of the organisation.

### 5.2. *Quality of Work Life and Stress*

To reduce stress regular exercise need to be focused in routine and remain satisfied with the quality of work life (Pavitra Dhamija, Shivam Gupta, 2019). Stress has a strong relationship with job satisfaction (Lewis et al., 2001). Reducing stress impacts quality of work life positively. Lesser stress leads to more satisfaction and peace of mind which enhances the performance of the employees. This escalates positive deviant workplace behaviour in the organisation.

Hence we can propose the proposition that deviant workplace behaviour has a significant relation with quality of work life.

## 6. *Deviant workplace behaviour and Organisational justice*

Three types of justice: organisational justice, procedural justice and interactional justice that mainly defines deviant workplace behaviour. Overall fairness perception indicates workplace attitude and behaviour in the organisation (Mohammad et al., 2019). Organisational justice has a significant positive relationship with employee commitment (Sharma & Kumra, 2020). Employee commitment is positive deviant workplace behaviour. Organisational justice induces workplace spirituality which has a positive relationship with mental wellbeing of individuals. Positive deviant workplace

behaviour has a positive relationship with organisational commitment (Pathak & Srivastava, 2020). Negative deviance in organisation will decrease employee commitment and more prone to employee turnover. Organisational justice has a strong positive relation with employee trust (Kutnjak Ivković et al., 2020). This employee trust increases commitment with positive deviant workplace behaviour. Organisational justice has a positive relationship with perceived supervisory support and supervisory competency (Nassar & Zaitouni, 2015). Organisational justice is indicated by the constraints and limitation of accessing benefits, perception about fairness of benefits and transparency of benefits of the employees (Jargalsaikhan et al, 2019).

### 6.1. *Organisational justice and Fair treatment*

Equal pay for equal work, fair appraisal process, equal treatment, fair promotion, fair decision making for training and development, respect for each other defines fair treatment in the organisation. Perceived organisational justice is obtained from fair treatment. Goodwill and image of the organisation is obtained from fair treatment (Said et al., 2017). Such organisations become employer of choice. Organisational citizenship behaviour is mediated by organisational justice with its three dimensions procedural justice, interactional justice and distributive justice mediates (Yuen Onn et al., 2018). Workplace outcomes from the employees are provided by overall fairness of the organisation (Sharma & Kumra, 2020). Perceived

organisational justice is created by fair treatment. Commitment and engagement are perceived by organisational justice.

### *6.2. Organisational justice and Employee participation*

Employee participation increases the motivational level of the employees by the organisation. Organisations are appreciated and preferred where employee participation in management decision making is allowed. Job satisfaction in respect to pay plans and compensation is obtained by employee participation (Lawler & Hackman, 1969). Money is a biggest motivator. Satisfaction with the compensation motivates the employees and helps the organisation to retain the existing talent pool. Employee participation has a strong positive relationship with organisational citizenship behaviour (Rosemary et al., 2017). Organisational citizenship behaviour is earned through employee participation which is positive deviant workplace behaviour. Thus we sum up that employee participation can be implemented in the system through proper HR policies. Employee perceives organisation justice through employee participation. Organisational justice drives them towards positive deviant workplace behaviour.

Hence we can propose the proposition that deviant workplace behaviour has a significant relation with organisational justice.

### *7. Deviant behaviour and Organisational performance*

Deviant behaviour is a matter of concern for the organisation to sustain

in this highly competitive market (Osibanjo et al., 2015). Negative deviance in behaviour comes from toxic organisation. It can be toxic supervisor, toxic organisation, toxic culture which affects employees as well as organisation (Appelbaum & Roy-Girard, 2007). The existence of toxicity affects the employees psychologically. Identification and elimination of toxic initiators can reduce the toxicity and minimise negative deviance and hence improving the performance of the organisation. Else organisation can get negatively affected and face economical loss. (Yadav & Rai, 2020) Different forms of deviant behaviour ranging from withdrawal of job effort to abuse and violence affects the organisation both economically and psychologically. (Aminah & Zoharah, 2013) abusive supervision increases work family conflict which in turn initiates deviant workplace behaviour in the organisation. This deviant behaviour is harmful to the organisation. The researcher also studied the contribution of work family conflict, abusive supervision and deviant behaviour in the engagement of employees towards deviant workplace behaviour. Therefore, negative deviant workplace behaviour is found to be harmful and a matter of concern as far as performance of the organisation is considered. On the other hand positive deviant behaviour enhances the organisational performance and increases organisational sustainability. Hence we can propose the proposition that deviant workplace behaviour has a significant relation with organisational performance.

### **8. Deviant behaviour and Competitive advantage**

Employees are the most valuable resource of the organisation. Retention strategy and its effective implementation becomes the competitive advantage of the organisation. This human capital with their positive deviant behaviour assists the organisation to achieve the goal and survive in this highly competitive market. Organisation need to focus on employee flexibility to increase organisational citizenship behaviour which increases organisational effectiveness (Pradhan et al., 2017). Outcome of HR flexibility becomes competitive advantage of an organisation. Organisation need to implement HR strategies in such a way that the employee become more passionate (Srivastava, 2012). This passionate employee remains committed and engaged in their work and hence contributes more to the organisation. This becomes the competitive advantage of the organisation. Educational institutes should use strategic decision making environment to establish sustainable competitive advantage. Beneficence to be adopted by the leaders and supervisors to increase trust in the organisation which is the competitive advantage for the organisation (Caldwell et al., 2014). Educational institute also strive to attain competitive advantage to survive in this highly competitive market. Strategic HRM can increase employee commitment towards the organisation. Employee commitment and human capital development acts mediation role to increase organisational sustainable competitive advantage (Hamadamin & Atan, 2019).

Hence we can propose the proposition that deviant workplace behaviour has a significant relation with competitive advantage.

### **9. Deviant behaviour and Employee performance**

Employees are the main resource who helps the organisation to achieve its goal. Decrease in employee commitment negatively impacts their performance. Existence of workplace incivility reduces the employee engagement as a result decreases employee performance (Wang & Chen, 2020). Performance of the employee depends on job quality, job condition, job satisfaction and job time (Na-Nan et al., 2018). Employee commitment has a negative relationship with deviant behaviour in the workplace (Pathak & Srivastava, 2020). HRM practices like reward system, job design, career development, employment security. Training and development, human resource planning, work life balance and employee participation can disable negative deviant workplace behaviour and increase positive deviant workplace behaviour (Malik & Lenka, 2020). Proper implementation of HRM practices can help in increasing employee commitment and productivity through employee engagement.

Hence we can propose the proposition that deviant workplace behaviour has a significant relation with competitive advantage.

### **10. Conclusion**

Deviant workplace behaviour is a serious concern for an organisation because of

its impact on the performance of the organisation. Especially for educational institutes which are neither profit earning or business oriented institution nor NGO. Educational institutes also have financial liabilities to meet and sustain. The main employees who are considered in the study are the teaching staffs. The teaching staffs belong to the highest respectable individuals in the society. These individuals carry a vital responsibility towards the society by educating the individuals living in the society. We know education is the backbone of a nation. Therefore

any compromise in education sector is neither accepted nor appreciated. Deviant behaviour in educational institutes carries more concern because it not only impacts the organisation but also the individuals who follow their path. Deviant workplace behaviour can either be positive or negative. Positive deviant behaviour is always expected by any institution. Now, after the extensive literature review we have come to the conclusion that deviant workplace behaviour is initiated by job satisfaction, quality of work life and organisational justice.

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## Stock Price Forecasting of Maruti Suzuki using ARIMA Model

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### ABSTRACT

Forecasting of stock prices is very important subject in financial world and economics it has created lot of interest among investors for many years to make better forecasting models. The ARIMA model short form of Auto Regressive Integrated Moving Average were used previously for time series forecasting. The present research paper shows the process of stock price forecasting of Maruti Suzuki Company using the ARIMA (Auto Regressive Integrated Moving Average) model. Historical stock data for analysis is obtained from National Stock Exchange (NSE) are used with stock price forecasting ARIMA model. It shows that result obtained in ARIMA model is better for short-term forecasting and can prove with existing methods for stock price prediction.

**Keywords:** Auto Regressive Integrated Moving Average (ARIMA model), Historical Stock data, Short term forecasting, National Stock Exchange, Stock Price.

### INTRODUCTION

Forecasting is very important field of study that makes researchers in this field always desiring to perform better from that of previously forecasting technique. Reason for that is institute and individual investors they are willing to make investment choice that requires the plan to build effective model for future decision. Forecasting stock price is regarded as very complex tasks to complete in financial forecasting

because of complexity of stock market. Many investors desire is to make any prediction model that could enhance their profiting and also minimize risk from investing in the stock market. For researcher it is an important factor to change and develop any required predictive models. For the past few years many models and process were developed for prediction of stock market prices. Artificial neural networks (ANNs) are one among them which are

very popular as its ability that it can predict patterns from historical data. Many works have been done using ANNs model for stock price prediction like hybrid approaches was developed to enhance stock price forecasting models by using the desired advantage from each of them.

ARIMA model is from statistical model perspectives. In literature there are two perspective of prediction which are statistical perspective and artificial intelligence perspective. ARIMA models is said to be powerful in financial time series data forecasting for short-term forecasting as compared to very popular ANNs model. It is used widely in economics and financial field.

The Auto Regressive Integrated Moving Average (ARIMA) model was introduced in the year 1970 by Box and Jenkins, and sometimes it is also termed as Box-Jenkin's methodology. It is a set of process to identify, estimate and diagnose ARIMA technique for time series data. ARIMA models are efficient for short term forecast. It also performs better than most complex structural model for short-time prediction. Future value in ARIMA is value of a variable and it linear summation of past values and past errors, which is expressed as follows:

where,

$Y_t$  is the real value and  $\epsilon_t$  is the arbitrary or random error at  $t$ ,  $\varphi_i$  and  $\theta_j$  are the coefficients,  $p$  and  $q$  are integer numbers that are regularly alluded to as autoregressive and moving normal, separately.

To fabricate ARIMA prescient model it comprises of many advances which are model to recognize, assessment of boundary and checking of indicative.

### OBJECTIVE

In present scenario investment in financial market is very important for the growth of economy. Due to limited analysis investment can result in loss. As of now investors mainly focus on fundamental data of the company for the investment. So, objective for this study is to forecast stock price of Indian market in order to make better investment decision.

### LITERATURE REVIEW

Aparna Nayak, M. M. Manohara Pai and Radhika M. Pai (2016) in the paper titled "Prediction Models for Indian Stock Market" stated that, for past few years, it is seen that many people are showing interest in investing in the stock market. In investing investor may lose all money invested. For this reason, efficient predictive model is required to understand stock market future behaviour. So many forecasting models have been developed about the market trend but very few give good results.

M.Z. Babaiet et al (2011) in the paper titled "Forecasting and inventory performance in a two-stages supply chain with ARIMA (0,1,1) demand" stated that, demand model for ARIMA (0,1,1) was analysed extensively by researchers. Forecasting practitioners use ARIMA widely as it has promising theoretical features. They analysed the correlation between the accuracy of forecasting and performance of

inventory. To investigate if there are any benefits of sharing forecast data to retailer and manufacturer.

Seyda Ertekinet (2019) in the paper titled "Improving forecasting accuracy of time series data using a new ARIMA-ANN hybrid method" stated that, it is important to forecast time series data it is also very challenging task. It is used in lot other field of application. Studies has been done on linear individually or a combination with nonlinear. To forecast stationary time series data linear model like ARIMA gives good forecasting accuracy.

The previous examinations additionally order forecasting models as per their imminent: factual and AI (Artificial Intelligence) approaches. Auto Regressive Integrated Moving Average (ARIMA) model connects with the statistical imminent. (Wang et al., 2012). ARIMA model is thought of as a proficient just as prevailing for time series anticipating. Numerous scientists showed that ARIMA method performs transient forecasts better compared to ANNs models. (L.C. Kyungjoo, Y. Sehwan and J. John, 2007), (Merh, P. Saxena and Raj Pardasani, 2010), (J. Sterba and Hilovska, 2010).

Ayodele A., Adebisi (2014) in their research paper depicted the limit of ARIMA model to give commonly exact passing assumptions regarding stock expenses.

Khan (2011) using ARIMA model with occasional patterns anticipated the complete imports of Bangladesh. The concentrate likewise thought about the

anticipated qualities in light of ARIMA with that of the determined qualities acquired from HES occasional model.

Adebayo et al (2014) forecasted securities exchanges for Botswana and Nigeria utilizing ARIMA. The paper presumed that best model is ARIMA (3, 1,1) for Botswana and ARIMA (1, 1, 4) for Nigeria separately.

Singh et al., (2020) used the ARIMA model to anticipate the spread directions as well as mortalities of COVID-19 in the main 15 nations as at April 2020. The review used the model to conjecture the spread of the infection and its related mortalities for the ensuing two months. The discoveries recommended a decrease in the two cases and related mortalities in China, Switzerland and Germany. Nonetheless, it was anticipated that nations like the United States, Spain, Italy France and the United Kingdom will observer expansions in the spread of the infection as well as its related mortalities (Singh et al., 2020).

## METHODOLOGY

Detailed process is explained below for ARIMA model. The tool used is Python for implementation of model. Daily historical Stock data are collected from NSE (National Stock Exchange) is used in this research work. The stock data has four constituents which are open, low, high and close price respectively. Closing price is used in this research It was selected because it shows all the events that happened on that particular trading day. Several experiments performed to examine the best ARIMA

model, following methodology was used.

#### **RESEARCH FRAMEWORK:**

The study is based on the stock price of company and forecasting of the stock price.

#### **RESEARCH DESIGN:**

The research design shows the methods and procedures for conducting any particular study. Analytical research design applied here as the objective here is to analyse and forecast stock price Maruti Suzuki.

#### **METHOD OF DATA COLLECTION:**

The secondary data is used to reach the aims and objectives of this project. The stock data for analysis was collected from NSE website.

The secondary data was collected from NSE website for past 4 years existed on the website in form of digital. I had chosen these sources because of the reliability and suitability of these information which I was also sure about the accuracy of them.

#### **RESEARCH INSTRUMENT:**

The research instrument, which is used for the study is daily closing price of the stock price of Maruti Suzuki.

#### **DATA ANALYSIS**

ARIMA stands for Auto Regressive Integrated Moving Average is a tool used to forecast stationary time series data. It takes three input parameter ARIMA (p, d, q).

p is used for Autoregressive.

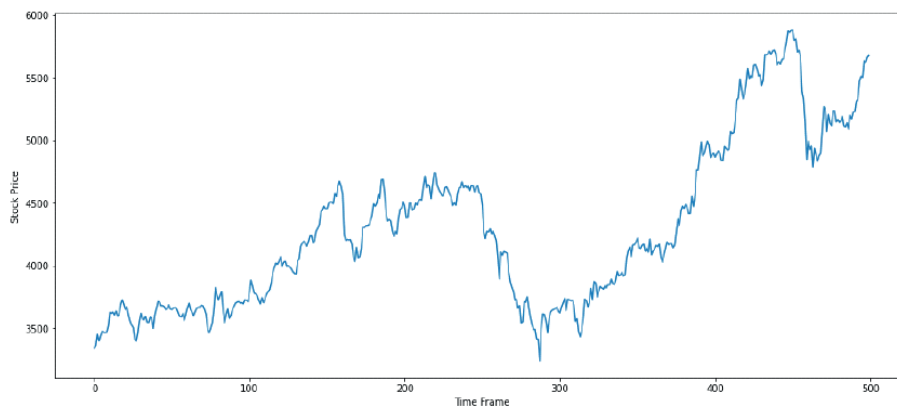
d is used for to make the time series data stationary.

q is used for Moving Average.

ARIMA is able to forecast stationary time series data.

Stationarity Mean: Stationary time series data is stationary when mean and standard deviation remains constant over time. It is required to check the stationarity of data, for this rolling mean and standard deviation is computed and plotted on original time series data.

It is evident from the graph (Fig 2) that



*Figure 1 Graph of Collected Data*

mean and standard deviation is not constant over time. So, it is required to make the data stationary. To do that, first-order difference of the data was

taken. In simple words, subtract today's price from yesterday's price and plotted again (Fig 3)

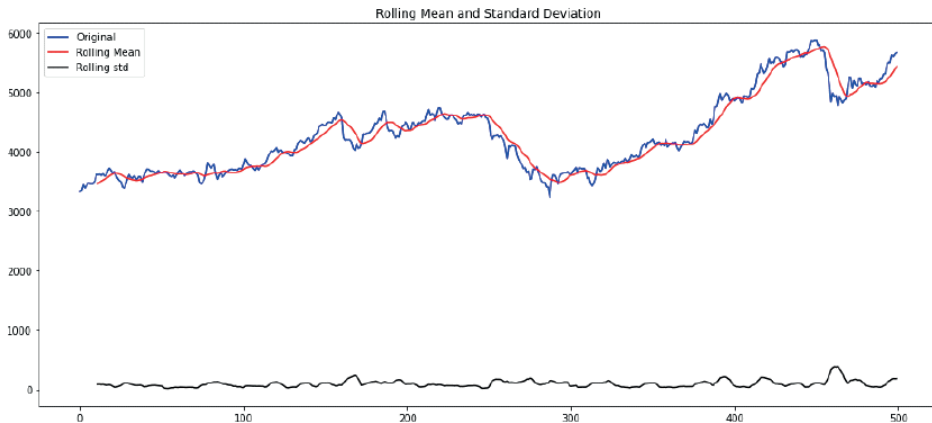


Figure 2 Mean, Standard Deviation and Original Data

From the below graph (Fig 3) it is evident that mean and standard remains

constant. Since stationarity is achieved by differencing one time the  $d$  term for ARIMA will be 1.

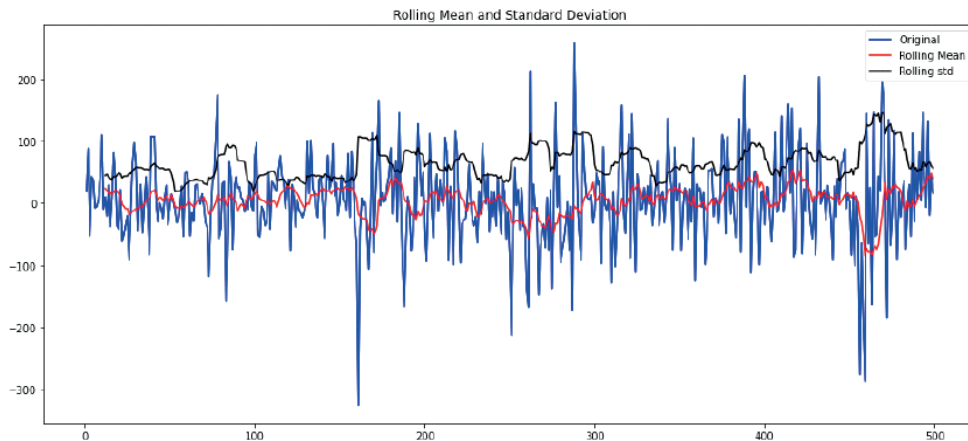


Figure 3 Mean, Standard Deviation and Differenced Data



ACF stands for Autocorrelation and PACF stands for partial autocorrelation plots are usually used for stock price analysis and forecasting.

It shows how strong or weak the observation in a time series with observations at prior time steps are.

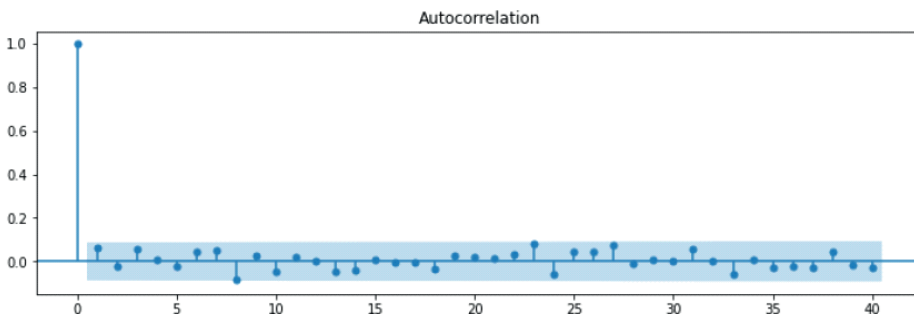
Autocorrelation is the connection between focuses at time  $t$  ( $P_t$ ) and the point at ( $P_{t-k}$ ). Fractional autocorrelation is the point at time  $t$  ( $P_t$ ) and the point ( $P_{t-k}$ ) where  $k$  is quite a few slacks. Incomplete autocorrelation overlooks

each of the information in the middle of the two places.

In simple words, Autocorrelation is the relationship between today's stock price and yesterday's stock price. Partial autocorrelation shows the relationship among today's stock price and the price which was a week before. Let's obtain the plots for Autocorrelation and Partial autocorrelation.

$p$  term for ARIMA is computed from autocorrelation plot (Fig 4), from the plot  $p$  term is taken that crosses the significance zone. So,  $p$  term is 8

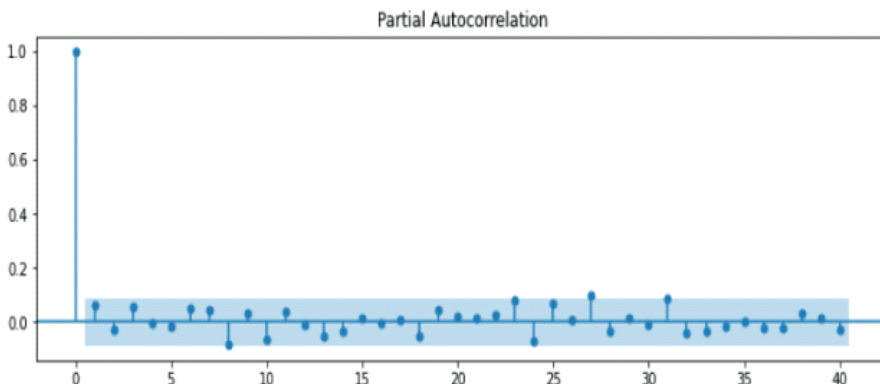
Figure 4 Auto Correlation Plot



$q$  term for ARIMA is computed from the plot  $q$  term is taken that crosses the partial autocorrelation plot (Fig 5), from the significance zone. So,  $q$  term is 8.

the plot  $q$  term is taken that crosses the significance zone. So,  $q$  term is 8.

Figure 5 Partial Auto Correlation Plot

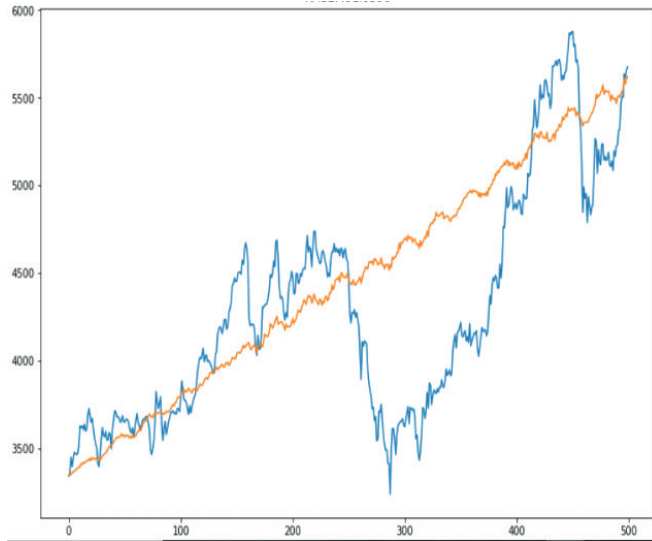


**RESULT & CONCLUSION**

For ARIMA (pdq) model the values obtained are  $p = 8$ ,  $d = 1$ ,  $q = 8$ . So, the

model is fitted for ARIMA (8 1 8) and result obtained is shown in Table 1 and plotted (Fig 6).

*Figure 6 Original data and Forecasted data*

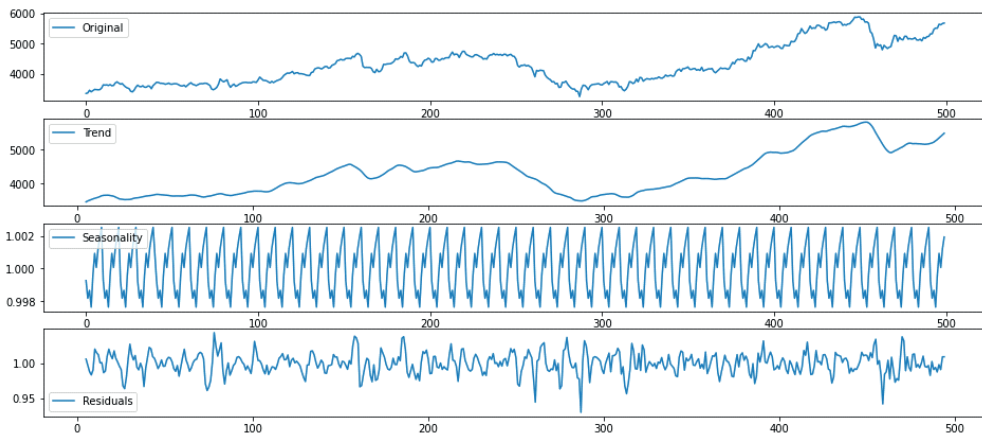


*Table 1 Original and Forecasted data*

Date	Original	Forecasted
01-01-2015	3340.75	3340.75
02-01-2015	3359.6	3345.301212
05-01-2015	3447.8	3350.69757
06-01-2015	3395.25	3360.127754
07-01-2015	3437.75	3360.905346
08-01-2015	3475.5	3370.026457
09-01-2015	3468.2	3373.658188
12-01-2015	3462.9	3379.478479
13-01-2015	3468.25	3387.753589
14-01-2015	3516	3388.728799
15-01-2015	3625.8	3393.229634
16-01-2015	3616.6	3410.628804
19-01-2015	3626.25	3406.133441
20-01-2015	3605.55	3419.079291

Original time series data is decomposed and plotted (Fig 7). It contains trend, seasonality and residual part of the original time series data. By comparing from the forecasted result, it is evident

that forecasted result contains the trend and seasonality part of the time series data and it least contains the residual part of the original time series data.



*Figure 7 Decomposition of Original Time Series Data*

To check the statistical accuracy for the forecasted result Root Mean Square Error (RMSE) and Mean Absolute Percentage Error (MAPE) are computed. The value of RMSE is 492.4 and of MAPE is 8.92% which is pretty good. MAPE of 8.92% indicate that our model is 91.08% accurate.

Analysis of Maruti Suzuki stock price for previous 5 years daily traded value on NSE gives us ARIMA (8,1,8) model. ARIMA (8,1,8) is used in predict the future values of Maruti Suzuki stock price. ARIMA (8,1,8) this model was selected which satisfies all criteria of statistics fit.

This paper explored wide process of making ARIMA model to forecast stock price of Maruti Suzuki. The potential of

ARIMA model shown from obtained experimental results. For profitable investment decision ARIMA could be helpful.

#### **LIMITATION**

There are some limitations in using ARIMA model to forecast time series data. This technique gives desired result only for short time. When sudden change in the data comes like when government changes policy or instability economic (structural break) etc. in that case it is hard to capture the change, so this model is not good to forecast in this period of time also forecasting with this model assumes that time series data is linear.

#### **FUTURE SCOPE**

Forecasting of stock price was done

using ARIMA model. Assumption for ARIMA is that time series data is linear, so implementing non-linear forecasting techniques using soft computing techniques can be considered with less white noise term.

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## **Financial Inclusion in India: A case study on State Bank of India**

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### **Abstract**

“Financial inclusion is a multi-faceted term with differing perspectives around the world. Because financial product requirements differ from person to person and country to country, (Kempson and Whyley, 1999; Regan and Paxton, 2003; Speak and Graham, 2000).” Financial inclusion is gaining traction as a new model of economic development that can help the country escape poverty. It tends to the development of new policy for banking services to the general public, both privileged and disadvantaged, on reasonable terms and circumstances. In the current context, it makes it possible to close the gap between the rich and the poor. Banking sectors are proved as one of the strongest supports for country’s progress, economic development and growth. The purpose of this research is to look at the impact of financial inclusion on economic growth over a period of 10 years ranging from 2007 to 2016. Secondary data collected from RBI website and SBI’s annual report has been evaluated using a multiple regression analysis as the major statistical technique. The present study has found that independent variables viz. number of SBI bank branches, SBI ATM growth rate and credit deposit ratio of SBI, overall have a significant impact on the dependent variable i.e. GDP growth of India. But individually, number of SBI bank branches have statistically significant impact on GDP growth, where as other two independent variables have no statistical significance on GDP growth.

**Keywords:** GDP, SBI, ATMs, Credit-Deposit Ratio, Bank Branches, Financial Inclusion

## 1.1 INTRODUCTION

India is a developing country having a population about 136.64 crore, which rank India as the world's second largest. Majority of population of the India are residing in rural areas and semi urban areas where their main source of income is agriculture and other related activities. People of rural area generally earn their wages on daily way basis. When they go to work, they will earn money, otherwise they don't. People of rural area are mostly uneducated or illiterate and they are hardly aware about the financial services provided in India. People of rural area mostly suffer from poor infrastructural facilities and they often face risk and uncertainties in their life. Majority of the financial institutions are focusing their business operations in commercial areas where there is infrastructural development and there is maximum chance of earning more profit. Financial institutions mainly focus on key customers and business concern for growing their business rather than focusing on under privileged people. So, the Government of India introduced a new concept known as "financial inclusion" in the year 2005.

## 1.2 FINANCIAL INCLUSION: JOURNEY OF INDIA

For the people of India, financial inclusion is not a new notion. For the past 44 years, it has been in India. Commercial banks were nationalised in 1969 and 1980, Regional Rural Banks were established in 1975, and reforms in banking sector were implemented

after 1991, resulting in an increase in the number of commercial banks in India. As per Economic Survey 2012-13 the number of commercial banks has risen to 8,262, in June 1969 to 1,02,342 in 2013 and the number of people per branch has decreased from 65,000 to 13,756.

In India, one of the major instruments for financial growth is financial inclusion. In comparison to other emerging countries, India has a low level of financial service coverage. In India financial inclusion got started in the year 2005 by K.C Chakraborty. He conducted a pilot study in Mangalam village in Pondicherry. That village went on to become India's first village to give banking services to all of its residents. Poor individuals were given General Credit Cards (GCC) to make it easier for them to get credit. As per the world Bank "Financial inclusion is the process of ensuring access to appropriate financial products and services needed by vulnerable groups such as weaker section and low-income group at an affordable cost."

## 1.3 FINANCIAL INCLUSION

"The Committee on Financial Inclusion of Government of India has defined financial inclusion as the process of ensuring timely access to financial services and adequate credit where needed by vulnerable groups such as weaker sections or low-income groups at an affordable cost."

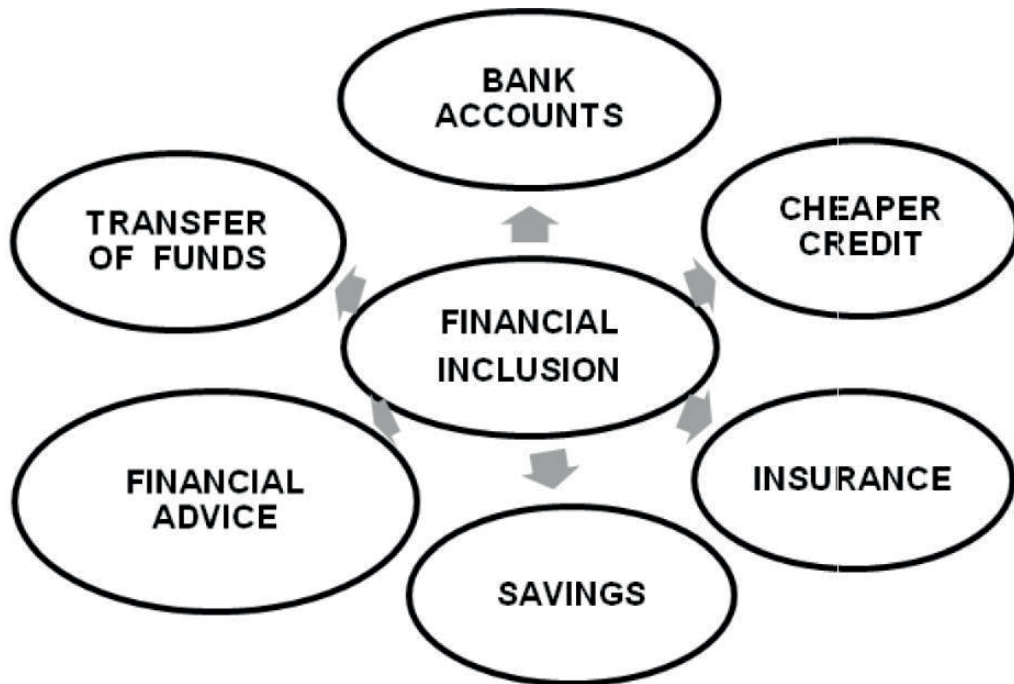
"According to Reddy (2007) financial inclusion consist of ensuring bank accounts to each household and offering their inclusion in their banking system."

“Lcyshon & Thrift (1995) defined financial inclusion as the process that serve certain social group individual from gaining access to the formal financial system.”

“According to Sinclair (2001) financial inclusion means the ability to access necessary financial products and

services in an appropriate manner.”

“According to World Bank, Financial inclusion is the process by which individuals and businesses can have timely access to financial products and services. Banking, equity, credit, insurance are the examples of financial products and services.”



It is helpful in maintaining a balance between surplus and deficit units and also helps in bringing the poor and

disadvantageous unit under the growth category. Crucial objectives of financial inclusion are:

Economic Objectives	Socio-Political Objectives
Equitable & Overall Growth	Poverty eradication
Savings' mobilisation	Achieve SDGs Goals
Large Markets for Financial System	Greater Social Inclusion
Effective directions of Government Programs	Effective directions of Government Programs

## 14 FIVE AREAS OF FINANCIAL INCLUSION

### (1) Banking:

Financial inclusion appertains to the provision of financial services to low-income members of society. Banking services are mainly for the general public but it is mandatory that these services will be made available to the general public without any discrimination. The basic goal of financial inclusion is to provide financial services to the economically disadvantaged members of society at a reasonable cost. Financial inclusion was emerged keeping in mind to provide banking services to each and every people in India. To make financial inclusion successful mostly in the rural areas both main-stream (SBI & Others PSU) and non-main-stream (Rural & Cooperative banks) must work with cooperation for the betterment of the people.

### (2) Providing credit:

Financial inclusion also provides cheap loans to the low-income groups for which they can easily access to these funds for live-hood. Providing credit is the main element of financial inclusion. The cost of credit is usually decided by

the lender's risk assessment. Generally financial inclusion considers the income, home ownership, credit history, age and other factors before providing loan to any people.

### (3) Insurance:

Insurance is a financial instrument that helps individuals to overcome shocks or loss that have occurred over the course of their lives. Insurance enables them to protect their life, health and other loss compensation products. Insurance helps lower income segment to transfer their risk they face and compensate their loss arising from any damages

### (4) Savings:

Savings are necessary for economic individual wellbeing and also provide strength to national economy. Without adequate savings individuals face a lot when they are unemployed or when there is a need of money.

### (5) Advice:

Advice can be extremely informal or general discussion on the basic financial questions.

## 1.5 BANK BRANCHES AND ATM NETWORKS IN INDIA TILL 31<sup>ST</sup> MARCH 2017

**Table No.1.1 Scheduled Commercial Bank Branches (Group Wise) as on 31st March, 2017**

Bank Group	Rural	Semi-urban	Urban	Metropolitan	Total
Public Sector Banks	29047	25862	19751	21556	96216
Private Sector Banks	5778	8744	5726	7461	27709
Foreign Banks	9	9	40	243	301
Regional Rural Banks	14982	4768	1639	442	21831



Small Finance Banks	88	116	99	107	410
Payments Banks	-----	-----	1	2	3
<b>Total</b>	49914	39529	27276	29821	146546

(Source: Reserve Bank of India)

The number of branches added by each bank group until 31 March 2017 has been revealed in the above table 1.1.

These banks comprise of public sector banks, private sector banks, foreign banks, regional rural banks, small finance banks, and payments banks.

**Table No. 1.2 Scheduled Commercial Bank Branches from 2007-08 to 2016-17**

Year	Rural	Semi-urban	Urban	Metropolitan	Total
2007-08	28740	18622	14756	16947	79065
2008-09	29255	19972	15871	18188	83286
2009-10	30145	21719	17453	19667	88984
2010-11	31450	24083	18495	20986	95014
2011-12	33813	26990	19970	22479	103252
2012-13	36782	29808	21171	23621	111382
2013-14	41953	32991	22829	25228	123001
2014-15	45209	35374	24376	26827	131786
2015-16	48336	38078	25971	28425	140810
2016-17	49904	39499	27256	29811	146470

(Source: Reserve Bank of India)

Table No. 1.2 shows the number of operating commercial bank branches from 2007-08 to 2016-17.

**Table No. 1.3 No. of ATMs in India as on 31<sup>st</sup> March, 2017**

	Rural	Semi-urban	Urban	Metropolitan	Total
Public Sector Banks	29033	25645	17890	18875	91443
Private Sector Banks	4822	7803	5158	6878	24661
Foreign Banks	9	9	39	231	288
<b>Total</b>	33864	33457	23087	25984	116392

(Source: Reserve Bank of India)

Table No. 1.3 displays the increase in the number of Automated Teller Machines (ATMs) in the country till 31<sup>st</sup> March 2017. Total number of ATM is 116392 till March 2017.

The most significant change occurred in August 2014, when the Pradhan Mantri Jan Dhan Yojana (PMJDY)

was implemented. PMJDY was created to establish faster access to a variety of financial products & services for excluded groups, such as basic savings bank accounts, inexpensive, remittances, need-based credit and insurance. Only by utilising technology effectively will such deep penetration be possible at a reasonable cost.

**Table No. 1.4 Progress of PMJDY till March 2017**

Bank Groups	New savings bank accounts opened	Deposit (in Rs. Million)	Debit Card issued (in million)
Public sector banks	254.9	652183	192.00
Regional rural banks	51.7	137171.30	35.90
Private sector banks	09.8	22682.30	08.21
Total	315.9	812036	235.9

In order to help bolster India's financial inclusion drive, all private & public sector banks have been recommended by the government to design a three-year financial inclusion plan (FIP), which will include data on branches opened

through business correspondents (BCs), bank branches in rural areas the number of General Credit Cards (GCC), the status of Kisan Credit Cards (KCC) and other factors. Table 1.5 indicates how far India's financial inclusion plans have progressed.

**Table No. 1.5 Advancement of Financial Inclusion Plan**

S N	Particulars	March 2010	March 2011	March 2012	March 2013	March 2014	March 2016	March 2017
1.	Rural locations-Bank Branches	33378	34811	37471	40837	46126	51830	50860
2.	Rural locations-Banking Outlets (Branchless mode)	34316	81397	144282	227617	337678	534477	547233
3.	Rural locations-Banking outlets (Total)	67694	116208	181753	268454	383804	586307	598093



2007	31029	2357.04	22099	2127.53	13254	3501.94	28060	11484.5
2008	33546	3231.32	24021	2559.98	14194	4305.92	35230	14072.8
2009	33823	3096.26	24793	3110.89	14750	4985.66	36690	17284.3
2010	37074	3851.5	27047	3678.59	16242	5936.15	38285	19985.5
2011	40018	3924.49	28772	4519.87	16896	7795.16	35038	24516.9
2012	41749	4422.12	31292	5282.89	17740	8548.68	40099	29779.0
2013	45703	5239.71	34621	6756.53	20924	9877.61	27038	33379.3
2014	48343	5667.05	39094	7177.64	25379	10614.7	25934	39361.4
2015	52777	6553.61	39526	7966.09	23777	11790.9	28160	42474.1
2016	57297	7357.83	44832	9363.28	28014	12965.8	32231	45539.6

(Source: RBI, Handbook on Indian statistics)

The above table indicates that, in 2007 the number of accounts in rural areas was 31029, having an outstanding credit of Rs.2357.04crores. While in case of semi urban, urban and metropolitan areas, the number of accounts was 22099, 13254 and 28060 respectively and their outstanding credit was 2127.53, 3501.94 and 11484.5crores respectively. It means though the rural area has

highest number of accounts still the credit is only 1/5<sup>th</sup> of metropolitan areas. It indicates inefficient mobilization of rural resources. The same trend continues till 2016. Hence the banking sector should provide more credit access to the rural areas otherwise even after the implementation of different policies, those areas will lag behind in different aspects.

**Table No. 1.7 Population Group-wise Deposit of Scheduled Commercial Banks**

Year	Rural		Semi-urban		Urban		Metropolitan	
	No. of Ac- counts	Amount Out- standing	No. of Ac- counts	Amount Out- standing	No. of Ac- counts	Amount Out- standing	No. of Ac- counts	Amount Outstand- ing
2007	149663	2530.14	132808	3573.95	113422	5325.92	123306	14540.43
2008	168034	3034.23	148361	4302.80	128021	6576.99	137241	18585.44
2009	199695	3639.1	169725	5297.58	142272	8229.14	150611	22053.99
2010	224155	4203.38	189457	6140.47	152323	9449.92	168934	25816.52
2011	250254	4932.66	212043	7168.31	168037	11105.13	179796	30689.41

2012	283072	5731.86	239951	8425.45	180626	12725.92	199551	33899.21
2013	335347	6698.89	283990	9791.94	203091	14970.13	222677	38665.25
2014	406624	7871.51	340522	11410.77	231521	17140.10	248043	43134.83
2015	493970	9156.76	404661	13172.51	266228	19649.01	275033	47242.83
2016	576171	10089.4	470711	14772.12	297715	21505.76	301519	49628.02

(Source: RBI, Handbook on Indian statistics)

As compare to the credit outstanding of scheduled commercial banks the deposit side is showing a very surprising result. As evident from the above table an inference can be drawn that though rural areas having more accounts but the amount of deposit is negligible as compared to the urban and metropolitan areas. This condition is still prevailing. By analyzing these facts even, a layman can say that such kind of situation is there only because the people of rural India are not confident enough when it comes to banking habits. Therefore, in order to eradicate this kind of problems, more financial literacy programs, overall education facilities, technical knowledge and investment awareness program etc. can be proved as a panacea for these problems.

## 2. LITERATURE REVIEW

Beck et al. (2000) attempted to empirically assess the link between financial intermediary development and economic growth. They discovered that the development of financial intermediaries has a beneficial influence on productivity growth, which leads to economic development institutional

agencies. Treasury (2004) stated that low-income persons, in particular, were unable to obtain financial goods, imposing significant costs on vulnerable group of people. "Financial inclusion may be described as the process of ensuring access to financial services and timely and enough credit where needed for vulnerable groups such as weaker sections and low-income groups at an affordable cost," according to the Rangarajan Committee on Financial Inclusion (2008). Financial services cover everything from savings to loans, insurance, credit, and payment. At a lecture on "financial inclusion for inclusive growth," Vijay Kelker, chairman of the thirteenth finance commission of the Government of India, stated that "financial inclusion is a quasi-public good because finance performs the important function of mobilizing savings, allocating capital, and transforming risk by pooling and repackaging it". Faster and more equal growth is facilitated by a well-functioning financial system. According to S. Vighneswar's (2011) "Financial inclusion: An evaluation of trend and progress," In India, there is a large gap

in the number of bank accounts between rural and urban areas, as well as in terms of population coverage per bank location, there is an uneven distribution of banking services. In order to increase financial inclusion, the government needs to adopt more policies and program. According to Bharadwaj (2013), "Financial inclusion for inclusive growth," people are becoming more integrated with banks as a result of the launch of various initiatives, and no-frill accounts are on the rise. Several institutions should hold financial literacy programs in order to improve people's basic knowledge of the country. In their work "Financial Inclusion for Inclusive Growth in India," Dixit and Ghosh (2013) discovered that states with low GDP per capita have poor financial inclusion, with the exception of Gujarat. He also came to the conclusion that there is no link between financial inclusion and unemployment. Sahu (2013) attempts to determine the link between socio-economic determinants and financial inclusion in India in her study "commercial banks, financial inclusion, and economic growth in India." She compared India's financial inclusion to the index of financial inclusion (IFI) by looking at three dimensions: banking penetration, banking services availability, and banking system utilisation. According to the report, no state in India falls into the high IFI category. Sharma, D. (2015) "*Nexus between financial inclusion and economic growth*" indicates that economic growth and many aspects of financial inclusion have a beneficial relationship. According to Iqbal & Sami

(2017), in India, there is a strong link between economic development and the financial inclusion indicator. GDP is a crucial metric for determining a country's progress. In their study "Role of Banks in Financial Inclusion in India," they discovered that number of bank branches and the credit deposit ratio have statistically significant impact on a country group's GDP. Dahiya, S., and Kumar, M. (2020) in their study attempted to link financial inclusion parameters such as credit deposit ratio, ATM growth rate, and bank branch count with the Indian economy in terms of GDP. The data support the existence of a positive and significant link between financial services usage and GDP per capita growth. Raichoudhury, A. (2020) in his paper "*Major determinants of financial inclusion*" revealed that the net state domestic product (NSDP), road length and presence of factories have a considerable impact on financial inclusion in India.

### 3. RESEARCH METHODOLOGY

#### 3.1 Relevance of the Study

In the 1950s, the All-India Rural Credit Survey was completed, then the concept of analyzing financial access became prominent. The survey's findings revealed that rural residents rely substantially on money lenders, a tendency that has persisted to this day.

As a result, robust financial institutions and an effective regulatory body are required for the nation's balanced regional growth. So that not only the residents of the city but also the people of the countryside can benefit.

### 3.2 Research Gap

Many researches are being conducted on financial inclusion initiatives from a theoretical standpoint, while other works on state-by-state magnification of financial inclusion have been discovered. The overall influence on Indian economic growth by financial inclusion, has been studied in a few research, with conflicting results. With these considerations in mind, the purpose of this research is to determine the current state of financial inclusion in India, as well as to assess the impact of financial inclusion on the country's economic growth, with an emphasis on the India's largest public sector bank, i.e. State Bank of India.

### 3.3 Objective of the Study

To look at the current state of financial inclusion in India with a focus on the banking industry.

To investigate the impact of financial inclusion indicators on GDP growth in relation to SBI.

### 3.4 Research Methodology

This section will outline the methodological techniques used to achieve the current research objectives. The current study used Gross Domestic Product (GDP) as a dependent variable and the number of SBI branches, SBI's Automated Teller Machines (ATM) growth rate, and SBI's credit deposit ratio as independent variables.

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Y = Gross Domestic Product

X1 = Number of SBI Bank Branches

X2 = ATMs Growth rate of SBI

X3 = Credit Deposit Ratio of SBI

On the basis of research objectives, following hypothesis has been developed:

H<sub>0</sub> The number of SBI branches, ATM growth, and credit-deposit ratio of SBI have no significant impact on GDP.

H<sub>A</sub> The number of SBI branches, ATM growth, and credit-deposit ratio of SBI have significant impact on GDP.

In order to prove the above hypothesis, following sub-hypothesis has been formulated:

H<sub>0</sub> 2 The number of SBI branches has no substantial bearing on the Indian GDP.

H<sub>A</sub> 2 The number of SBI branches has a substantial bearing on the Indian GDP.

H<sub>0</sub> 3 SBI ATM growth has no substantial impact on India's GDP.

H<sub>A</sub> 3 SBI ATM growth has substantial impact on India's GDP

H<sub>0</sub> 4 SBI's credit deposit ratio has no substantial impact on GDP.

H<sub>A</sub> 4 SBI's credit deposit ratio has substantial impact on GDP.

### 3.5 Data Collection

This research is developed on secondary data gathered from SBI's annual reports and the India's Handbook of Statistics released by RBI, as well as newspapers, research journals and magazines. Number of websites, such as the RBI and the IMF, were also used. The study's time frame is ten years, from 2007-08 to 2016-17.

### 3.6 Tools of Data Analysis

To achieve the study aims, the data is analysed using a variety of tools and methods. Correlation, multiple regression analysis, percentages, and ratios are examples of these. The application of these methodologies in various locations has been based on the nature and suitability of data provided, as well as the analysis requirements. SPSS was used to carry out these statistical analyses (version 16).

### 3.7 Scope of the Study

As SBI is the largest commercial bank in India, the dissertation is about the journey of India's financial inclusion, with a focal point on the banking industry and giving emphasis on SBI and making comparison of SBI with reference to, ATM growth rate, number of bank branches and Credit Deposit

ratio along with its impact on GDP growth.

The previous literatures taken ten years data are the minimum benchmark to analyze a time series data. With these supporting arguments the present study considers the time period from 2007-08 to 2016-17.

### 4. Data Analysis and Interpretation

According to empirical research, specific metrics must be defined in order to formulate effective policies on financial inclusion. "Experts from the World Bank, the International Monetary Fund, and a variety of other international organisations have identified some key markers of financial inclusion in a country's economy. The number of bank branches, ATMs installed, bank deposits, and bank credit are some of these broad indicators."

**Table No. 4.1: Number of SBI Branches during 2007-08 to 2016-17**

Year	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Number of SBI Branches	12475	12986	13333	14504	15146	15871	16918	17375	17836	18232

(Source: Annual Reports of SBI from 2007-08 to 2016-17)

Table No. 4.1 depicts the trend in the number of functioning SBI banks in

India. The graph clearly shows that SBI branches have been rising in number over the last ten years.

**Table No. 4.2: ATMs Growth of SBI during 2007-08 to 2016-17**

Year	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
ATMs Growth	4.55	2.34	4.82	4.77	10.25	22.74	50	4.14	0.67	-1.21

(Source: Annual Reports of SBI from 2007-08 to 2016-17)



The growth rate of ATMs across the country is depicted in Table 4.2. The SBI Automated Teller Machines in India are revealed as a measure of financial inclusion.

**Table No. 4.3: Credit Deposit (CD) Ratio of SBI during 2007-08 to 2016-17**

Year	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
CD Ratio	70.25	73.11	78.58	81	83.13	86.94	86.76	82.45	84.57	76.83

(Source: Annual Reports of SBI from 2007-08 to 2016-17 and RBI's Handbook of Statistics)

Table No. 4.3 depicts the credit deposit ratio throughout a ten-year period, beginning in 2007-08 and ending in 2016-17. The year 2012-13 saw a stunning increase of 86.94 percent, followed by a fall in 2016-17. (76.83 percent). In 2013-14 and 2014-15, the credit deposit ratio fell marginally.

Table No. 4.4: GDP of India during 2007-08 to 2016-17	
Year	GDP (In million)
2007-08	65928231
2008-09	68493429
2009-10	74301571
2010-11	81924894
2011-12	87363300
2012-13	92130200
2013-14	98013700
2014-15	105276700
2015-16	113861500
2016-17	121960100

Source: IMF, World Economic Outlook Database, October 2018

The Gross Domestic Product (GDP) is a widely used economic metric to determine a country's growth (Chithraand Selvam, 2013; Kamboj, 2014). Table 4.4 shows India's GDP during a ten-year period, from 2007-2008 to 2016-17. During these financial years, the GDP has been steadily increasing.

Table No. 4.5: GDP of India and Different Indicators of Financial Inclusion during 2007-08 to 2016-17				
Year	GDP (in million)	SBI Bank Branches	Growth of ATMs	Credit Deposit Ratio

2007-08	65928231	12475	4.55	70.25
2008-09	68493429	12986	2.34	73.11
2009-10	74301571	13333	4.82	78.58
2010-11	81924894	14504	4.77	81
2011-12	87363300	15146	10.25	83.13
2012-13	92130200	15871	22.74	86.94
2013-14	98013700	16918	50	86.76
2014-15	105276700	17375	4.14	82.45
2015-16	113861500	17836	0.67	84.57
2016-17	121960100	18232	-1.21	76.83

(Source: Compiled by authors)

Table No. 4.6: Correlations among GDP, SBI Branches, SBI ATMs and SBI CD Ratio					
		Gross Domestic Product of India	Total Number of SBI Branches in India	ATM growth rate of SBI	Credit Deposit Ratio of SBI
Pearson Correlation	Gross Domestic Product of India	1.000	.985	.070	.569
	Total Number of SBI Branches in India	.985	1.000	.205	.654
	ATM growth rate of SBI	.070	.205	1.000	.569
	Credit Deposit Ratio of SBI	.569	.654	.569	1.000

Source: Compiled by authors

Table No.4.6 indicates that correlation between GDP and number of SBI branches is .985, which indicates very strong relationships between two. Correlation between ATM growth of SBI

and GDP is 0.070, which indicates that both the variables are no way correlated. Correlation between credit deposit ratio and GDP is .569, it indicates a moderate relationship between two.

**Table No. 4.7 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.994 <sup>a</sup>	.988	.982	.01223	2.136
a. Predictors: (Constant), Credit Deposit Ratio of SBI, ATM growth rate of SBI, Total Number of SBI Branches in India					
b. Dependent Variable: Gross Domestic Product of India					

Source: Self-Compiled

The model summary of multiple regression analysis performed using SPSS 16 is shown in Table No. 4.7. The result shows the value of R to be 0.994, which means the dependent variable Gross Domestic Product (GDP) is having positive relationship with the three independent variables, viz. number of SBI bank branches, credit deposit ratio of SBI, ATM growth rate of SBI.

The value of R square is 0.988 or 98%.

value of more than 1 and less than 3 is free from autocorrelation problem. So, in the present study dependent variable (GDP) and its relationship with

It means that the model explains 98 percent of the variability in response data that is close to the mean. The R square indicates how well the model fits the data. Here, Adjusted R square is 0.982 or 98.2%. It indicates that, the independent variable improves the model fit more than expected by chance alone.

The value of Durbin-Watson test comes 2.136. As per the rule of thumb, the

independent variables (number of SBI branches, ATM growth rate of SBI and credit deposit ratio of SBI) is free from autocorrelation problem.

**Table No. 4.8 Result Summary**

Model	Unstandardized Coefficients		Standardize and Coefficient	t	sig	Col-linearity	H0 Accepted/ Rejected
	B	Std. Error	Beta			VIF	

1	(Constant)	-1.551	.332		-4.671	.003		Rejected
	Total Number of SBI Branches in India	1.567	.093	1.035	16.936	.000	1.880	Rejected
	ATM growth rate of SBI	.001	.000	-.120	-2.139	.076	1.591	Accepted
	Credit Deposit Ratio of SBI	.002	.001	-.039	-.532	.614	2.662	Accepted
a. Dependent Variable: Gross Domestic Product of India Source: Compiled by authors								

The above Table No. 4.8 indicates the p value of independent factors taken together to be 0.003 which is less than level of significance 0.05. This shows the independent factors all together have significant impact on GDP growth of the country. By analysing the independent variables individually, it is found that branches have a significant impact on Indian GDP growth and ATM growth rate and credit deposit ratio, individually have no statistically significant on GDP growth.

#### 4.2 Testing of Hypothesis

By analysing table No. 1.15, it is found that out of four hypothesis two hypothesis are accepted. The first hypothesis mainly (Alternative hypothesis  $H_A$ ) is accepted and the p value is less than 0.05. The second hypothesis mainly (Alternative hypothesis  $H_A$ ) is accepted

the p value of total number of SBI branches in India to be 0.001, (which is less than 0.05), ATM growth rate of SBI to be 0.076 (which is greater than 0.05) and credit deposit ratio of SBI to be 0.614 (which is quite greater than 0.05) at 5% level of significance respectively. This indicates that number of SBI bank and the p value is less than 0.05. The other two hypothesis are rejected means  $H_0$  accepted and  $H_A$  rejected.

As a general rule, VIF values more than 5 are not optimal and indicate multi-collinearity. As the VIF value of all impartial variables are less than 5, this regression model is free from multicollinearity.

We came up with the following regression equation:

$$Y = -1.551 + 1.567X_1 + .001X_2 + .002X_3 + e$$

The regression model reveals that the number of SBI bank branches have significant impact on GDP growth. Since my null hypothesis is accepted, basing on my hypothesis I try to find out the rural coverage of SBI to prove the financial inclusion carried out by SBI.

### 4.3 Conclusions

Financial education is especially important for persons in vulnerable groups in a country like India, which has a broad social and economic character. As a result, banks should realise financial inclusion as a commercial opportunity than a need. It must touch every part of society. Banks serve as a means of mobilising savings and allocating credit for production and investment in emerging economies like India. Banks, as a financial mediator, which contribute to the country's economic development by identifying and lending to entrepreneurs who have the best chance of launching new commercial operations. For this reason, the RBI and the government play a critical role in promoting financial inclusion in order to boost economic growth through increasing banking penetration, installing new ATMs, and implementing various initiatives around

the country. The Financial Inclusion Program (FIP) has been utilised by the RBI to assess the performance of banks participating in financial inclusion efforts. The new Financial Inclusion Plan is now more focused on transaction volume, which is critical for India's growth and development. The strongest link is seen between financial inclusion and the country's economic growth. The number of SBI branches has a positive considerable impact on the country's GDP, according to the current study, while two financial inclusion metrics, SBI's ATM growth and credit deposit ratio, have had a statistically insignificant influence.

### 4.4 Scope for Further Study

The data analyzed only for ten years from 2007-08 to 2016-17. The present study excludes the 2017-18 fiscal year data considering it as an abnormal year. During this period Indian banks are saddled with bad loans and government has made it a priority to lift banks out of non-performing assets crisis. These conditions may affect the performance of SBI. Further study can be made by considering 2017-18 financial year.

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## Microfinance: A Pathway of Success for Self Help Group

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### Abstract:

To bring the under privileged into the economic mainstream of nation, a financial architecture was needed with the objectives of providing small credit and mobilizing small deposits through an effective application of the mechanism.

A meaningful positive growth in GDP always assume to cater to the needs of the people as a whole. This gives birth to the concept of inclusive growth & gender equality which simultaneously conceptualized the SHG model.

Liberalization compelled to bring more women into the purview of different financial services sector & Microfinance concept has widely being getting momentum to bring a complete glory to the mission. Microfinance plays a pivotal role in involving women in different poverty alleviation activities and majority of these are going successfully in their mission.

In view of the above the present study has made an attempt to evaluate the influence of Microfinance activities in eradicating poverty among the rural poor through SHG model.

**Keywords:** *Financial Architecture, Underprivileged, Inclusive growth, Gender equality, Poverty alleviation.*

### 1. Introduction:

Towards the millennial goal of accomplishing the all-round socio-economic development of the down trodden financial inclusion and inclusive

growth has emerged as the recognized mechanism which set to be carried on by the vehicle like micro finance and micro credit.

As has been witnessed since its



evolution with a new vision and mission it strengthens the rural urban tie-up by creating employment facilities in rural areas through new business opportunities, self employment, and creation of SHG which provokes the migration from rural to urban areas to a substantial extent.

Microfinance as a multifaceted developmental instrument is characterized to cater to the needs of rural poor by providing small credit at a marginally lower interest rate with a diversified product portfolio in its basket in the form of micro credit for farming, credit to small business, and protecting the entrepreneurial interest by providing micro insurance.

Besides it accelerate the rural-urban connectivity by exploring business opportunity in rural areas through the capitalization of rural resources (human & non-human) which ultimately gave birth to the concept of self help group (SHG). This ultimately reduce the urban migration rate and develop an economic boom in rural landscape.

#### **Definition of Micro-Finance:**

Micro-finance as a word signifies the meaning as “Financial assistance and services to the deprived section of the society spread across rural, urban and semi-urban areas to ensure their better livelihood through self reliance.

#### **Micro-Finance and Financial Inclusion:**

With the execution of economic reform in 1990s, micro-finance as an effective channel vehicle of poverty alleviation

in rural and urban areas has set its ever shining relevance in establishing Empowerment is defined in combining two words needs of the under privileged.

#### **Micro-Finance and Financial Inclusion of Women:**

The initiative of inclusive growth, as a genuine planning process expected to knock the door of untapped women workers would have equally benefited along with the human resources occupying the driver seat otherwise it might have belied by actual grass root development.

#### **Concept of Empowerment:**

Empowerment is defined in combining two words “Awareness & Capacity Building” (A & CB) which results into own decision making power for transforming the way of life. As per “DFID” empowerment entails towards access to justice, imposing choice, exercising power & availing knowledge to showcase the individual potential by removing disparities.

#### **Problem of the Study:**

The growth of Microfinance in India has witnessed a huge regional disparity as two thirds of the sector being centered around in the southern region of the country, while east and north east is among the least evolved market of the country.

It is sad to state that when compared to other states in the eastern region, Odisha is lacking behind in the provision of microfinance products and services. only few years back some MFIs has become active in the state.

The pace of growth is accelerated with help of State Government, NABARD and other financial agencies along with innovative financial engineering model like SHG-BLP.

### **Importance of the Study:**

Since the advent free market economy participation of people across strata is vital for the economy as a whole. Microfinance is considered as a channel vehicle in this regard. Considering this, the study is of immense importance to prove the credentials of Microfinance in accomplishing financial inclusion and inclusive growth,

### **Objectives of the Study:**

The study has the following objectives to prove the mantle of microfinance in eradicating poverty through the participation of women.

- i. To evaluate the contribution of micro-finance towards economic empowerment of women.
- ii. To study the institutional activities of microfinance in augmenting women empowerment.

### **2. Review of Literature:**

Despite a long past evolution its literature has comparatively developed in the recent past but in a diversified manner. The focal point of literature is based on empirical study on the linkages between SHGs and microfinance and its ultimate impact on the living status of the inhabitants.

K. Manoharan Nair and Girija (2005) in their article, "Microfinance - The New Development paradigm for poverty

eradication and women empowerment", revealed the failure of various credit channels in achieving targeted poverty alleviation. This prompts them the advocacy of introducing microfinance schemes resulted a smooth transition in eradicating poverty and empowering women.

C.S. Reddy (2005) in his work, "self-help groups: A key stone of microfinance in India, states the evolution of microfinance institution in various forms and SHG is one of these, conceptualized with saving-lending model and deriving a promising outcomes for alleviating poverty on a sustainable basis.

Soundarapandian (2006) in his paper, growth of SHGs and the role of microfinance in developing the rural entrepreneurship has revealed a positive growth of SHGS in states but emphasizing an uniform practice between states of India in terms of SHGs. He also pointed the Bank SHGs linkages an impossible affairs. Kalavat Kamble and Gangadhar B. Sonar (2006) in his work, "The Role of SHGs in Women Empowerment study on selected SHGs promoted by voluntary organization in Gulbarga District of Karnataka" Have observed that there is a significant improvement in the socioeconomic status of women despite having with diversified backgrounds. They started to expose to the society by conducting meeting interacting with Government agencies and specifically they are healthy maintaining the right amount of liquidity in themselves. The SHG model have attracted younger women who have relatively more assertive capacity,

free from atrocities and a mere claimant of self-sufficient human beings.

Swain and Wallentin (2007) studied Self Help Groups in 5 states (Orissa, Tamil Nadu, Andhra Pradesh, Uttar Pradesh and Maharashtra) and during the study it has been revealed that there is a remarkable development of women empowerment in these states but with varying degrees. SHG women have empowered with a higher degree compared to non-SHG women as per the study.

Rajagopalan (2009) studied micro finance in Africa. the study revealed that African countries have occupied the back benches in exercising the microfinance platform for its poverty alleviation programme in comparison to rest of the world, despite a phenomenal growth trend during the recent past.. Micro finance in Asia is the largest both in terms of MFIs and outreach. The Asian countries are in top in capitalizing the microfinance platform the concluding remarks in his study has stressed the need to encash the microfinance platform for alleviating the chronic diseases of poverty by the African nations.

IIPO Economic Intelligence Unit (2010) in its studied “self-help groups (SHG): means of women empowerment”, concluded the essence on the growth of SHGs for empowering the women their by dismantling gender discrimination and accomplishing a growth oriented society.

Reeta Rautela, Gaurao Pant and Other (2011) in their study “Microfinance - A

New mantra for rural development”, –states that though microfinance has emerged as a power full tools in eradicating poverty , it should not be confined within the quantitative aspects of reaching to people rather its qualitative assessment in respect to evaluating the transformational impact on the lives of beneficiary should be made.

### 3. Methods & Data Collection:

#### Sources of Data:

(a) **Secondary Sources:** To explore some population related data the study was used census report of 2011 and 2001 besides exploring data from research books, journals, and internet.

(b) **Primary Sources:** To collect some vital primary information a field survey through structured questionnaires was made which satisfy the basic purpose of the study.

#### Sample Size:

To study the impact of microfinance a field survey through structured questionnaire was made in two blocks of Cuttack district in Odisha. Twenty-five SHGs were interviewed with the purpose of evaluating their financial status before taking microfinance assistance and after taking microfinance assistance.

**Periods of Study:** A time period of three financial year has been taken for the study to satisfy the objectives of the study.

**Statistical Tools:** To analyze the obtained data statistical tools like ‘t’ test

for evaluating the coefficient correlation and to test the autonomy among different variables a simple descriptive statistics have applied..

**Variables:** The study has taken three variables while analyzing the impact of microfinance on the financial status of SHGs. The variables are as follows;

$V_1$  = Average Monthly Income of SHG Members.

$V_2$  = Average Capital Position of SHG Members.

$V_3$  = Average Asset Position of SHG Members.

**Hypothesis:**

$H_{01}$ : Micro-finance assistance and Average Monthly Income of the member of SHGs are independent of each other.

$H_{02}$ : Micro-finance assistance and Average Capital Position of SHGs are independent of each other.

$H_{03}$ : Micro-finance assistance and Average Assets Position of SHGs are independent of each other.

#### 4. Analysis & Interpretation:

**Table-1**

Analysis & Interpretation of Co-relation Matrix Before Availing Microfinance Assistance				
		AMI-BMF	A.Cap-BMF	AAP-BMF
Avg. Monthly Income-Before Micro Finance	Pearson Correlation	1	.077	.384
	Significance (2tailed)		.746	.115
	N	25	25	25
Avg. Capital Position -Before Micro Finance	Pearson Correlation	.077	1	.194
	Significance (2tailed)	.746		.412
	N	25	25	25
Avg. Asset Position Before Micro Finance	Pearson Correlation	.364	.194	1
	Significance (2tailed)	.115	.412	
	N	25	25	25



AMI-AMF AMI-BMF	2862.65	1242.40	281.25	1987.88	3027.12	11.32	24	.05
ACP-AMF ACP-BMF	31550	12654.36	2728.75	21351.99	30648.01	12.46	24	.05
AAP-AMF AAP-BMF	41735	10543.65	2115.25	31098.89	38601.11	19.79	24	.05

### Analysis Made through the Application of SPSS

#### Interpretations

**Assumption -1:** Micro-finance assistance and Average Monthly Income of the member of SHGs are independent of each other.

**Null Hypothesis (H0):** There is no influence of microfinance assistance over the income of the members of SHG group.

**Alternative Hypothesis (H1):** There is substantial influence of microfinance assistance over the income of the members of SHG group.

**Average Monthly Income:** The observation from table—3 revealed that the average monthly income of the members of the sample SHGs has improved significantly after obtaining micro-finance assistance. The calculated value of 't' is 11.32 at 5% level of significance with 24 degree of freedom and the critical value of t is 2.064. Therefore the null hypothesis is rejected and we come to the conclusion that microfinance assistance has significant influence on the monthly income of members of SHGs.

**Assumption II:** Micro-finance assistance and Average Capital Position of SHGs are independent of each other.

**Null Hypothesis (H0):** There is no influence of microfinance assistance over the average capital position of the SHGs.

**Alternative Hypothesis (H1):** There is substantial influence of microfinance assistance over the average capital position of the SHGs.

**Average Capital Position:** The observation from table—3 revealed that the average capital position of the SHGs has improved substantially after obtaining micro-finance assistance. The calculated value of 't' is 12.46 at 5% level of significance with 24 degree of freedom and the critical value of t is 2.064.

Therefore the null hypothesis is rejected and we come to the conclusion that microfinance assistance has significant influence on the average capital position of SHGs.

**Assumption III** Micro-finance assistance and Average Assets Position of SHGs are independent of each other.

**Null Hypothesis (H0):** There is no influence of microfinance assistance over the average capital position of the SHGs.

**Alternative Hypothesis (H1):** There is substantial influence of microfinance assistance over the average capital position of the SHGs.

**Average Assets Position:** The observation from table—3 revealed that the average asset position of the SHGs have improved significantly after obtaining microfinance assistance. The observed value of  $t$  is 19.79 at 5% level of significance with 24 degree of freedom and the critical value of  $t$  is 2.064. Therefore the null hypothesis is rejected and we come to the conclusion that microfinance assistance has significant influence on the average asset position of SHGs.

#### **Findings:**

After analyzing the collected data by applying the above mentioned statistical tools the present study has revealed the followings:

The average monthly income of the members of SHGs have witnessed a healthy improvement during the study period after availing microfinance assistance.

The average capital position and average asset position of the SHGs have influenced significantly by microfinance assistance during the period of study.

#### **Conclusion:**

In the concluding remarks it is the obvious feeling that micro-finance act as a vehicle to transform the economic fortune of the rural masses especially the women and micro credit ensures a sea change in the mission of financial inclusion and inclusive growth.

Being bridging the gap of development, both in rural and urban areas. It has to overcome the obstacles of governmental and bureaucratically complexities and at the same time it has left no stone unturned to ensure micro-credit as a human right.

Despite having different models of microcredit the onus always lies with the governance model to accomplish the outcome of all-round development through micro credit of the marginalized masses.

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## **Impact of Gender And Age of Professional Employees On Their Emotional Intelligence Level**

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### **ABSTRACT**

An emotionally intelligent employee will deal with his client in an efficient manner focusing on best customer experience. Now a days, intelligence quotient and emotional quotient are simultaneously considered as very crucial trait in professional employees. Emotional Quotient is nothing but a measure or score of emotional intelligence. Emotional intelligence has become an important predictor of various aspects of employee's performance at work. This article examines the impact of age and gender of professional employees on their emotional intelligence level. 100 professional employees were randomly selected from various organization in Lucknow. Schutte Emotional Intelligence Test formulated by Dr. Nicolas Schutte is research instrument adapted to record emotional intelligence level of participants. Analysis of result helps in summarizing that age of professional employees do not have significant impact on their emotional intelligence level whereas gender of professional employees has a significant impact on their emotional intelligence level.

### **Keywords:**

Ability model, age, emotional intelligence, professional employees, schutte emotional intelligence scale.

## 1. INTRODUCTION

Emotions are an inseparable part of our biological makeup. Emotion refers to set of heterogeneous feeling that are based on significance we assign to our sensory experience such experience can be personal as well as social. There are around 3000 words that describe our emotions but still there are many emotions which cannot be described with the help of words. Intelligence refers to capacity of an individual to understand, critically think and act rationally so as to adapt effectively to our social environment. In 1985 Wayne Payne articulated the term emotional intelligence in his doctoral thesis. In 1990, Peter Salovey and John. D Mayer conceptualized the term by presenting a framework of emotional intelligence. The term emotional intelligence came into limelight in 1995 when Daniel Goleman published a book named "Emotional Intelligence: Why it can matter more than IQ." Emotional intelligence includes ability of an individual to perceive, use, influence, understand, monitor, recognize, and manage emotions in our self and others so as to effectively communicate, empathize with others and overcome challenges in life. Emotional quotient can be measured by performing a series of test encompassing questions related to emotional intelligence.

"Emotional intelligence is an array of non-cognitive abilities, competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures" (Bar-On, 1997). "Emotional intelligence is

observed when a person demonstrates competencies that constitute self-awareness, self-management, social awareness and social skills at appropriate time and ways in sufficient frequency to be affective in the situation" (Boyatzis, Goleman and Rhee *et al.* 1999). Peter Salovey and John D Mayer define emotional intelligence as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions." It is seen as cognitive ability and focuses on perception and management of emotions and using such information to guide our thinking, behaviour and decisions. According to Ability model, emotional intelligence has emotional abilities from four branches which can be classified as:

1. Perceiving emotions: It is considered as the most basic aspect of emotional intelligence. It involves identifying and differentiating between different kinds of emotional expression in physical state, artwork, feeling, thoughts and languages. It is the ability to become self-aware in regards to emotions.

2. Facilitating thoughts using emotions: It include using, comparing and identifying emotions that are affecting our behaviour in such a way to accelerate thoughts and to guide selective attention. Emotions should be used in a way to consider things from different point of views.

3. Understanding emotions: An individual's problem-solving capacity is systematically affected by one's mood and emotion, so understanding

emotion is very essential. It includes understanding, labelling or naming different kind of emotions and understanding relationship between different emotions.

4. Managing emotions: It include evaluating, managing and manipulating emotions within ourselves and that of others in order harness moods to achieve desired result. Identifying and using emotional strategies best suited in particular situation. Effectively managing emotions is essential in order to attain goals.

Emotional intelligence level can be measured with the help of test like self-report test and ability test. Almost every dimension of our lives like influencing our thoughts and moods, determining our behavior, our feeling towards ourselves and others, our interpersonal communication, dictating decision making process, our attitude toward resolving conflict and our stress management capacity etc. is significantly affected by our emotional intelligence level. Happiness and success of an individual is greatly determined by their emotional intelligence. Being emotionally intelligent does not mean you have to be polite or soft-spoken all the time but it means handling emotions in an effective way. Emotional quotient is profoundly important as intelligence quotient is in determining success of an individual. Being emotionally intelligent means ability to handle once own and others' emotions in an intelligent manner. Now a days intelligence quotient and emotional quotient are simultaneously considered as very

crucial trait in professional employees.

In last two decades a lot of things have changed at workplace like nature of work, management style, work environment, criterion for hiring, implementation of technology and innovation in various fields of organization. Nowadays employee's success at workplace is not only measured by their performances but also by their ability to effectively handle themselves and one another. According to study in UC Berkeley emotional intelligence is four times more powerful in predicting individual's success in their field. Emotions influence our professional connections at work. Emotionally intelligent employees help in creating healthy work environment in the organization. Efficiency, productivity and job performance is enormously affected by emotional intelligence. There are few qualities of emotionally intelligent employee like listening, reflecting and responding to constructive criticism, being optimistic, making better decision, resolving conflicts, fostering stability, maintaining calm under pressure, keeping oneself and others motivated, adaptive to changed circumstances and having greater degree of empathy which are essential for succeeding in life irrespective of their qualification and dedication towards their work (Cherry, 2020). Lack about awareness of emotions and knowledge about management of emotions among employees may lead to stress, loss of productivity and lack of morale.

Emotional quotient is a term that is gaining ample of attention in this contemporary and volatile business

environment. Both employee and employer are becoming aware about the concept of emotional intelligence. The primary valuable asset for any organization is its human capital i.e., employees. Earlier customer/ client satisfaction was the sole moto of organization, but nowadays emotional wellbeing of its employees also plays a crucial role in growth of any organization. “Emotional Competence is a learned capability based on emotional intelligence that results in outstanding performance at work” (Goleman, 1998). The importance of emotional intelligence at work place can be determined by the fact that it is seen as an important competency at the time of hiring, promotion, factored in decision regarding pay rise and leadership potential of employees (Arora, 2017). Being a professional employee is a tedious work, in order to become professional, one has to go through extensive training, learn certain principle on which their profession is based, follow a code of conduct and then implementing their knowledge in order to provide efficient services to their clients and organizations. It has been seen that client choose those organization for hiring professional services with whom they had good experience in past.

The relationship between various demographic factors and emotional intelligence among different employees have been studied, explored and examined in various studies but there is dearth of research on impact of gender and age on emotional quotient

of professional employees. Keeping in mind the importance of emotional intelligence among professional employees and changing nature of demographic composition at workplace, the research topic has been chosen, it will be of great significance for all those working in professional sector. The reason for examining impact of age and gender of professional employees on their emotional intelligence level is to have a clarity that whether these demographic factors should be taken into account by organizations which are incorporating emotional intelligence in their recruitment and hiring policies; to know that is there any need of gender and age specific policies in emotional intelligence training workshop/ sessions; there is moral reason to ensure that employees of specific gender and age are not at disadvantageous position as compared to their counterparts in terms of emotional intelligence.

## 2. REVIEW OF RELATED LITERATURE

(Uslu, 2020) investigated how demographic factor are related to emotional intelligence of public employees of various sectors by administering Wong and Law emotional intelligence scale. It was concluded that demographic factor like employee's age is not associated to emotional intelligence whereas gender is associated to emotional intelligence level of employee.

(Gautam and Khurana, 2019) studied about various demographic variables as indicators of emotional intelligence

in Uttarakhand. The results revealed that demographic factors like gender and age have positive relationship with emotional intelligence.

(Dhillon, 2018) conducted comparative study of emotional intelligence on gender and age differences where 60 students were grouped into two age group which include adolescents between 15–19-year-old and young adults between 20–24-year-old. Result indicated that significant impact of both age and gender of adolescents has been found on their emotional intelligence level.

(Mokhlesi and Patil, 2018) examined effect of gender on four dimensions of emotional intelligence and concluded that different dimensions (like identification of emotion, regulation of emotion, understanding of emotion and assimilation of emotion) of emotional intelligence among children is not significantly influenced by their gender.

(Pradeeba and Perumal, 2017) reported that emotional intelligence of bank employees in Madurai city does not increase with age. Younger employees are more emotionally intelligent as compared to older employees. It has been found that there is positive association between employee's level of emotional intelligence and their gender. Emotional intelligence training workshop should be conducted which would help in improving organizational performance.

(Pooja and Kumar, 2016) conducted study on finding effect of various demographic variables (like age, gender, work experience, management

level and educational qualification) on emotional intelligence among service sector employees from India. ANOVA and t test was used to understand association among demographic factors and emotional intelligence level of employees. Result showed a positive association between age and emotional intelligence i.e., as a person grows old their emotional intelligence level tends to increase. Employees of varying age group have different emotional intelligence level

(Yogun and Miman, 2016) wrote a research paper on emotional intelligence of employees working in hospitality industry with the aim to study influence of demographic factor on their level of emotional intelligence, the findings showed that there is no influence of age on emotional intelligence of employees. Employee's gender has an impact on self-awareness domain of emotional intelligence, whereas no impact of gender has been found on other domain of emotional intelligence. Female employees scored more on emotional intelligence (self-awareness domain) as compared to male employees.

(Nayak, 2014) tried to explain the impact of gender, age and culture on emotional intelligence level of 240 adolescents from higher secondary school of Odisha. It was reported that there is significant positive association between age of adolescents and their emotional quotient score. 2<sup>nd</sup> year students scored higher on emotional intelligence than 1<sup>st</sup> year students.

(Berrocal, Cabello, Castillo and

Extremera *et al.*, 2012) conducted study to know whether emotional intelligence among university student and adults is mediated by age or not? They concluded that age is a complete mediator for total score of emotional quotients, strategic score of emotional quotients and all dimension of emotional intelligence except for managing emotions.

(Alumran and Punamaki, 2008) concluded that emotional intelligence level of adolescents in Bahraini was significantly associated with gender but not with age of adolescents.

(Scott-Halsell, Blum and Huffman *et al.*, 2008) revealed that the relationship between socio demographic factor like age and emotional intelligence level of hospitality industry professional was not significant.

(Palmer, Gignac, Manocha and Stough *et al.*, 2005) administered MSCEIT in order to examine emotional intelligence score among adult. According to American Consensus and Expert Score there is negative relationship between age and score on faces dimension of emotional intelligence and positive relationship between age and score on management dimension of emotional intelligence. According to Australian Consensus and Expert Score there is positive relationship between age and score on the facilitation dimension of emotional intelligence.

(Atkinis and Stough, 2005) aimed at finding does emotional intelligence changes with age or not? Result showed that age is positively related to factors like emotional direct cognition and

emotional control but age does not have significant effect on factor like emotional management.

(Punia, 2003) in her study grouped the executives working in various organization of Delhi into 4 age group in order to examined impact of age on emotional intelligence of business executives. Finding showed that gender had significant impact on emotional intelligence of business executive and emotional intelligence increases with age, reaches to maximum and then start decreasing with age. Executives aged between 25-35 scored highest on emotional intelligence level in comparison to executives of other age group.

(Ciarrochi, Chan and Bajgar *et al.*, 2001) aimed at measuring emotional intelligence in adolescents. They concluded that emotional intelligence of adolescents is affected by their gender. Female had higher overall emotional intelligence except for managing their own emotions. Emotional intelligence helps in overcoming emotional difficulties.

(Sutarso, Baggett, Sutarso and Tapia *et al.*, 1996) conducted study in order to study the effect of gender and grade point average on emotional intelligence in which 138 students participated. Component of emotional intelligence like attunement, self -control/ self-awareness and empathy/compassion were examined under this study. Paper suggested that gender does affect emotional intelligence except for attunement.

### 3. OBJECTIVE OF STUDY

This research paper has following objectives:

1. To examine level of emotional intelligence of professional employees.
2. To understand the impact of age of professional employees on their emotional intelligence level.
3. To understand the impact of gender of professional employees on their emotional intelligence level
4. To compare the mean score of level of emotional intelligence among professional employees from various profession.

### 4. HYPOTHESIS

Following hypotheses have been formulated:

H<sub>1</sub>: There is high level of emotional intelligence among professional employees and vice versa.

H<sub>2</sub>: Age of professional employees would significantly influence their emotional intelligence level and vice versa.

H<sub>3</sub>: Gender of professional employees would significantly influence their emotional intelligence level and vice versa.

H<sub>4</sub>: There is significant difference among professional employees of various profession in relation to emotional intelligence and vice versa.

### 5. RESEARCH METHODOLOGY

#### 5.1 Sample

The participants of present study were

100 professional employees from selected organizations in Lucknow city. It included professors, doctors, teachers and advocates. The sample of study has been randomly selected from various organizations situated in Lucknow city.

#### 5.2 Instrument

Emotional intelligence test developed on ability model of emotional intelligence by Dr. Nicolas Schutte namely Schutte Self Report Emotional Intelligence Test (SSEIT) was used to collect data. The scale has following sub constructs:

1. perception of emotions,
2. managing of emotions,
3. managing others' emotions and
4. utilization of emotions.

It has thirty items for measuring emotional intelligence. Respondent mark their answers on five-point Likert scale 5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree) and 1 (strongly disagree). Score on this scale can range between 33 to 165, higher emotional quotient scores indicate higher emotional intelligence. There were three negatively keyed items in questionnaire, which were reverse coded at the time of data analysis. The questionnaire also had provision of recording socio-demographic details which included name, age, gender and designation. Phone number and email id (optional) of professional employees were also collected to establish a contact whenever needed

#### 5.3 Ethical Issues

Objectives of research were conveyed to the participants. Voluntary consent



was obtained from all the participants, they were given with the option to reject the participation if they intend to do so. An assurance was given to all the respondent regarding information provided by them that it would be solely used for research purpose and would be kept confidential.

#### **5.4 Statistical test**

Collected data was statistical analyzed with the help of SPSS software, version 28. Statistical test like independent t test and ANOVA were used.

## **6. FINDING AND ANALYSIS**

### **6.1 Analysis**

Objective 1: To examine level of emotional intelligence of professional employees.

According to present study, the total number of professional employees who scored high on emotional intelligence test was 92. Professionals who scored moderately were 8. There were no low scores among total population of test taken. Thus, concluding that majority of professional employees had high level of emotional intelligence.

Table 1 about here

Objective 2: To understand the impact of age of professional employees on their emotional intelligence level.

The age of participant of the present study was between 25 to 65. For analysis purpose the sample was divided into 5 age groups such as 25 to 35 years, 35 to 45years, 45to 55years, 55 to 65 years and 65years and above. Almost 57% of employees in this study fall in age group

of 25-35, 21% are between the range of 35-45, 18% in between 45-55 and only 4% are between 55-65 years of age. In order to find impact of age (various age group) on emotional intelligence, ANOVA is used. Result shows overall value of  $F=.596$ , and significance value of  $p= .619$ . Therefore, significance limit ( $p>0.05$ ) was inferred as age has no significant impact on emotional intelligence of professional employees.

Table 2 about here

Objective 3: To understand the impact of gender of professional employees on their emotional intelligence level.

Professional employees under this study consist of two genders i.e., male and female among which 74 participants were male and 26 participants were female. Female professional employees have overall EI with a mean score of 138.7308 and male professional employees have overall E.I mean score of 134.9324. In order to find impact of gender on emotional intelligence, independent t test is used. The p- value of Levene's test is .846 ( $p > 0.005$ ). The value of t-test is .183, which is less than the significant value of 0.50. Therefore, it was concluded that significant impact of gender was found on emotional intelligence of professional employees.

Table 3 about here

Objective 4: To compare the mean score of level of emotional intelligence among professional employees from various profession.

Professional employees under this study include 59 law professionals,

27teaching professionals and 14 medical professionals. Comparison of mean score of emotional intelligence between professional employees of different profession, ANOVA is used. Result shows value of  $F=.087$ , and significance value of  $p=.916$  ( $p>0.05$ ). Therefore, it was concluded that no significant difference was found in emotional intelligence level of professional employees across various profession.

Table 4 about here

### **6.2 Findings**

The finding of the study elucidates that 92% of professional employees under this study have high emotional intelligence, 8% of professional employees had medium level of emotional intelligence and no professional employee had low level of emotional intelligence. Along with professional intelligence, professional employees must have higher emotional quotient. They must be prompted to make effective use of their emotional competencies. No significant impact of age of professional employees was found on their emotional intelligence level whereas a significant impact of gender of professional employees was found on their emotional intelligence level. So, training programs must be employed to enhance emotional intelligence of professional employees irrespective of their age. Another finding of the study states that professional employees from law, medical and teaching profession have similar level of emotional intelligence.

### **7. LIMITATIONS**

There are few limitations to our study.

Participants of the study were only professional employees from three profession i.e., law, medical and teaching. In order to have better understanding of emotional intelligence non-professional employees and employees from other professions should have been included. Our study has been done on limited sample, calling for larger sample study in future. The present study mainly focuses on professional employees from Lucknow, Uttar Pradesh in India. By conducting same research in other areas, researchers would get more reliable results. Further research can be done on studying relationship between demographic factors related to professional employees and their emotional intelligence level.

### **8. CONCLUSION**

We conclude that the level of emotional intelligence of most of the employees under this study was high. No significant impact of age was found on emotional intelligence level of professional employees but a significant impact of gender was found on emotional intelligence level of professional employees. No significant difference was found between emotional intelligence of law professional, teaching professionals and medical professionals. Despite of demographic factors like age and gender being commonly found to have a relationship or association with emotional intelligence in many studies, findings of this study related to age is in tune with (Tyagi, 2004; Jacques, 2009; Nasir and Masrur, 2009; Yogun and Miman, 2016) indicating that no impact of age was found on emotional

intelligence level of professional employees and results of present study related to gender is in line with studies like (Hopkins and Bilimoria, 2008; Jorfi, Yaccob and Shah *et al.*, 2011; Sergio, Dungca and Ormita *et al.*, 2015), indicating that a significant impact of gender was found on emotional intelligence level of professional employees. Working with a diversified workforce brings various benefit to the organization like bringing creativity in decision-making process and age and gender are one of the important components of diversity in workforce. Attributes that professional employee must possess include competence, knowledge, integrity, consciousness and appropriateness. Despite of various expertise that a professional employee posse, emotional intelligence is very crucial for both employees and organization as it helps in surpassing different challenges faced by their

professional employees (Gautam and Khurana, 2016). It is expected from professional employees that they do not carry baggage of their emotions at work but emotional intelligence has a pivotal role in numerous professions. Many researchers have thrown light on importance of emotional intelligence at work as it helps in predicting effectiveness of employees at work. This research paper has concluded that age of professional employee should not be taken as criterion for hiring process either by employers or clients. Emotional intelligence of professional employees can be increased through training and workshops at any stage of life as emotional intelligence level of professional employees is not influenced by their age but it is influenced by their gender. Enhancement of emotional intelligence of professional employees can take an organization to greater heights.

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## TABLES

Table 1:

Category	Range of Scores	Number of employees
High	122-165	92
Moderate	78-121	8
Low	33-77	0
Total		100

Table 2:

Emotional Intelligence	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	281.821	3	93.940	.596	.619
Within groups	15133.539	96	157.641		
Total	15415.360	99			

Table 3:

Emotional Intelligence	Leven's test for equality of variances		t test for Equality of means						
	F	Sig.	t	df	Sig. (2tailed)	Mean Difference	Std. Error Difference	95% Conf. Interval of the Difference	
								Lower	Upper
Equal variance assumed	0.37	0.847	-1.341	98	.183	-3.79834	2.83345	-9.42123	1.82455
Equal variance not assumed			-1.430	49.626	.159	-3.79834	2.65682	-9.13571	1.53904

Table 4:

Emotional Intelligence	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	27.739	2	13.870	0.87	.916
Within groups	15387.621	97	158.635		
Total	15415.360	99			

# Structural validity of Utrecht Work Engagement Scale in the Indian Context

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## Abstract

The present study assesses the structural validity of four different measurement models of the Utrecht Work Engagement Scale in the Indian context. Data were collected from 300 banking professionals from private-sector banks. Confirmatory factor analyses were used to evaluate the structural validity of the instruments, and internal consistency was also examined. Confirmatory factor analyses results showed a superior fit of the two-factor structure (vigor and dedication) over and above the one-factor and three-factor structure of UWES-9 items. While theoretical defined three-factor structure of UWES-9 also demonstrated adequate goodness-of-fit estimates on the Indian sample. Based on the findings, it was suggested that a two-factor structural model (vigor and dedication) could be a cost-effective and viable alternative to measure work engagement in the Indian context.

**Keywords:** Structural validity, factorial validity, work engagement, engaged workers, UWES

## Introduction:

Work engagement is one of the most popular concepts in occupational health psychology because it is strongly associated with positive outcomes for both organizations and individuals in this competitive business world (Bakker & Albrecht, 2018). Engaged workers perform extraordinarily in their jobs by attaching themselves emotionally, cognitively, and physically

to their work roles and providing value to the organization in the form of innovativeness and competitiveness (Albrecht et al., 2015). Work engagement is defined as 'positive, fulfilling, work-related psychological state characterized by the dimensions of vigor, dedication, and absorption' (Balducci et al., 2010, p.143). Vigor is defined as high levels of energy and mental resilience of an individual while

working. Dedication refers to the strong involvement of an individual with his/her work and fulfilling a sense of pride, significance, inspiration, challenge, and enthusiasm. Absorption is leveled as a full concentration of mind in one's work, whereby time flies and one faces difficulty in detaching oneself from the work desk.

The most extensively used device to plant the conceptual definition of work engagement in practice is the Utrecht Work Engagement Scale (UWES). The scale was developed by Schaufeli and Bakker (2003). The original scale consists of 17 observed items to measure the three distinct characteristics of work engagement: vigor, dedication, and absorption. Vigor was loaded with three observed items, the dedication was equipped with five observed items, and the rest of the six items were used to measure the absorption. Later, a short form of UWES was developed with 9 items equally divided into three dimensions with similar psychometric properties and became an alternative to the UWES-17 items (Schaufeli, Bakker, & Salanova, 2006). Further, Seppala et al. (2008) conducted a longitudinal study and observed that the UWES-9 factor structure remained comparatively unchanged across the samples, and time and exhibited sound construct validity over the UWES-17 items. According to the leading psychology publication depository, PsycINFO, the UWES-9 item scale was used in 83 percent of the research articles deposited in this database (Schaufeli

& Salanova, 2011). Furthermore, the scale gained widespread popularity and was translated into different languages such as Vietnamese (Tran et al., 2020) Spanish (Serrano et al., 2019), Brazilian (Vazquez et al., 2015), Italian (Balducci et al., 2010), Norwegian (Nerstad, 2010), Japanese (Shimazu et al., 2008), and Chinese (Zhang & Gan, 2005). Concerning India, Hindi is the national language of India. No endeavor was shown by the researcher to develop a Hindi version of the scale as higher education in India has been taught in the English language (Alok, 2013). In addition, most organizations used English as well as Hindi as an operational language in their day-to-day paperwork. So, workers in India are well familiar with English, therefore, transformation of scale into Hindi may not be required.

Despite its ubiquitous popularity, UWES- 9 items scale getting widespread disagreement regarding its factor structure (Wickramasinghe et al., 2018; Lekutle & Nel, 2012; Shimazu et al., 2008; Hallberg & Schaufeli, 2006; Sonnentag, 2003; Storm & Rothmann, 2003). Conceptually, work engagement is defined as a three-dimensional structure, but validation studies on work engagement have observed the presence of one dimension as well as a two-dimension structure. For example, Shimazu et al. (2008) confirmed the greater fit of the one-dimensional structure of the UWES-9 scale as compared to the three-dimensional structure of UWES-9, and the structure remained stable across



three independent sample groups in Japan. Sonnentag (2003) observed indistinctness in the factor structure of the scale using principal component analysis and used the total composite scale for further analysis. In addition, De Buhi and Henn (2013) used two factor model of work engagement in their study over and above one factor and three-factor structure of UWES. It was also evident from the study reported by Wefald et al. (2012) that both three and one-factor structures were unable to produce the desired model fit results and suggested an alternative scale to better capture the concept of engagement. Furthermore, Kulikowski (2019) found the superiority of the two-factor structure over and above the three-factor structure of UWES-9 in Poland and raised a question about the dimensionality of UWES. Despite the presence of one, two, and three-factor structure in literature, Schaufeli et al. (2006) has suggested the four-factor 'professional efficacy' as an expanded work engagement factor in their study. Therefore, due to the presence of variety of factor structures in the validation studies across countries, it has become important to assess the factor structure of UWES-9 in terms of structural validity in the Indian context.

Most of the validation studies to assess the utility of the UWES-9 scale were performed on western populations. Limited studies were performed in the Indian context (Kataria et al., 2003; Choudhary et al., 2012; Alok 2013; Lathabhavan et al., 2017). Kataria et al. (2003) conducted the validation

studies in the Indian context and found a superior fit of the correlated three-factor structure of UWES-9 over UWES-17 and established discriminant validity. Lathabhavan et al. (2017) also found an adequate fit for the three-factor structure of UWES-9 in the Indian context. Despite the superior fit of the three-factor structure of UWES-9 in an Indian sample, Choudhary et al. (2012) did not find a clear view of the three-factor structure of UWES-9 using exploratory factor analysis. They rather found a one-factor structure, as one component was extracted with an Eigenvalue greater than one. Further, Alok (2013) found the one-factor model as an appropriate tool for the Indian sample. Due to inconsistency regarding the factor structure of UWES-9 in the Indian context, it has become important to understand the structural validity of UWES-9 in the Indian sample. Furthermore, all the above studies were performed in different organizational settings and samples, as different organizations provide different types of resources to engage their workforce, thereby affecting their level of engagement at work (Bakker & Demerouti, 2008). Given the above facts, the present paper seeks to assess the structural validity of UWES-9 and the internal consistency of the scale. Considering the above, four different types of the factor structure of UWES were examined in the Indian sample. Model 1 was based on a three-factor structure, model-2 was created as the two-factor structural model with two core elements of engagement (vigor and dedication) and model 3 was also

designed as a two-factor model while taking into consideration all the nine items (vigor and dedication were combined as one factor and absorption as another) and model-4 was formed as a one-factor model in which all the nine items were clubbed into one latent factor. The structural validity of all four models was evaluated using confirmatory factor analyses, and the results were compared with the recommended cutoff criteria.

## Methods

### *Demographic details of the respondents:*

The current study's participants were Indian managers from private-sector banks. The respondents consist of assistant managers, deputy managers, relationship managers, sales managers, and branch operation managers. For the statistical analysis, 350 managers were contacted. Responses were collected by visiting the branches. There were 300 usable, valid sample data points obtained in total. There were 202 men and 98 women among the respondents. 14 percent were graduates, 28.3 percent had postgraduate studies, and 57.7% had professional courses such as a diploma in banking and finance, an MBA, an MCA, or a B. Tech. The mean age of the participants was 32.46 years, with an SD of 5.34.

### *Measurement Scale:*

The UWES-9 items scale was applied to measure the individual level of engagement at work. The scale consists of three dimensions leveled as vigor, dedication, and absorption. Each dimension is equipped with three indicators. The scale was graded on

a seven-point scale, with one being 'never' and seven being 'always'. A sample item on each dimension includes (a) 'At my job, I am bursting with energy'; (b) 'At my job, I am enthusiastic about my job'; and (c) 'I get carried away while working', respectively.

### **Statistical Analyses:**

The observed data was assessed with the help of statistical software called SPSS and AMOS. The structural validity was examined by applying the confirmatory factor analysis technique using the AMOS program. Hair et al. (2010) suggested that reporting one incremental index and one absolute index along with chi-square ( $\chi^2$ ) scores and degree of freedom (df) is provide adequate information to judge the model fit. Therefore, the following fit indices were applied to evaluate the models: (a) the  $\chi^2$ /goodness-of-fit statistic ( $\chi^2$ /degrees of freedom ratio); (b) RMSEA (Root Mean Square Error of approximation); (c) CFI (Comparative Fit Index); and (d) TLI (Tucker-Lewis Index). RMSEA is known as an absolute fit index that determines how well a theoretical-based model is captured by observed data. CFI and TLI are known as incremental indexes that compare the fit of a hypothesized model with that of a baseline model or a model with the worst fit. The  $\chi^2$ /degrees of freedom ratio is one of the first goodness of fit statistics to overcome the problem of  $\chi^2$  that is associated with large samples (Byrne, 2010; Wheaton et al., 1977). As per the recommendation given by Hair et al. (2010), if the  $\chi^2$ /degrees of freedom ratio of the observed data concerning the said

model is less than 5.00 is considered to be a good model. For RMSEA, a value below 0.08 is a sign of adequate model fit (Hair et al., 2010). In the case of CFI and TLI, a value greater than 0.90 is suggested as a good model fit (Hoyle, 1995; Hu & Bentler, 1998; Browne & Cudeck 1992). However, Hu and Bentler (1999) revised the values of CFI and TLI and considered values above 0.95 to be a good model fit in the case of the maximum likelihood approach technique. Further, internal consistency estimates of scale were computed using Cronbach's alpha coefficient value.

### **Statistical Results:**

#### ***Confirmatory Factor Analysis for Structural Validity:***

The results of the confirmatory factor analyses of all the four models of UWES were presented in tables 1-4. The measurement models diagram with corresponding standardized loadings were given in figures 1-4 for unconstrained models. . The goodness of fit statistics of all the four models suggested that model-2 (with vigor and dedication) depicted superior fit with TLI = 0.917 and CFI = 0.956. However, the RMSEA and  $\chi^2/df$  values of all the four models were not adequate. So, we applied certain considerable constraints in the form of error terms as suggested by the modification indices to improve the model fitness. In the case of model 1, the error term between items V1 and V2 and between D1 and D3 were also suggested. In the case of model 2, the error term between D1 and D3 as well as between D2 and D3 were suggested

by the modification indices to be correlated. Similarly, for models 3 and 4 a considerable number of error terms were also suggested by the modification indices. The results of all the constrained models were also reported in the tables. The results of constrained models for model 1 and model 2 have shown improved goodness of fit. However, model 2 demonstrated excellent goodness of fit indices with lower RMSEA and  $\chi^2/df$  values. Hence, based on the multiple fit indices, we suggested a two-factor model with six items (vigor and dedication) had a superior fit over and above one-factor, two-factor, and three-factor models of UWES with nine items in the Indian context.

#### ***Reliability and item analysis of UWES-9 Scale:***

Cronbach alpha coefficients were used to assess the internal consistency/reliability of the three-factor UWES-9 model. The Cronbach alpha of the total UWES-9 items scale was 0.880 whereas the alpha value for the subscales vigor, dedication, and absorption was 0.801, 0.840, and 0.726 respectively. All the Cronbach alpha values of the scale have achieved the minimum cutoff criteria of 0.70 and above as recommended by Nunnally (1978). All the nine items of the scale were equally contributed to achieving the total alpha scale of 0.880. The inter-item correlation among the nine items ranged from 0.197 to 0.664. Because the goodness of fit statistics results showed an acceptable fit of the two-factor model over and above the three-factor model, the Cronbach alpha values UWES-6 were also assessed.

The Cronbach alpha coefficient for the two-factor model was 0.863.

### **Discussion:**

The study focused on examining the structural validity of four models of UWES (one, two, and three-factor models) in the Indian sample. The goodness of fit statistic derived from the confirmatory factor analyses technique suggested superiority of the two-factor model (vigor and dedication) over and above the one and three-factor model. The Cronbach alpha value of the total scale was 0.880, which met the strict criteria of 0.80 as suggested by Henson (2001). In addition, the Cronbach alpha scores of three subscales were 0.801, 0.840, and 0.726 for vigor, dedication, and absorption respectively. The Cronbach alpha value of the total scale in the case of the three-factor structure was 0.880. Furthermore, approximately similar results produced by two factor model of UWES when compare with the three-factor model raises doubt about the dimensionality of the concept for the developing countries like India with diverse cultures. And also raised questions like what should be the ideal instrument to measure the engagement of an employee in the Indian context? In conclusion, the findings of this study supported the application of the both three-factor and two-factor model of UWES. noting it as valid and reliable instruments for measuring work engagement in the Indian context.

### **Limitation**

There were several limitations to this study as well. First, because the data

was obtained from a specific industry *i.e.* private sector banks, it is not possible to extrapolate the findings to other industries or profession categories. In addition, the use of error terms to improve the model fit to the observed data is not an ethical practice because it reduces the applicability of the scale in different contexts and reduces the chance of concrete decisions being made on the concept ( Storm & Rothmann, 2003 ). Second, the data was gathered by a self-report questionnaire, common method bias is probable. The third limitation includes factor structure, the present study has focused only on four different types of measurement models of work engagement, whereas Kulikowski (2019) proposed eleven different types of measurement models of UWES in total. So, a more elaborated study is required. Furthermore, the study used a cross-sectional design, which may limit inclusive remarks on the scale's internal consistency. Longitudinal studies should be conducted to investigate the validity of UWES in the Indian context to draw more accurate conclusions about the measurement instrument's efficacy in terms of test-retest reliability.

### **Conclusion:**

Work engagement is a very important concept for both occupational and health psychology in this volatile work environment. The finding of the study may provide new insight for a better understanding of the various type of measurement models of work engagement in the Indian contexts. The finding also suggested that the two-factor model (vigor and dedication)

could be a viable instrument and alternative for the three-factor model of work engagement. Furthermore, our findings also support the argument given by Bakker, Albrecht, and Leiter (2011) that, whether absorption is the core element of engagement as the two-factor model with dedication and vigor

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fit the data very well.

**Table 1: Confirmatory factor analysis results for the three-factor model of UWES-9**

UWES-9 (Model 1)	$\chi^2$	Df	$\chi^2/df$	TLI	CFI	RMSEA
Freely estimated	125.562	24	5.232	0.882	0.921	0.119
Constrained error term	94.581	22	4.299	0.908	0.944	0.105

**Table 2: Confirmatory factor analysis results for the two-factor model (*vigor and dedication*) of UWES**

UWES-6 (Model 2)	$\chi^2$	Df	$\chi^2/df$	TLI	CFI	RMSEA
Freely estimated	45.344	8	5.668	0.917	0.956	0.125
Constrained error term	17.184	6	2.864	0.967	0.987	0.079

**Table 3: Confirmatory factor analysis results for two factor model (*vigor and dedication as one factor and absorption as another*) of UWES-9**

UWES-9 (Model 3)	$\chi^2$	Df	$\chi^2/df$	TLI	CFI	RMSEA
Freely estimated	210.468	27	7.795	0.810	0.858	0.151
Constrained error term	148.329	25	5.933	0.863	0.904	0.128

**Table 4: Confirmatory factor analysis results for one factor model of UWES-9**

UWES-9 (Model 4)	$\chi^2$	Df	$\chi^2/df$	TLI	CFI	RMSEA
Freely estimated	252.789	27	9.363	0.767	0.825	0.167
Constrained error term	195.109	25	7.804	0.810	0.868	0.151

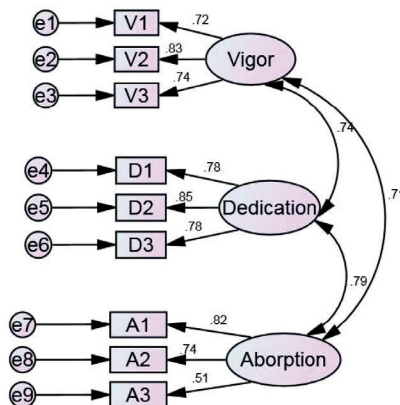


Figure 1: Three factor CFA model of UWES-9 items with standardized loading (model 1)



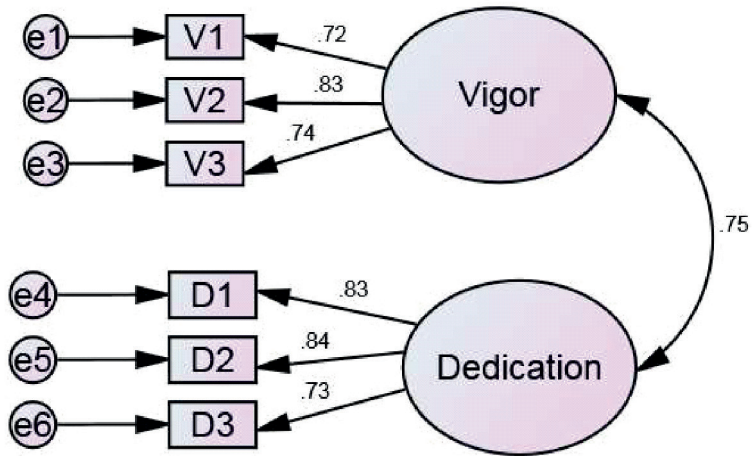


Figure 2: Two Factor CFA model of UWES-6 items (vigor and dedication) with standardized loading (model 2)

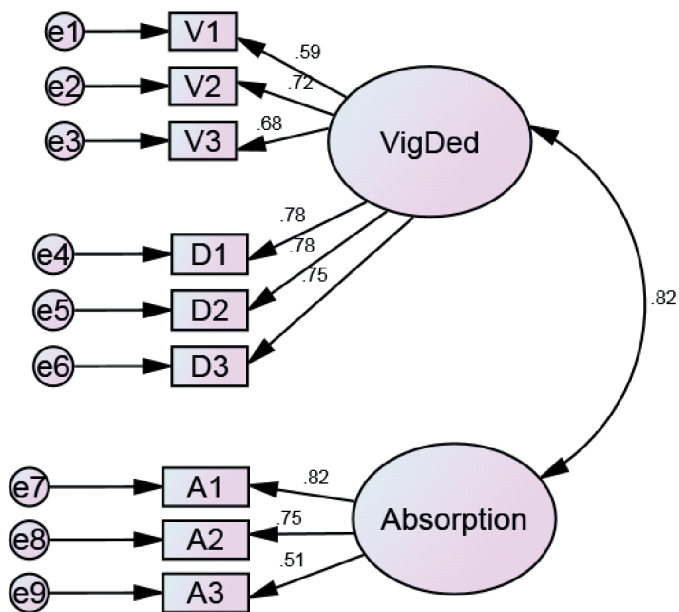


Figure 3: Two factor CFA model of UWES-9 items with standardized loading (model 3)

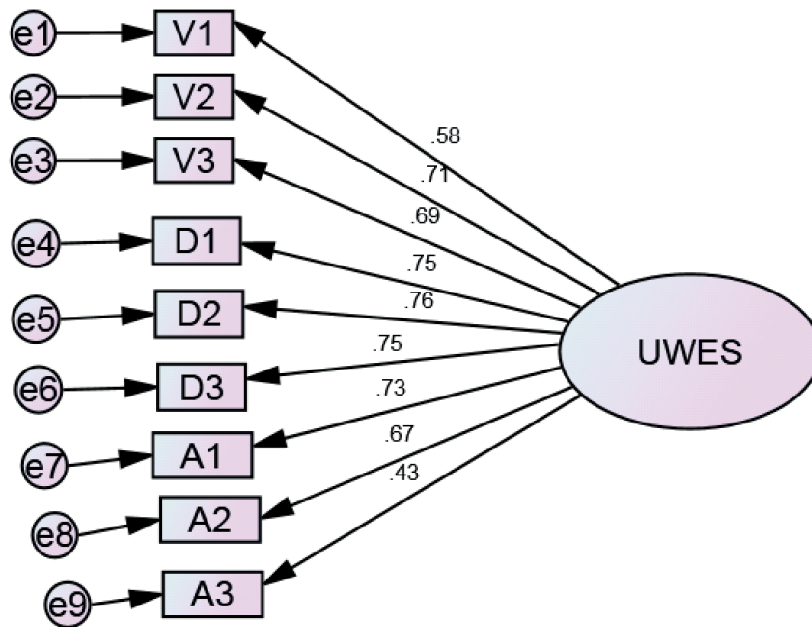


Figure 4: One factor CFA Model of UWES-9 items with standardized loading (model 4)

# Socio-Economic Condition and Insecurity of Handloom Weavers of India:

## A Systematic Literature Review

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### Abstract

In recent years the socio-economic condition of weavers has been degraded in terms of loss of jobs, loss of income, high production costs, several health issues. Thus, this paper aims to conduct a systematic literature review (SLR) based on a survey of 30 papers published between 2015 and 2021 on the subject of socio-economic issues, health hazards and business problems of handloom weavers to acquire an updated picture of these domains. The Google Scholar search engine was used, and SLR produced intriguing results documented in this review paper. The government has adopted several welfare laws and projects. Despite several plans, the handloom business has numerous challenges, including worldwide marketing rivalry, low income, and low market pricing. As a result, weaver's social and economic situations have been deteriorating. Weak organizational structure, low pay, inadequate infrastructure, dispersed looms, poor marketing, and other factors made them more vulnerable.

**Keywords:** Socio-economic condition, health hazards, business problems, handloom weavers, poor marketing

### 1. Introduction

The handloom industry is playing a pivotal role in the sustenance of the culture and heritage. This sector is also providing employment to the rural mass. Handlooms form the

highest employment generating, labor-intensive and export-oriented industry, especially in rural and semi-urban areas in India (Kaushik and Jain 2015). In reality, together with agriculture, the handloom sector is the backbone of the

country's rural economy. Aside from agriculture, the handloom sector is responsible for most rural employment and revenue. This sector is one of the largest unorganized sectors after agriculture having advantages of being less capital intensive, minimal use of power, eco-friendly, adaptable to market requirements etc. (Jain and Gera, 2017).

Handloom weaving is India's largest cottage and labor-intensive business, and it has played a significant role in the country's economy by preserving India's rich heritage and demonstrating the weavers' unique handicraft. Chary and Usha (2021) observed that India's handloom industry has a long history of beautiful and unrivaled craftsmanship. Chinnu and Sheeba (2021) added that the handloom sector is a part of India's legacy, depicting the country's wealth and diversity and the weavers' skills.

It provides around a quarter of the country's apparel needs. Academics from all over the world have been interested in the topic and have conducted extensive research on the socioeconomic issues of handloom weavers.

However, the handloom census report (2019-20) states that the monthly income of 68.5% of rural weavers is less than Rs 5000, and the income of .01% of handloom weavers lies between Rs 50000 to 100000. No weavers are earning more than Rs 1 lakh. The fate of urban weavers is also similar.

Handloom workers are also referred to as home-based laborers in metropolitan areas (Sivasubramanian and Rajendran, 2019). Das (2021), Rao and Sreedhar

(2017), Tiwari (2017), Bari *et al.* (2015), and many other researchers have shown concern regarding the degrading socio-economic condition of handloom weavers in India. In addition, Western *et al.* (2012) risk of economic loss fosters economic insecurity.

Thus, it is the need of the time to study the socio-economic status of the handloom weavers along with the health issues faced by them which ultimately leads to insecurity.

## 2. Objectives of the Study

The study aims at assessing the socio-economic condition of handloom weavers in India by analyzing the existing literature. The working environment and the nature of work of such weavers is prone to several health issues. Thus, the study also dissects the health condition of such weavers. Business issues like marketing and finance problems are also summarized from the available literature.

## 3. Methodology of the Study

This review article examines current literature on the socio-economic condition, health issues, and business hindrances of weavers, emphasizing the authors' suggestions and deductions. The systematic literature review (SLR) which identifies, selects, and critically assesses material to answer a given topic (Dewey and Drahota, 2016) here aimed to gain a current picture of growing research trends based on handloom weavers' socioeconomic issues in particular.

The search engine "Google Scholar"

was used, and search terms like “socio-economic issues”, “health hazards”, “business problems”, “financial problems” etc. are used. The following criteria were used to choose the articles included in the review: a. chronological order in descending order beginning in 2021, and b. a variety of contextual contexts in terms of geography and product or process. The content of the articles was chosen to answer the following question: What are the most recent research trends on rising research trends based on handloom weavers’ socioeconomic issues? According to the rule-of-thumb criterion for the minimum size of the sample based on assumptions of the central limit theorem and normal distribution, the sample size for the review was set to at least 30 papers (Hogg *et al.*, 2010).

The analysis was carried out using the widely used qualitative method (De Hoyos and Barnes, 2012), with Gibson and O’Connor (2003) stating that the general steps in this type of analysis include organizing qualitative data, identifying and organizing concepts and ideas, developing themes, classifying and categorizing themes, connecting the data, and interpreting the results.

#### 4. Discussion

##### 4.1 Socio-Economic Condition of Handloom Weavers

The livelihood of handloom weavers is distressed (Das, 2021), their income is relatively poor (Rao and Sreedhar, 2017) and the community is suffering from acute scarcity and extreme poverty, making it difficult for them to meet their day-to-day costs (Tiwari,

2017). Weavers’ socio-economic condition is also symptomatized by low pay, unemployment, lack of demand (Muneendra and Prakash, 2016), low working capital, and raw material availability (Selvaraj and Tamilrasi, 2016). Moreover, the shelter used by weavers of Trivandrum area can only accommodate 8-10 looms, and are excessively close together. Most of the sheds are open, with unfinished floors, low roofs with tin sheets, crammed with pit looms, and inadequate illumination. Covid pandemic added woes to it and a tiny number of weavers are getting the benefits of different government schemes (Khatoun and Iffat, 2021). The manufacturing of handloom products is dropping off significantly in recent years (Gowreeswari and Bama, 2019) and weavers have become jobless (Naidu and Jayachandra, 2014). Varghese and Salim (2015) focused on the difficulties and challenges of the Handloom industry in Kerala and found that the industry is mainly competing with the power loom industry. Bari *et al.* (2015) traced those weavers have been discouraged from continuing to weave due to a lack of education and other sources of income. Prathap and Naidu (2015) found that the handloom weavers of Vontimitta Mandal in Kadapa District of Andhra Pradesh are very poor. The weavers of Nellore district of Andhra Pradesh are also in similar condition (Satyanarayana *et al.*, 2017; Balasubrahmanyam and Muthumeenakshi (2018). Panda and Parida (2019) concerned that there is an urgent need to conserve the occupation of vernacular weavers of Nuapatna of Odisha, India.

#### 4.2 Health Hazards and Socio-Economic Insecurity

Durlov *et al.* (2014) stated that weavers of West Bengal suffer from low back pain when there is an increase in working. Rao and Sreedhar (2017) found that weavers of Krishna district of Andhra Pradesh have been encountering health problems like back pain, eye-sight issues, knee pain, joint pain etc. Ramdan *et al.* (2018) found that women weavers of Indonesia are facing severe muscular diseases. Kumar and Karmakar (2018) opined that high noise and low illumination levels are often encountered by handloom weavers in Bargarh Districts of Odisha. Parida (2019) discovered that the weaving occupation is primarily affected by Musculoskeletal disorders (MSDs), which led to economic imbalances in their families. Durlov *et al.* (2019) also reiterated that weavers with low-economic conditions in West Bengal are usually suffering different health problems like body pain, eye constraint, respiratory problems, etc. Siddiqui *et al.* (2021) generalized that the weaving business has a high rate of work-related musculoskeletal problems. The neck, shoulders, back, and wrist are the most afflicted body parts.

#### 4.3 Marketing & Finance Issues and Socio-Economic Insecurity

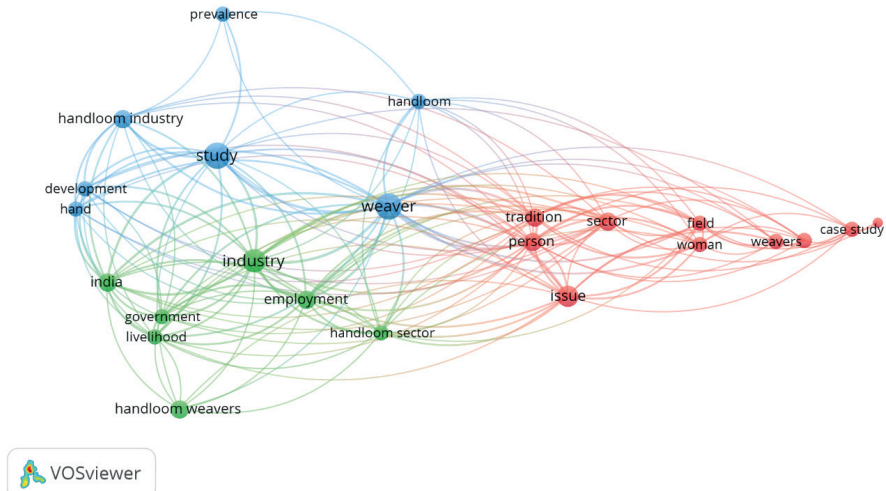
Tanusree (2015) studied the present condition of handloom weavers of Varanasi, India and concluded that handloom weavers of Varanasi, Uttar Pradesh have lost their prestigious traditional industry due to the invention of the power loom, increasing-price of

yarn, low wages and labour problem etc.

Bari *et al.* (2015) stated that weavers often encountered high yarn prices and low final product realization. Bhagavatula *et al.* (2010) measured the influence of human and social capital on resource procurement and opportunity identification in the Indian Handloom industry. The authors found that human capital, directly and indirectly, influences resource procurement and opportunity identification. Jain and Gera (2017) did analytical research in which they discovered specific issues with the handloom sector, such as a lack of accurate and authentic data and low yarn quality, financial crisis, inadequate infrastructure, a lack of education, skills-based training and research, a paucity of inputs and their growing costs, a problem with working capital. Barik and Behera (2017) traced that weavers of Athagarh zone of Odisha are facing marketing problems. Weavers also failed to compete with power looms and their business profits have been diminished day by day (Malarkodi *et al.*, 2020). Gowreeswari and Bama (2019) added that the manufacturing of handloom cotton sarees has decreased owing to high production costs, long loan applications etc. Chinnu and Sheeba (2021) observed that handloom workers have been facing several challenges like insufficient yarn supply, poor quality of raw material, high production cost etc.

In keyword co-occurrence analysis, nodes represent keywords and lines connecting them represent co-occurrence. Here, keywords with a minimum occurrence of two have been

Fig 1: Keyword Co-occurrence Analysis



Source: Compiled in VoS Viewer considered for the analysis. As shown in the above figure, three clusters are identified. The largest cluster coloured in blue focus on study related to the weavers, handloom industry and its development. The green cluster,

the second largest one, focuses on employment issues and government initiatives towards the handloom sector. The third cluster coloured in red focuses on tradition and issues in the sector along with the role of women in the



Fig 2: Word Cloud of Socio-Economic Issues

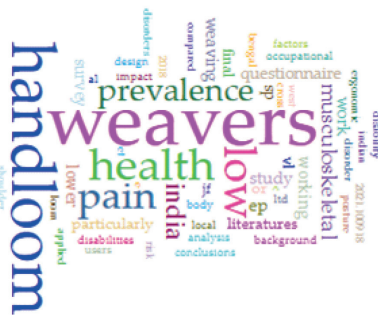
Source: Compiled in <https://voyant-tools.org/>

concerned field.

The figure below depicts the important keywords of the literature. The prominent words have been used more frequently than other words. Handloom and weavers are more prominent inferring that relevant literature are referred. The presence of words like problems, conditions, capital, labour, technology, education, management, etc.

deduce the worsening socio-economic condition of the handloom weavers of India.

In the fig-3, prominent words are handloom, weavers, pain, health, surgery etc. inferring the prevalence of several health issues among the handloom weavers. The weavers have been

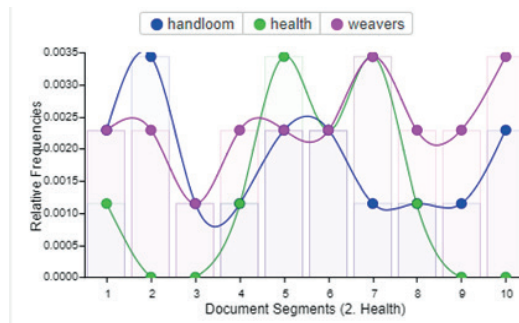


**Fig 3: Word Cloud of Health Issues**

Source: Compiled in <https://voyant-tools.org/>

encountering musculoskeletal problems, joint pain, lower back pain, etc. due to the nature of the style of work.

Figure 4, below explains the combination of high-frequency words from the literature explaining health issues. Three words i.e., handloom, health and



**Fig 4: Word Cloud of Health Issues**

Source: Compiled in <https://voyant-tools.org/>



weavers are high-frequency words. These three words are found in all the literature which infers that handloom weavers face several health problems.

**Table 1: Socio-Economic Conditions of Handloom Weavers of India**

Author(s)	Geographical Scope	Study Parameter	Major Findings	Reasons
Das (2021)	Western Odisha	The livelihood of Sambalpuri Handloom Weavers	Dissatisfaction on income	Lion's share of income leaked to intermediaries
Malarkodi et al. (2020)	Coimbatore and Erode, Tamil Nadu	Business Issues	Poor Business Profit	Participation of intermediaries, and competition from power loom sectors
Gowreeswari and Bama (2019)	Pollachi Taluk, Tamil Nadu	Business Issues	High Cost of Product	Ineffective government programs
Durlov (2014,2019)	West Bengal	Socio-Economic Conditions	Degrading Socio-economic condition	Health Issues like Low Back Pain, Respiratory Problem
Jayachandra & Naidu (2018)	Chittoor, Andhra Pradesh	Role of Co-operative Society	Jobless	Dormancy of Co-operative Societies
Kumar & Karmakar (2018)	Bargarh, Odisha	Health Issues	Continuous health problem	High level of noise and low level of illumination
Rao & Sreedhar (2017)	Krishna, Andhra Pradesh	Socio-economic and Health Condition	Lots of Health Issues	Poor Performance of the co-operative sector, and the poor economic condition

Source: Compiled from different literature

The table above summarizes some closely related literature and revealed

the reasons for the degraded socio-economic and health conditions of handloom weavers in India. The poor performance of cooperative societies, high cost of production, ineffective

government programs, and leaking of income to intermediaries are some causes for the poor socio-economic condition of such weavers. The work environment and working style caused may health issues like eye-sight issues, lower back pain, knee pain etc.

### **5. Findings and Implications**

The settings of the 30 articles examined were diverse, including a wide range of handloom weavers and services. The Indian handloom industry is a centuries-old enterprise that employs many rural people. In the Indian economy, they have their niche. The handloom industry is arguably the country's largest cottage industry. After agriculture, the sector ranks second in terms of employment creation. They do so because they employ many weavers and other affiliated labour.

The evident pressure on the Indian handloom sector is an obvious and unmistakable observation. While 12 of the 30 publications evaluated focused on challenges in social circumstances, economic conditions, and their influence on handloom weavers, at least five of them specifically address raising the proper and appropriate wage, free medical camps and mobile health centres, and taking the necessary steps to ensure a constant supply of raw materials as essential aspects of socioeconomic concerns. Handloom weaving and welfare programs were examined in a few studies. The balance papers concentrated on many issues such as the production system, productivity, working capital, traditional product range, and marketing relations,

among others. Five papers specifically address the health issues which are encountered by the weavers. Ten papers mentioned the business problems of such weavers. When we add up the papers on handloom weavers and interventions like raising the proper and appropriate wage, free medical camps and mobile health centres and taking the necessary steps to ensure a constant supply of raw materials, etc., we find that almost two-thirds of the research falls into one of these two categories. A strong link between the two themes has been discovered in several study papers (Chary and Usha, 2021; Chinnu and Sheeba, 2021; Das, 2021; Malarkodi *et al.*, 2020). Power, productivity, and technology are all intertwined, and government interventions are one.

### **6. Conclusion**

The predominant focus of current research on handloom weavers is clearly on socioeconomic issues. According to the findings of this study, handloom weavers in India who have historically worked as weavers are in a pitiful state due to low socioeconomic conditions, health issues and business problems. The handloom sector has been steadily diminishing over the years, and handloom weavers are experiencing considerable difficulties due to a high cost of yarns, high cost of production, unorganised market, loss of job and income etc. Unsystematic government policies, globalization, competition from power looms and mills, inefficient scheme implementation, and changes in social and economic situations are the other fundamental causes. Nonetheless,

the handloom industry in India is a centuries-old cottage business that may be found all across the country. It is a source of income for millions of people, either directly or indirectly. Handloom weaving is essentially decentralized, with weavers primarily drawn from the poorer and more vulnerable elements of society, who weave for their own needs and contribute to textile production.

Thus, the research identifies gaps in the handloom business, seeks to trace difficulties, and highlights them in many aspects and the influence of the handloom sector. A few suggestions for meeting people's fundamental needs for growth while also increasing the weaver's and his family's living conditions are also observed. Following research on the socio-economic conditions of weavers, a few recommendations for addressing the suffering of handloom weavers are to be offered. Government should provide technical training to women and create awareness for education within the weaving community by providing them with a shared working shed. There is a need to generate awareness and provide capacity development series to enable weavers to fulfil safety requirements.

Though handloom weaving has many strengths, it is going through a severe crisis with bad social and economic conditions. In order to make the sector viable, its strengths and weaknesses must be discovered and appraised. It can be deduced that handloom weavers of India are insured in terms of socio-economic livelihood in general and financial and business problems in general.

### 7. Scope for Future Research

The present study has collected articles from the Google Scholar database. Scopus and any other highly popular database could have been used for efficient research work. The number of literatures is limited to thirty which could have been significantly increased to trace a robust result. In addition, the core dimension of the study is concentrated in three broad segments viz. socio-economic conditions, health hazards and business problems. Other micro thrust areas like supply chain issues, product designing, promotion, advertisement etc. are ignored, the inclusion of these factors could have added more value to the findings of the study.

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## Possible Presence of Cohesiveness amongst Women in Top Management Positions: Evidence from S&P BSE 100 Companies

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**ABSTRACT:** The present study analyses the effect of gender diversity on boards and in the top management on firm performance of Indian companies. The study extends to analyse the possible presence of 'cohesiveness' between female directors and female managers in the organisation and evaluates the moderating effect of the presence of women CEO or CFO in the company on firm performance. The present study has been performed on BSE 100 companies for a period of 13 years. As a proxy for firm performance, two financial indicators viz. ROA and ROCE have been used. Gender diversity on board has been measured by Blau's index and as proportion of women directors on board. Presence or absence of women CEO or CFO has been measured with a dummy variable. Various other variables that have been proved by previous researches to have an effect on firm performance viz. firm age, firm size, leverage, CEO duality, etc. have been used as control variables. The results of panel data regression analysis reveals that gender diversity on board has a positive and significant effect on firm performance. Presence of women executives in the top management positions of the firm does not have a significant effect on the financial performance of the firm. Concomitant presence of women executives in the company insignificantly but positively moderates the effect of gender diversity on firm performance. This implies that an improvement in representation of women managers in upper echelons of management may bring about significant cohesion and support amongst women leaders which may lead to better firm performance.

**Keywords:** Gender diversity, top management, CEO, CFO, firm performance

## INTRODUCTION

Gender diversity is a buzz word in today's corporate world after the regulations of SEBI came into effect from April 2014. Women have made considerable advancements in the upper echelons of the corporate structure, be it the managerial positions or as a member of the board of director. (Hillman, S & c, 2007; Melero, 2011) According to a recent report by Egon Zehnder (2020), India's performance in maintaining gender diversity in executive and non-executive positions in the corporate boards is better as compared to other Asian nations. According to the report, on an average, women hold 17 percent board seats in Indian companies. However, presence of gender diversity lags behind in Indian companies when it comes to appointment of women on executive positions. Women hold only 11 percent of committee chair positions in India, whereas this percent increases to 27.3 percent globally. The significant increase in the presence of women directors on board can be attributed to the recent regulations of SEBI and Companies Act, 2013 which have made it mandatory that at least one women director be present on the company board. However, as no regulations have yet been passed for the appointment of women on the executive positions of the companies, women are still underrepresented at the CEO level and at the executive level as a whole.

Women leadership has become a buzzword in the current corporate world as the phenomenon has been successfully linked to significantly

better firm performance, measured with varied facets of firm performance. In a recent report by Bureau for Employer's Activities, International Labour Organisation (ILO), where approximately 13,000 firms in 70 countries around the world were surveyed, revealed that gender diversity does improve firm performance, increases profit by 5 to 15 percent, improvements in innovation, creativity and openness was witnessed with significantly higher rate of GDP growth. However, the report also brings to light that 60 percent of such companies do not meet the target of having 30 percent (critical mass at which benefits of gender diversity starts to accrue) of their senior management as women (ACT/EMP, 2019). In a report by IBM, the number of women in leadership roles viz. vice president, director, manager, etc. has further degraded from the year 2019 to 2021, even though gender diversity was found to bring higher customer satisfaction and employee retention. (IBM, 2021)

A large number of studies have examined the role of women directors and women executives on various facets of firm performance. However, the previous studies on gender diversity in the Indian companies have studied the role of women directors and women executive in singularity. There is a dearth of studies focusing on the 'cohesiveness' of the female leaders in organisations. However, a few researches have put forward the theory that women show more cooperation with women at workplace as compared



to men. Also, the increasing pressure on women to perform better in a male-dominated workplace, leads to 'women helping women'. Therefore, the present study attempts to analyse the effect of presence of women directors on boards on firm performance and the effect of presence of women in top management on firm performance simultaneously. Moreover, as the previous literature suggests that women power enhances with the presence of women in other powerful positions of the firm, the present study analyses the role of concomitant presence of women leadership on corporate board as well as on top managerial positions on firm performance. As the present position of women directors on boards of Indian companies reflects tokenism and women presence in top management is nominal, an analysis of effect of 'support' provided by the women present in the same corporation in two different leadership positions viz. director and top management on the performance of the firm is imperative.

## REVIEW OF LITERATURE

Major theories propounded by previous studies have affirmed the significant role played by diversity in the upper echelons of the organisation and its effect on various indicators of financial as well as non-financial performance of the firm. As per the agency theory of governance, women directors are supposed to have a positive impact on performance of the firm as women directors play a better role as an agent of the shareholders, moreover, the resource dependence theory propounds that

gender diversity results in presence of diversity in managerial resources of the company, thereby bringing forth a gamut of diverse thoughts, ideas, intellectual and managerial capabilities. Diversity has been classified by the previous studies into two major classes viz. demographic diversity and cognitive diversity. However, in the case of gender diversity, cognitive diversity forms a component of demographic diversity, as women directors are associated with diverse perceptual views, reflect different cognitive functioning and tend to derive different solutions for same issues (Dutton & Duncan, 1987).

Women managers are supposed to improve firm performance with their critical and creative thinking. Gender diversity in top management brings heterogeneity in beliefs and attitudes, differences in perspective and preferences. The managerial style of women acts complementarily to the managerial style of men. Moreover, it has been postulated that gender diversity in the top management of an organisation would tend to increase recruitment of more females (discrimination model as propounded by Becker (1957)) in the lower levels of organisation and therefore would reduce the gender disparity in the organisation on a composite level. It has also been suggested by previous literature that women managers must be preferred in the companies that have women-dominated consumer markets, as they would better understand the viewpoints, needs and perspectives of women consumers, as compared to male managers. (Lee & Farh, 2004; Heller,

2011; OECD, 2012; Norris, 2012)

The role of female in the C-suite has been linked time and again to the profitability of the firm. In a study by Noland and Moran (2016) conducted on 22,000 firms globally, it was found that presence of female leaders in a profitable corporate organisation increases the net margin of the company by 1 percent, and results in a 15 percent increase in the profitability of any typical firm. Similarly, according to a study by Zhang and Zhang (2021) on 856 A-listed companies of China, the female-friendly companies enjoy positive performance changes, female-neutral companies show zero performance changes and female-discriminative companies show negative performance changes resultant of presence or absence of female executives in the company. However, the literature still lacks consensus on the subject of effect of presence or absence of women executives on firm performance. Many studies have proved that female managers in the company bring significant positive changes in various aspects of firm performance (Kravitz, 2003; Smith, Smith, & Verner, 2006; Dezso & Ross, 2012; Khan & Vieito, 2013; Nakagawa & Schreiber, 2014; Perryman & Tripathy, 2016; Nekhili, Chakroun, & Chtioui, 2018), while some have shown that there is a negative association between female leadership and performance (Darmadi, 2010; Lenard, Yu, York, & Wu, 2014; Satriyo & Harymawan, 2018; Martínez-Zarzoso & Lo Bue, 2021), moreover, a number of studies have shown that there is no significant association between

female leadership in companies and firm performance (Shrader, Blackburn, & Iles, 1997; Dwyer, Richard, & Chadwick, 2003; Adams & Ferreira, 2009).

Gender equality advancement and female representation on the corporate boards has recently become topic of debate in the societal and political spheres. The extent to which gender diversity on board affects the financial success of the corporation may have a crucial role to play in the formulation and implementation of regulations pertaining to promotion of gender diversity (Pletzer, Nikolova, Kedzior, & Voelpel, 2015). The existing literature does not show a clear consensus on the direction of the effect of gender diversity on board on firm financial performance (Webber & Donahue, 2001; Kochan, et al., 2003; Jackson, Joshi, & Erhardt, 2003; Miller & Triana, 2009). Whether gender diverse boards bring positive financial results, negative financial results or no significant changes in financial results are witnessed if the board is made more gender diverse, is still unclear. Various governance theories viz. agency theory, resource dependence theory, human resource theory, social psychology theory, etc. support diversity on board. Advocates of gender diversity on board put forward two lines of arguments i.e. the ethical case of diversity and the business case of diversity (Robinson & Dechant, 1997). The ethical viewpoint of diversity states that gender diversity should be supported on board as it is socially ethical and promotes equality between

genders (Brammer, Millington, & Pavelin, 2007). This viewpoint does not focus on the financial effects of gender diversity on board. On the other hand, the business case of gender diversity holds that higher representation of females on board would result in a significantly positive impact on the financial performance of the company (Robinson & Dechant, 1997).

Furthermore, it has been shown by previous studies that women cooperate more with women as compared to men. There exists higher interdependence and improved cooperation among women in an organisation (Matsa & Miller, 2011; ) As women show higher tendency towards cooperation with women than with men, it can be hypothesised that presence of women in top managerial positions of an organisation will have a magnifying effect on the performance of the firm when there are more women directors present on board. This magnified effect on performance with the dual presence of women in top management and on board could be explained with the increase in female-friendly culture in the company, which would bring out the beneficial aspects of women's attributes like resourceful information exchange, better communication and effective diligence, etc. Moreover, the female managers would receive extra advice from women directors as the workplace boundaries between them would be lesser as compared to male directors.

Based on the postulations of the governance theories and the previous studies on women in upper echelons of a corporation, the following are the hypotheses of the study:

H<sub>1</sub>: An increase in the proportion of women directors on the boards of the companies has significant positive impact on firm performance.

H<sub>2</sub> : Presence of women in the top management positions of a company has a significant positive impact on firm performance.

H<sub>3</sub> : Presence of women in the top management positions of a company positively moderates the effect of gender diversity on board on firm performance.

### **Sample**

The sample for the study comprises of the companies listed in BSE 100 as on March 31, 2021. S&P BSE 100 index comprises of the 100 large cap and mid cap companies that are the representative of 15 diverse industries of the country. The study ranges for a period of 13 years from financial year 2006-07 to financial year 2018-19. The source of data for the study has primarily been the annual reports of the companies for the study period. Elimination of 14 companies was done from the study due to lack of availability of required information in the annual reports or due to unavailability of the annual reports of the company for the complete time period of the study.

### **VARIABLES**

#### **Dependent Variables**

In order to ensure robustness in the results, two accounting-based firm performance measures viz. Return on Assets (ROA) and Return on Capital Employed (ROCE) have been used in the study as dependent variables.

Return on Assets (ROA) having been calculated as the ratio of net income of the company to its total assets reflects the ability of the company to generate profits from the use of its assets. On the other hand, Return on Capital Employed (ROCE) which has been calculated as a ratio of the Earnings Before Interest and Tax (EBIT) to capital employed by the company reflects the efficiency with which the company has employed its capital.

### **Independent Variables**

Gender diversity on the board of the companies has been used as the main independent variable in the study. The proportion of women directors on the board (WDirProp) has been used as a measure of gender diversity. As the proportion of women directors on the board did not exceed 50 percent during the study period, the Blau's index of diversity (Blau) was also used to measure gender diversity on board. Blau's index of diversity is similar to Herfindahl Index, i.e. it increases as the diversity on the board increases. The value of Blau's Index ranges from 0 to 0.5, where 0 represents absence of gender diversity on board and 0.5 represents equal representation of male and female directors on board.

### **Control Variables**

Various variables that may have a significant effect on the financial performance of the firms have been used as the control variables in the study. The selection of such variables has been done after a through review of the usage of these variables in the previous

literature. The control variables for the present study consist of the age of the firm, firm leverage, size of the firm, CEO duality, ratio of independent directors on board and presence of a woman executive in the firm. The age of the firm (LogAGE) has been calculated as the natural logarithm of the total number of years the firm had been in operation from the year of its inception. The natural logarithm of the total assets of the firm has been taken as the proxy for firm size (LogTA). The natural logarithms of the firm age and firm size helps in reducing the scale factor and heterogeneity to a considerable extent (Jaisinghani & Tondon, 2016). The debt-equity ratio has been taken as the proxy for measuring financial leverage (DE) of the firm. CEO duality (CEOD) has been measured with the help of a nominal dummy variable that takes the value 1 in presence of CEO duality on board and 0 otherwise. The proportion of independent directors on board (IndpRatio) has been measured as the ratio of independent directors on board of the firm in a particular year to the total number of directors on board for the year. The presence of a woman executive (WCEOCFO) in the firm has been measured with a nominal dummy variable that takes the value 1 if either a woman CEO or a woman CFO is present in the firm, else takes a value 0. The variable has been used to study whether concomitant presence of a woman executive in the company significantly moderates the effect of gender diversity on board on the financial performance of the company.

## Method

Based on the objectives of the study the effect of gender diversity on board on financial performance of the firm and the moderating effect of concomitant presence of female executives in the firm on performance has been examined with the help of regression analysis. As the data for the study is longitudinal in nature, panel data regression analysis has been used in the study. Panel data estimation techniques consider the individual aspect as well as the time aspect of the data and therefore take the heterogeneity element of the data into account and therefore 'allowing for individual-specific variables' (Gujarati, 2004). Fixed Effects Estimation (FE) and Random Effects Estimation (RE) are the two basic panel data estimation technique. However, as fixed effects estimation technique applies time-demeaning process, it cannot be applied on variables with low or zero 'within-subject variability' (Battaglia & Gallo, 2015; Williams, 2017). As the corporate governance variables do not show much variability over time (Kumar & Singh, 2014; Battaglia & Gallo, 2015), fixed effects estimation technique was not applied on the data. Moreover, as the study focuses more on drawing a general inference for the study population rather than on obtaining individual specific effects, random effects estimation technique was applied (Schaeck & Čihák, 2007). Random effects estimator also aids in reducing the issue of endogeneity in the model to some extent (De, 2003). As stationarity of the variables is a pre-requisite to

the application of econometric models, Levin-Lin-Chu test of stationarity has been applied. Cluster-robust standard errors have been used in the models to control for the possible presence of autocorrelation and heteroscedasticity in the models, using companies as the cluster variable.

### *Model Specification*

The effect of gender diversity on the financial performance of the firm has been studied with the help of two random effects estimation models, wherein two firm financial performance variables viz. ROA and ROCE have been regressed on the two variables used to measure gender diversity viz. Blau and WDirProp, along with the other control variables included in the study.

$$\text{Performance}_{i,t} = \alpha_i + \sum_k \beta_k \text{Gender Diversity}_{k,i,t} + \sum_n \beta_n \text{CV}_{n,i,t} + \lambda_i + \varepsilon_{i,t} \quad (1)$$

Performance is measured by ROA and ROCE. Gender Diversity represents the proportion of women directors on board (WDirProp) or the Blau's Index which measures diversity of the board in terms of gender representation (Blau). CV denotes the control variables used in the study viz. age of the firm, firm leverage, size of the firm, CEO duality, ratio of independent directors on board and presence of a woman executive in the firm. The symbol  $\lambda_i$  represents the unobserved heterogeneity in the model and the symbol  $\varepsilon_{i,t}$  represents the error term of the model.

The interaction effect between gender diversity and presence of women executive and financial performance of the firm has been studied with the

help of two random effects estimation models.

$$Performance_{it} = \alpha_i + \sum \beta_k Gender\ Diversity_{kit} + \sum \beta_n CV_{nit} + \sum \beta_k Interaction_{kit} + \lambda_i + \varepsilon_{it} \quad (2)$$

The term Interaction in the model represents the interaction between

gender diversity variables (WDirProp and Blau) and WCEOCFO. The Table 1 depicts the direction of the expected relationship of the independent variables used in the study with firm performance. The expected relationships as shown in the Table have been based on the postulations and findings of the previous literature.

**Table 1: Expected Relationship of the Variables with Firm Performance**

Symbol	Variable	Expected Relationship	Previous Literature
WDirProp & Blau	Gender Diversity on Board	±	Carter, Simkins, and Simpson (2003), Campbell and Mi'nguez-Vera (2007), Adams and Ferreira (2009),
IndpRatio	Proportion of Independent Directors on Board	+	Bhojraj and Sengupta, (2003) Jackling and Johl, (2009)
LogAGE	Age of the Firm	+	Majumdar (1997), Ang, Cole, and Lin (2000)
LogTA	Size of the Firm	-	Williamson (1967), Raja and Kumar (2005)
DE	Firm's Financial Leverage	+	Campbell and Mi'nguez-Vera (2007), Iqbal and Usman (2018)
CEOD	CEO Duality	-	Lam and Lee (2012), Dogun, Elitas, Agca, and Ogel (2013)
WCEOC-FO	Interaction Term between Gender Diversity on Board and Presence of Women CEO/CFO	+	Matsa and Miller, (2011)

## Results and Discussion

The Table 2 depicts the descriptive statistics of the dependent variables and independent variables used in the study along with two measures of multicollinearity viz. VIF and tolerance values. The mean value of WDirProp

shows that on an average the mean proportion of women directors on the boards of the firms used in the study was 8.4 percent. This shows that albeit the various regulatory measures of SEBI regarding women directors, the position of gender diversity in Indian

firms is still at its infancy. The mean of IndpRatio depicts that on an average the boards of the Indian firms comprise of 52.60 percent independent directors, thereby satisfying the regulatory norms. The antilog of LogAGE, if calculated, will disclose that majority of the firms in the sample are approximately less than 39 years in age. Out of the 1118 cases, a women executive (CEO or CFO) was present in 100 cases (8.90 percent) meaning thereby that in approximately 91 percent of cases, there were no women executives employed in the firm. Some of the many reasons cited for such low representation of women as executives by the previous studies are presence of gender stereotyping, group favouratism, fewer qualified women, family pressure and responsibilities

being more restraining on women than men, etc. (Holmes, 2019; Bollavaram, 2021). The presence of CEO duality was witnessed in approximately 49.30 percent of cases. The multicollinearity between the independent variables was examined with the help of Variance Inflation Factor (VIF) and Tolerance Values. As shown in Table 2 the VIF values for the independent variables are less than 10 and more than 1 (Cho & Kim, 2007; Jackling & Johl, 2009; O'Connell, 2010) along with the tolerance values being more than 0.40 (Allison, 1999), confirms absence of multicollinearity in the models. Levin-Lin-Chu test of stationarity was used to check the presence of unit root in the variables and as depicted by the Table 3 all the variables were stationary at level.

**Table 2: Descriptive Statistics, VIF and Tolerance Values**

Variables	Mean	S.D.	Min	Max	VIF	Tolerance
1. ROA	9.84	18.92	-34.10	250.43	-	-
2. ROCE	17.13	25.69	-305.73	421.74	-	-
3. Blau	0.143	0.11	0	0.48	1.19	0.8432
4.WDirProp	0.084	0.07	0	0.41	1.15	0.8702
5. IndpRatio	0.526	0.11	0.11	1.00	1.03	0.9672
6. LogTA	6.276	0.77	3.48	8.69	1.35	0.7432
7. LogAGE	1.595	0.34	0	2.32	1.04	0.9574
8. DE	2.220	4.40	-9.36	23.05	1.28	0.7810
9. CEOD	-	-	-	-	1.05	0.9554
10. WCEOCFO	-	-	-	-	1.06	0.9471

**Table 3: Levin-Lin-Chu Test of Stationarity**

Variable	t	p-value
1. ROA	-13.4751	0.0000
2. ROCE	-1.5892	0.0000
3. Blau	-1.6920	0.0000
4.WDirProp	-8.4596	0.0000

5. IndpRatio	-8.7677	0.0000
6. LogTA	-6.1546	0.0000
7. LogAGE	-40.0972	0.0000
8. DE	-7.5224	0.0000

### Gender Diversity

The Table 4 depicts the results of regression analysis conducted on board level gender diversity and firm financial performance, concomitantly controlling

for the effects of other variables in the model. The first hypothesis ( $H_1$ ) of the study states that an increase in the proportion of women directors on the boards of the companies has significant positive impact on firm performance.

**Table 4: Gender Diversity and Firm Performance**

	ROA		ROCE	
	(1)	(2)	(3)	(4)
Blau	10.526* (4.960)	-	25.457*** (6.720)	-
WDirProp	-	3.357** (1.250)	-	39.445*** (10.432)
WCEOCFO	-2.960 (2.008)	3.182 (1.959)	-2.602 (2.721)	0.735 (2.669)
IndpRatio	1.007 (0.808)	1.176 (0.814)	-5.988 (6.315)	-5.014 (6.342)
DE	0.704 (1.611)	1.164 (1.624)	0.015 (0.190)	-0.012 (0.190)
LogTA	31.123*** (4.661)	31.347*** (4.655)	5.734*** (1.095)	-5.507 (1.109)
LogAGE	0.704*** (0.140)	0.695*** (0.139)	16.431*** (2.182)	16.161 (2.212)
CEOD	3.311** (1.116)	3.252** (1.113)	3.852** (1.512)	3.453* (1.517)
Intercept	-12.272 (6.283)	-13.363* (6.306)	26.204** (8.512)	25.989 (8.592)
N	1118	1118	1118	1118
Adjusted R <sup>2</sup>	0.7350	0.7579	0.7742	0.7166
LM Test	3799.14***	3764.90***	652.89***	654.77***
Wald Test	41.71***	39.10***	43.22***	42.12***
OLS / RE	RE	RE	RE	RE



As the results depict, the beta co-efficients for the variables Blau and WDirProp are positive numbers and are significant at 0.05, 0.01 and 0.001 significance level for both the proxies of firm performance i.e. ROA and ROCE. This implies that an increase in proportion of women directors on board would result in a significant increase in ROA and ROCE of the company. Therefore, the first null hypothesis of the study stands rejected. If one women director is added to the board of 10 directors, it would result in an increase in the ROA of the company by 10 percent of 3.357 i.e. 0.3357 and increase in ROCE will be witnessed by 10 percent of 39.445 i.e. 3.9445 (Dezso & Ross, 2012).

#### *Women Executives*

The Table 4 depicts the results of regression analysis conducted on presence of women executives in the firm and firm financial performance, concomitantly controlling for the effects of other variables in the model. The second hypothesis ( $H_2$ ) states that presence of women in the top

management positions of a company has a significant positive impact on firm performance. As the results suggest, the beta co-efficients for the variable WCEOCFO are insignificant at 0.05 significance level for both the proxies of firm performance i.e. ROA and ROCE. This implies that presence or absence of women executives in a firm does not have a significant impact on the firm's financial performance. Therefore, we fail to reject the second null hypothesis of the study.

#### *Gender Diversity in the Presence of Women Executives*

According to the third hypothesis of the study ( $H_3$ ), presence of women in the top management positions of a company positively moderates the effect of gender diversity on board on firm performance. Table 5 presents the results of the regression analysis of the effect of gender diversity on firm performance along with the interaction effect of the gender diversity on board and presence of women executives in top management of the company.

**Table 5: Gender Diversity in the Presence of Women Executives and Firm Performance**

	ROA		ROCE	
	(5)	(6)	(7)	(8)
BlauIndex	11.057* (5.019)	-	25.443*** (6.802)	-
WDirProp	-	3.5101** (1.2658)	-	39.384*** (10.548)
WCEOCFO	-9.223 (9.214)	10.283 (9.224)	-2.765 (12.486)	4.0283 (12.5714)

Interaction	6.985 (4.006)	7.447 (4.071)	4.218 (3.152)	3.453 (2.409)
IndpRatio	1.013 (0.808)	1.188 (0.8144)	-5.981 (6.338)	-4.879 (6.365)
DE	0.737 (1.612)	1.220 (1.625)	0.016 (0.190)	-0.009 (0.191)
LogTA	31.381*** (4.677)	31.639*** (4.670)	5.734*** (1.096)	5.502*** (1.109)
LogAGE	0.697*** (0.140)	0.687*** (0.140)	16.432*** (2.184)	16.187*** (2.215)
CEOD	3.267** (1.118)	3.2034** (1.1153)	3.851** (1.515)	3.431* (1.520)
Intercept	-12.432* (6.288)	-13.572* (6.312)	26.200** (8.521)	25.893** (8.603)
N	1118	1118	1118	1118
Adjusted R <sup>2</sup>	0.7301	0.7542	0.7669	0.7162
LM Test	3799.91***	3763.46***	652.87***	654.32***
Wald Test	41.72***	38.84***	42.65***	43.41***
OLS / RE	RE	RE	RE	RE

The main effect of gender diversity on the financial performance of the firm and the main effect of presence of women executives on the financial performance of the firm is unchanged i.e. gender diversity has significant positive impact on both the proxies of firm performance viz. ROA and ROCE and presence of women executives has insignificant effect on the same. However, the co-efficient for the interaction term in the model viz. Interaction is insignificant at 0.05 significance level, denoting thereby that the concomitant presence of women executives in the top management positions of the firm does not significantly moderate the effect of gender diversity on firm financial performance. Therefore, we fail to reject the third null hypothesis of the

study. Granting the insignificance of the interaction term, the co-efficients for the interaction term are positive, indicating that an increase in gender diversity on board in the concomitant presence of women executives in the firm would result in a positive effect on the financial performance of the firm. If a women director is added to a board of 10 directors in a firm where a woman CEO or CFO are appointed, it would result in an increase in the ROA of the firm by 10 percent of 7.447 i.e. by approximately 0.7447 and ROCE would increase by 10 percent of 3.453 i.e. by approximately 0.3453. (Dezso & Ross, 2012) However, this could not be supported with a conclusive evidence.

As expected, LogAGE shows a significant positive effect on the performance of the

firm. Therefore, as the age of the firm increases, it gains higher returns. This may be explained with the fact that with time the company gains experience, gains market share, customer loyalty increases, the firm reaches its optimum capacity of operation, etc. LogTA, which was used in the model as the proxy for firm size also shows a positive and significant effect on firm performance viz. ROA and ROCE. The larger sized companies enjoy economies of scale, experience growth in the market and as a result enjoy higher returns. The debt-equity ratio (DE), which is a measure of leverage of the firm shows an insignificant effect on firm's ROA and ROCE implying thereby that capital structure decisions of a firm might be immaterial in determining its financial performance. Similarly, the results depict that the proportion of independent directors on the board of the firm (IndpRatio) does not significantly affect the performance of the firm in terms of ROA and ROCE. Previous studies on board independence have concluded that the insignificant contribution of independent directors on board to the performance of the firm could be attributed to the factors like insufficient knowledge of these directors about the company and its internal functioning, lack of motivation as they only receive sitting fees to attend the board meetings, lack of training provided to them, etc. However, the significant positive coefficient for the variable CEO duality proves that in the presence of CEO duality in the company, i.e. when the CEO of the company also holds the position of the Chairperson of the board, the firm

would experience a significant decline in its financial performance.

## CONCLUSION

The present study examines the relationship between gender diversity on board and firm financial performance of S&P BSE 100 companies and analyses whether a concomitant presence of women executives in the top management of the company significantly and positively moderates the effect of gender diversity on firm performance. The findings of the study reveal that (a) gender diversity on board has a significant and positive impact on the financial performance of the firm. (b) presence of women executives in the top management positions of the firm does not have a significant effect on the financial performance of the firm. (c) concomitant presence of women executives in the company does not significantly moderate the effect of gender diversity on firm financial performance.

The positive impact of gender diversity on firm financial performance corroborates with the findings of previous studies viz. Brahma, Nwafor, and Boateng (2020), Khidmat, Khan, and Ullah (2020), Dwaikat, Qubbaj, and Queiri (2021), etc. The positive relationship could be explained with the fact that gender diversity brings more innovative and diverse thinking to the board, wider pool of experience, better decision making capabilities, wider perspective to a situation. Moreover, women directors are considered more universally concerned, less self-centered

and more compassionate which would boost better working culture amongst the board members. The insignificant relationship between women executives in top management and firm performance corroborates with the findings of previous studies viz. Shao and Liu (2014), Satriyo and Harymawan (2018), etc. The insignificant relationship can be attributed to the fact that women are still under-represented in the upper echelons of the companies. In our sample firms out of 1118 cases women executives were present in only 100 cases (8.90 percent). Such a low representation of women leads to intense pressure on women executives in a male majority organisation to prove their capabilities. Moreover, the presence of pre-conceived notions about women being weak and less capable to act as an executive has led to women being unable to show their competency to the greatest extent. However, the results of the interaction analysis proves that concomitant presence of women on boards and in top management positions does not significantly and positively affect firm performance. This could be explained with the view that due to minority status of women in upper echelons of the firm, and the dire position of

underrepresentation of women managers in Indian companies, the 'cohesiveness' between the female leaders in the two critical leadership positions of the firm lacks to be on a significant scale. In India, representation of women is only upheld among board of directors by regulatory norms, and there is absence of regulations concerning representation of women in top management positions of the firm. However, witnessing the positive (although insignificant) impact of cooperation of women in different positions of the top management of the firm, regulations must be framed regarding higher representation of women in executive positions of the company. The findings of the study need to be viewed in the light of the following limitations. It has been assumed in the study that a linear relationship exists between gender diversity on board and firm performance, where a curvilinear relationship could exist. The present study uses financial ratios as proxy for firm performance. However, other variables viz. market linked measures, productivity measures, etc. could be used for clearer view on the relationship. Lastly, an increase in the time period of the study along with larger and diverse sample could result in more consistent and robust results.

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