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Impart Quality Business Education that focuses on:  
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# Commerce & Business Researcher

*A Half - Yearly Peer Reviewed Research Publication*

Researchers' Forum, Department of Commerce, University of Kerala

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## Content

Impact of Demographic Variables on Investment Awareness Level Among People in Himachal Pradesh <i>Geeta Rani, S.S. Narta</i>	1
A Study on the Working of Rashtriya Swasthya Bima Yojana (RSBY) <i>Vinod G, Biju T.</i>	15
De-Globalisation: Institutional Preparedness and Entrepreneurship <i>Zaffar Iqbal, Neetu Andotra</i>	25
Repercussion of Covid 19 Upsurge: An Analysis on the Efficaciousness of Autoregressive Models in Volatility and Return Estimation of Bitcoin <i>Moni M, Raju G, Silpa Krishnan MP</i>	35
Adherence of AS-16 Borrowing Costs by Non-Corporate Entities; A Descendant Note <i>John Britto J, V. Joseph James, Sangeetha Vincent</i>	53
Product Involvement and Consumer Knowledge – A study with Special Reference to Branded Jewellery Consumers in Trivandrum District <i>Hareesh Kumar UR</i>	69
The Rationale of Gentle Nudges and its Reflections in the Work Behaviour of Corporate Employees during the Outbreak of Pandemic <i>Aparna A S, Biju A V</i>	79
Jurisprudential Exposition of Intellectual Property Rights <i>Moneyveena.V.R</i>	95

Organic Food Products: Determinants Influencing Buying Behaviour <i>Biju S K</i>	105
Disturbing Non-Performing Asset (NPA) in Priority Sector and Non-Priority Sector Lending (NPSL) Between Public Sector and Private Sector Bank <i>Hashim.M, S. Sajeev</i>	113
A Study on the Effectiveness of Training Programmes in the Promotion of Inland Fisheries in Kerala <i>Anitha. S, Manikantan. G</i>	123
Multi-Layer Analysis on Constraints of Budding Women Investors in Share Trading: A Comparative Study of Women Investors Pertaining to Professional and Non-Professional Fields <i>S. Jayadev, Veena M, Suby Baby</i>	131
Motivational Factors to Join SHGs among the Fisher Folk Community of Kerala <i>Aswani.S.P</i>	139
Role of ESAF Small Finance Bank in Leveraging Financial Services in Rural Area with Special Reference to Thiruvananthapuram District <i>Arathy Krishnan R K., Nimi Dev R</i>	151

## EDITORIAL

Globally, we are under severe constraints with a multitude of apprehensions regarding what is likely to be the growth trajectory for the future. The COVID-19 pandemic, the war in Ukraine, the Sri Lankan economic crisis, and so on are disturbing events.

India is still fighting the COVID-19 pandemic. Let me take this opportunity to place on record our grateful appreciation and acknowledgment of the efforts put in by our Government at the Centre as well as the States in dealing with the pandemic. We salute all our health workers, scientists, researchers in medicine, and the dedicated medical team for their unflagging support in fighting the virus and supporting human life. Our educational institutions and teachers too have played their role in keeping education rights intact and doing everything possible to meet the aspirations of our learners.



The COVID-19 Pandemic has made us think deeply regarding how a virus can restrict mobility and disrupt industry, but the challenges of the same also brought out opportunities for development such as e-learning and online transactions. We are now compelled to think beyond the limitations of time and space, caring for all our resources, and making judicious use of the same. Sustainable models of development and best use of resources have now emerged as key transformational thoughts. Best use of local resources and most efficient use of human power have occupied the centre stage in world economy.

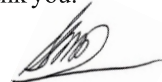
The unprecedented impact of technology, on not just industry, but all walks of human life is indeed phenomenal. Transforming challenges into opportunities and working under the emerging New Normal is what we need to learn and adopt. Moving into the virtual space with e-learning, MOOCs, and advanced ICT tools like Artificial Intelligence and Machine Learning systems is what will empower us. We need to transform and re-engineer ourselves into this demanding environment and all of us are now attempting to work as a team on this. Research and academia need to address disruptive technology, stay relevant through proper readjustment, and refocus to accommodate the demanding conditions. Products, processes, and systems that are in use today may turn out to be obsolete soon. Working with technology and digital resources would demand more specific re-engineered skills and competencies. HEIs should be change agents in imparting the same.

Several innovations are emerging in the fields of Environment Accounting, Environment Audit, Climate Change financing, and so on. Gone are the days when we could look at finance as simply raising funds and using them and at accounting as just preparing the statements on annual results. Wise and judicious use of scarce resources and tracking fund usage in terms of impact on human life are turning out to be important.

Commerce and Business Researcher, the journal of the Researchers' Forum, Department of Commerce, University of Kerala would like to showcase pertinent research outcomes in the domains of business, trade, and industry, as well as trans-disciplinary research, which could open up new avenues for the industry and professional organizations as well as policy makers. Such research is a movement from data to information, from information to knowledge, and ultimately, from knowledge to wisdom.

I take this opportunity to thank all the contributors of research papers to this issue and sincerely request all my friends to come up with more research work and research publications, which we would gladly welcome. I also thank all our subscribers and the editorial team. I acknowledge with sincere gratitude the timely intellectual support from our reviewers. I request all our readers and well wishers to kindly give us suggestions and valuable inputs on improving the journal.

Wishing you all the very best and hoping to see quality research papers in the future, let me conclude anticipating resilience in our economy, industry, and human endeavours. Thank you.



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# Impact of Demographic Variables on Investment Awareness Level Among People in Himachal Pradesh

Geeta Rani <sup>(1)</sup> S.S. Narta <sup>(2)</sup>

## *Abstract*

Household saving and investment are some of the major factors for supplying capital in the economy. As investment habits of households depend upon their awareness about different available investment avenues, it is necessary to know their awareness level. The present study is an attempt to analyse the awareness level of people in Himachal Pradesh about various investment avenues on the basis of their demographic profile. The research was conducted by using a structured questionnaire from 540 sample respondents on the basis of multi stage sampling. The collected data was analysed with the help of different statistical tools like, mean, standard deviation, skewness, and chi square. The findings of the study reveal that people are highly aware about Bank Deposit schemes followed by Life Insurance Schemes, Post Office Saving Schemes, Provident Funds and Gold & Jewellery whereas, very less people are aware about Derivatives, Share Market and Mutual Funds.

**Keywords:** Investment, Awareness, Household, Avenues, Demographic, Share Market.

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## **Introduction**

Household saving and investment are some of the major factors for supplying capital in the economy. Investment habits of people depend upon their awareness about different available investment avenues. Hence, it is necessary to understand the awareness level of people about different available investments avenues. It is a general perception that youth are more aware about investment avenues as compared to the old generation and that as the education level increase, awareness about various investment avenues also increases. Furthermore, it is

presumed that people in government jobs are more aware about investment avenues. Hence, the present study is undertaken to know the impact of selected demographic variables on the awareness level of people on various investment avenues.

## **Literature Review**

For the present research, different studies on investment behaviour have been reviewed. Geetha & Ramesh (2011) has examined the factors affecting investment behaviour and attitude of investors regarding different investment schemes. The study shows that investors

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are less aware about the stock market, equity, bonds and debentures, while they are highly mindful of insurance, PPF, bank deposits, small saving like post office saving etc. on the other hand It was also found that safety is most influencing factor for investment behaviour followed by return, protection of investment, liquidity and risk performance. Jain & Mandot (2012) made an attempt to explore the relationship between risk level and demographic variables of investors. The finding of the study shows that demographic variables like age, marital status, gender, city, income level, market knowledge, occupation and qualification have major influence on the investment behaviour while gender and city have no influence on investment behaviour. Hence, the paper concluded that the demographic factors have significance influence over the risk perception factors of the investors. Gurusamy & Sreepriya (2013) in their study finds that majority of respondents are highly educated about the investment opportunities. It also reveals that most of the respondents prefer long-term investments, whereas bank deposits are the most preferred source of investment and investors have not to face any problem on their bank investments. The study concluded that there is significant relationship between education qualification and investment awareness among the respondents. Rastogi (2013) has carried out an empirical study to find out the influence of saving and investment pattern on respondents. The study shows that out of various investment avenues, most of the respondents have a high degree of awareness about the bank deposits and real estates. Gender has no effect on the awareness level while, salaried respondents have better awareness about the investment schemes. On the other hand, safety and income followed by liquidity, capital appreciation and tax benefits are the main objectives of the respondents.

Ishwara (2014) reveals that respondents behave positively while choosing their investment schemes. The study shows that majority of the respondents are less aware about the marketable securities. People who live in urban area are more aware about investment avenues than people live in semi urban area. Further, the male respondents are found more aware about the investment avenues as compared to their counterparts.

**Research Gap:** The review of literature on various studies reveals that majority of studies have mainly focused on the risk perceptions of investors on different investment schemes. The existing studies covers factors influencing investment decisions like risk factors, attitude towards saving and investment, tax saving planning etc. However, no study has been carried out in Himachal Pradesh to know the impact of demographic variables on investment awareness level.

### Objective of the Study

- To analyse the impact of demographic variables on awareness level.

### Hypotheses

In the light of objective of the study and after a review of the existing literature on the subject, the following hypotheses have been developed for testing:

- H<sub>0</sub>1: There is no significant impact of demographic variables on awareness level of people.
- H<sub>a</sub>1: There is significant impact of demographic variables on awareness level of people.

### Research Methodology

The present study which is descriptive research, is primarily based on field survey, which was conducted in the year 2019 with the help of a structured schedule to gather

information from the sample respondents. Multi stage sampling method was used to select 540 respondents, 180 each from three districts viz. highly developed (Shimla), moderately developed (Kangra) and less developed (Kinnaur). Awareness level and impact of selected demographic variables on various investment avenues was analysed with the help of descriptive statistics by using Five Point Likert Scale, Standard Deviation, Skewness and Chi square. Further, ANOVA technique is used to study the impact of demographic variables on awareness level of people.

### Results and Discussions

Vast majority of the respondents are either fully aware or aware about the investment in various Bank Deposits Schemes (90.56 percent), Life Insurance Schemes (73.0 percent), Post Office Saving Schemes (69.0 percent) and Pension Funds schemes (57.57 percent) whereas, only one third of the respondents are aware about Mutual Fund Schemes and only an insignificant number of respondents are aware about Share Market and Derivatives. Half of the sample respondents are either fully aware or aware about investment in physical assets.

**Table 1**  
Descriptive Statistics on Awareness Level on Selected Investment Avenues

Investment Avenues	Highly Aware	Aware	Moderate Aware	Less Aware	Not Aware	Mean	S. D	Skew.	Chi Square
<b>Financial Assets:</b>									
Bank Deposits	287(53.15)	202(37.41)	41(7.59)	5(0.93)	5(0.93)	4.41	1.14	-1.49	0.00
Provident Funds	132(24.44)	180(33.33)	142(26.30)	51(9.44)	35(6.48)	3.60	1.10	-0.59	0.00
Post Office Savings	156(28.44)	219(40.56)	96(17.78)	39(7.22)	30(5.56)	3.80	0.98	-0.92	0.00
Life Insurance Schemes	151(27.96)	245(45.37)	90(16.67)	40(7.41)	14(2.59)	3.89	1.15	-0.90	0.00
Pension Funds	67(12.41)	192(35.56)	150(27.78)	78(14.44)	53(9.81)	3.26	1.18	-0.42	0.00
Mutual Funds	45(8.33)	139(25.74)	155(28.70)	123(22.78)	78(17.44)	2.90	1.18	-0.05	0.00
Share Market	41(7.59)	98(18.15)	151(27.96)	156(28.89)	94(17.41)	2.69	1.08	0.24	0.00
Derivatives	20(3.70)	50(9.26)	169(31.30)	159(29.44)	142(26.30)	2.34	1.14	0.44	0.00
<b>Physical Assets:</b>									
Real Estates	87(16.10)	160(29.60)	141(26.10)	79(14.60)	73(13.50)	3.20	1.26	-0.31	0.00
Business	109(20.19)	169(31.30)	149(27.59)	62(11.48)	51(9.44)	3.41	1.20	-0.46	0.00
Gold & Jewellery	101(18.70)	200(37.04)	136(25.19)	58(10.74)	45(8.33)	3.47	1.16	-0.58	0.00
Live Stock	101(18.70)	170(31.48)	132(24.44)	83(15.37)	54(10.00)	3.33	1.23	-0.38	0.00

Note: Figures in parenthesis depict percentage.

Source: Data collected through Questionnaire.

Mean score of responses on awareness level is found to be the highest in Bank Deposits (4.41) followed by Life Insurance Schemes (3.89), Post Office Saving Schemes (3.80) and Provident Funds (3.60) whereas, mean score of the responses on awareness level was found below average on Derivatives (2.34), Share Market (2.69) and Mutual Funds (2.90). Mean score of responses on awareness level on investment in physical assets was found highest in Gold & Jewellery (3.47) followed by Business (3.41), Live- stock (3.33) and Real Estates (3.20). Further, significant variations in the responses on awareness level was found in Real Estates (1.26), Live Stock (1.23), Business (1.20) and Mutual Funds (1.18). The negative value of the skewness shows that majority of the responses fall on the higher side of

mean value whereas, responses on Share Market and Derivatives fall on lower side of mean value. While applying  $\chi^2$  test, p values have been found less than the table values at 1 percent level of significance for all the selected investment avenues.

**Age-Wise Awareness**

Mean score of responses on awareness on Bank Deposits (4.58) Provident Funds (3.88) Post Office Saving Schemes (3.94) and Life Insurance Schemes (3.96) was found high among the respondents in the age group between 30-45 years, whereas mean score of responses on awareness about Mutual Fund (3.24), Share Market (3.10) and Derivatives (2.17) was found highest among respondents below 30 years of age (Table 1.1).

**Table 1.1**  
Age-Wise Descriptive Statistics on Awareness About Investment Avenues

Investment Avenues	Age (Years)												Chi Square	F Test
	Below 30			30-45			45-60			Above 60				
	Mean	S. D	Skew.	Mean	S. D	Skew.	Mean	S. D	Skew.	Mean	S. D	Skew.		
<b>Financial Assets:</b>														
Bank Deposits	4.37	0.76	-1.57	4.58	0.59	-1.26	4.32	0.82	-1.31	4.18	0.95	-1.38	0.00	0.01
Provident Funds	3.55	1.03	-0.55	3.88	1.08	-0.79	3.44	1.26	-0.47	3.12	1.54	-0.11	0.00	0.00
Post Office Saving	3.92	0.99	-0.94	3.94	0.97	-0.73	3.54	1.28	-0.77	3.59	1.37	-0.79	0.00	0.00
Life Insurance Schemes	3.89	0.97	-1.07	3.96	0.93	-0.72	3.83	1.01	-0.77	3.65	1.37	-0.93	0.12	0.50
Pension Funds	3.46	1.02	-0.78	3.32	1.11	-0.35	3.01	1.25	-0.09	2.59	1.46	0.55	0.00	0.00
Mutual Funds	3.24	1.14	-0.62	2.99	1.15	-0.01	2.39	1.07	0.63	2.76	1.35	0.31	0.00	0.00
Share Market	3.10	1.15	-0.31	2.73	1.15	0.33	2.15	0.97	0.80	2.35	1.46	1.09	0.00	0.00
Derivatives	2.71	1.04	-0.18	2.35	1.08	0.64	1.87	0.87	0.97	2.24	1.52	1.12	0.00	0.00



<b>Physical Assets</b>														
Real Estates	3.01	1.21	-0.28	3.18	1.20	-0.24	3.37	1.31	-0.43	4.18	1.42	-1.67	0.00	0.00
Business	3.63	1.14	-0.70	3.22	1.13	-0.23	3.24	1.28	-0.35	4.00	1.27	-1.23	0.00	0.00
Gold & Jewellery	3.52	1.08	-0.69	3.53	1.08	-0.56	3.31	1.30	-0.41	3.82	1.33	-0.89	0.00	0.13
Live Stock	3.26	1.14	-0.39	3.17	1.26	-0.18	3.52	1.27	-0.57	4.06	1.25	-1.43	0.00	0.00
<b>Overall Mean</b>		3.47			3.40			3.17			3.38			

Note: Figures in parenthesis depict percentage.

Source: Data collected through Questionnaire.

Further, respondents above 60 years of age are more aware about investment in real estates (4.18), Live- Stock (4.06), Business (4.0) and Gold & Jewellery (3.82). Hence, it can be inferred that younger generation are more aware about investment in financial assets whereas, older generation is more aware about physical assets. The negative value of skewness shows that majority of the responses fall on the higher side of the mean score. Chi Square value is less than the p-value at 1 percent level of significance, which shows that age has significant impact on the awareness level on all selected investment avenues except life insurance schemes. A significant difference between mean score of awareness for different investment avenues on the basis of age of the respondents except for life insurance and gold/jewellery has been found (Table 1.1).

The POST HOC result as shown in the table 1.1(b) reveals that there is a significant difference in the awareness level among the respondents belonging to 30 years of age on bank deposits as compared to respondents belonging to age group between 30-45 years, at 5 percent level of significance. Similarly, significant difference in the awareness level on bank deposits schemes among respondents in the age group between 30-45 years have been observed while comparing it with the respondents in the age group between 45-60 years. Further, a significant difference in the awareness level on provident funds among the respondents below 30 years of age with 30-45 years and respondents in the age group between 30-45 years with 45-60 years and above 60 years at 5 percent level of significance has been observed.

**Table 1.1(a)**  
Post Hoc Results

		Age (in years)			
		Below 30	30-45	45-60	Above 60
Bank Deposits	Below 30			.04308	.19145
	30-45	.21000*		.25308*	.40145
	45-60	-.04308	-.25308*		.14837
	Above 60	-.19145	-.40145	-.14837	
Provident Funds	Below 30		-.32474*	.11240	.43424
	30-45	.32474*		.43713*	.75898*
	45-60	-.11240	-.43713*		.32184
	Above 60	-.43424	-.75898*	-.32184	
Post Office Saving Schemes	Below 30		-.01997	.38006*	.32686
	30-45	.01997		.40003*	.34683
	45-60	-.38006*	-.40003*		-.05320
	Above 60	-.32686	-.34683	.05320	
Life Insurance Schemes	Below 30		-.06953	.05711	.24445
	30-45	.06953		.12664	.31398
	45-60	-.05711	-.12664		.18734
	Above 60	-.24445	-.31398	-.18734	
Pension Funds	Below 30		.13759	.45589*	.87403*
	30-45	-.13759		.31831	.73644
	45-60	-.45589*	-.31831		.41813
	Above 60	-.87403*	-.73644	-.41813	
Mutual Funds	Below 30		.25355	.84566*	.47586
	30-45	-.25355		.59211*	.22231
	45-60	-.84566*	-.59211*		-.36980
	Above 60	-.47586	-.22231	.36980	
Share Market	Below 30		.36529*	.94619*	.74612*
	30-45	-.36529*		.58090*	.38083
	45-60	-.94619*	-.58090*		-.20007
	Above 60	-.74612*	-.38083	.20007	
Derivatives	Below 30		.35690*	.84131*	.47225
	30-45	-.35690*		.48441*	.11536
	45-60	-.84131*	-.48441*		-.36905
	Above 60	-.47225	-.11536	.36905	

	Below 30		-.16767	-.35528*	-1.16232*
Real Estates	30-45	.16767		-.18761	-.99465*
	45-60	.35528*	.18761		-.80704
	Above 60	1.16232*	.99465*	.80704	
Business	Below 30		.41130*	.39004*	-.36792
	30-45	-.41130*		-.02126	-.77922
	45-60	-.39004*	.02126		-.75796
Live-Stocks	Above 60	.36792	.77922	.75796	
	Below 30		.09060	-.26286	-.79939*
	30-45	-.09060		-.35346	-.88999*
	45-60	.26286	.35346		-.53653
	Above 60	.79939*	.88999*	.53653	

Source: Primary data

\*Denotes that the mean difference is significant at 5 percent level.

Further, a significant difference in the perception on awareness level among respondents having 45-60 years of age have been observed while comparing it with the respondents below 30 years and 30-45 years of age on post office saving schemes at 5 percent level of significance. Whereas, a significant difference in the awareness level among respondents below 30 years of age on pension funds has been found while comparing it with respondents in the age group between 45-60 years and above 60 years of age. A significant difference in the awareness level of the respondents 45-60 years of age while comparing it with the respondents below 30 years and 30-45 years of age at 5 percent level of significance has been observed on mutual fund whereas, a significant difference in the awareness level among the respondents below 30 years of age on share market, derivatives and real estates has been found while comparing it with

the respondents belonging to other age groups at 5 percent level of significance. Moreover, a significant difference in the awareness level on investment in business and live- stock among respondents below 30 years of age at 5 percent level of significance has been found while comparing it with respondents belonging to age group between 30-45 and 45-60 years.

### Education-Wise Awareness

Mean score of the responses among graduate respondents on awareness about Bank Deposits (4.48), Post Office Saving Schemes (3.83) and Life Insurance Schemes (4.05) was found high whereas, mean score of responses on awareness on Provident Funds (3.83), Pension Funds (3.45), Mutual Fund (3.24), Share Market (3.10) and Derivatives (2.17) was found high among post graduate respondents (Table1.2).

**Table 1.2**  
Education-Wise Descriptive Statistics on Awareness About Investment Avenues

Investment Avenues	Qualifications												Chi Square	F Test
	Undergraduate			Graduate			Postgraduate			Professional				
	Mean	S. D	Skew.	Mean	S. D	Skew.	Mean	S. D	Skew.	Mean	S. D	Skew.		
<b>Financial Assets:</b>														
Bank Deposits	4.34	0.79	-1.43	4.48	0.73	-1.75	4.47	0.67	-1.10	4.28	0.88	-1.62	0.44	0.13
Provident Funds	3.15	1.26	-0.21	3.74	1.09	-0.59	3.83	1.01	-0.75	3.67	1.07	-0.76	0.00	0.00
Post Office Saving	3.69	1.23	-0.91	3.86	1.11	-0.95	3.87	1.03	-0.86	3.74	0.99	-0.86	0.00	0.39
Life Insurance Schemes	3.72	1.11	-0.81	4.05	0.96	-1.16	3.92	0.89	-0.71	3.86	0.94	-0.87	0.10	0.05
Pension Funds	2.96	1.18	-0.27	3.30	1.17	-0.25	3.45	1.08	-0.60	3.36	1.13	-0.64	0.01	0.00
Mutual Funds	2.43	1.10	0.34	2.87	1.18	0.00	3.25	1.07	-0.32	3.10	1.28	-0.19	0.00	0.00
Share Market	2.29	1.08	0.71	2.73	1.16	0.27	3.01	1.14	-0.03	2.67	1.24	0.13	0.00	0.00
Derivatives	2.03	0.95	0.76	2.30	1.11	0.48	2.63	1.09	0.21	2.36	1.07	0.30	0.00	0.00
<b>Physical Assets</b>														
Real Estates	2.81	1.28	0.00	3.61	1.21	-0.54	3.15	1.16	-0.34	3.40	1.31	-0.60	0.00	0.00
Business	3.13	1.28	-0.28	3.67	1.14	-0.62	3.35	1.19	-0.37	3.69	1.03	-0.70	0.02	0.00
Gold & Jewellery	3.02	1.27	-0.08	3.53	1.17	-0.64	3.60	1.05	-0.68	3.97	0.80	-0.95	0.00	0.00
Live Stocks	3.18	1.32	-0.27	3.55	1.18	-0.55	3.16	1.20	-0.18	3.72	1.04	-0.74	0.00	0.00
<b>Overall Mean</b>	3.06			3.47			3.47			3.49				

Note: Figures in parenthesis depict percentage.

Source: Data collected through Questionnaire.

Further mean score of responses on awareness on Business (3.69), Gold & Jewellery (3.97), Live- stock (3.72) was found high among professionally qualified respondents whereas awareness on Real Estates (3.61) was found high among graduate respondents. The negative value of skewness shows that majority of the

responses fall on the higher side of the mean value. ANOVA results on awareness about investment avenues on the basis of education level of respondents indicates a significant difference in the responses in all investment avenues except bank deposits and post office savings.

**Table 1.2 (a)**  
Post Hoc Results

Investment Avenues	Education				
	Undergraduate	Graduate	Postgraduate	Professional	
Provident Funds	Undergraduate		-.58909*	-.67462*	-.51333*
	Graduate	.58909*		-.08553	.07576
	Postgraduate	.67462*	.08553		.16129
	Professional	.51333*	-.07576	-.16129	
Life Insurance Schemes	Undergraduate		-.32545*	-.19935	-.14111
	Graduate	.32545*		.12610	.18434
	Postgraduate	.19935	-.12610		.05824
	Professional	.14111	-.18434	-.05824	
Pension Funds	Undergraduate		-.33545	-.48624*	-.40111
	Graduate	.33545		-.15078	-.06566
	Postgraduate	.48624*	.15078		.08513
	Professional	.40111	.06566	-.08513	
Mutual Funds	Undergraduate		-.44455*	-.82065*	-.67056*
	Graduate	.44455*		-.37610*	-.22601
	Postgraduate	.82065*	.37610*		.15009
	Professional	.67056*	.22601	-.15009	
Share Market	Undergraduate		-.44152*	-.71204*	-.37333
	Graduate	.44152*		-.27053	.06818
	Postgraduate	.71204*	.27053		.33871
	Professional	.37333	-.06818	-.33871	
Derivatives	Undergraduate		-.26879	-.60774*	-.33444
	Graduate	.26879		-.33895*	-.06566
	Postgraduate	.60774*	.33895*		.27330
	Professional	.33444	.06566	-.27330	
Real Estates	Undergraduate		-.80697*	-.34387	-.59611*
	Graduate	.80697*		.46310*	.21086
	Postgraduate	.34387	-.46310*		-.25224
	Professional	.59611*	-.21086	.25224	
Business	Undergraduate		-.54000*	-.22817	-.56778*
	Graduate	.54000*		.31183	-.02778
	Postgraduate	.22817	-.31183		-.33961
	Professional	.56778*	.02778	.33961	

Gold & Jewellery	Undergraduate		-.51030*	-.57677*	-.95222*
	Graduate	.51030*		-.06647	-.44192*
	Postgraduate	.57677*	.06647		-.37545
	Professional	.95222*	.44192*	.37545	
Live Stocks	Undergraduate		-.36545	.01871	-.54222*
	Graduate	.36545		.38416*	-.17677
	Postgraduate	-.01871	-.38416*		-.56093*
	Professional	.54222*	.17677	.56093*	

Source: Primary data

\*Denotes that the mean difference is significant at 5 percent level.

Post Hoc result shows a significant difference in responses on awareness level about provident funds and mutual funds among undergraduate respondents (Table 1.2(b)). Further, difference in awareness level on life insurance schemes and pension fund was found highly significant among under graduate respondents while comparing it with graduate and post graduate respondents at 5 percent level of significance. Similarly, significant difference in the awareness level among undergraduate respondents on share market and derivatives has been found while comparing it with graduate and post graduate respondents. Furthermore, mean difference on real estates has been found highly significant among undergraduate respondents while comparing it with graduate and professional respondents whereas, a significant difference in the awareness among graduate respondents was found while comparing it with post

graduate respondents. Further mean difference on awareness on investment in business and jewellery is highly significant among undergraduate respondents while comparing it with graduate and professional respondents whereas, significant difference in the awareness on live- stock was found among undergraduate respondents with professional respondents and graduate respondents with post graduate respondents.

### Occupation -Wise Awareness

Mean score of the responses on awareness on Bank Deposits (4.59) Provident Funds (4.05), Post Office Saving Schemes (3.94), real estates (3.41), Gold & Jewellery (3.68) and Live- stock (3.45) was found high among salaried class while mean score of responses on awareness about investment in business (3.45) was found high among self- employed respondents (Table 1.3).

**Table 1.3**  
Occupation -wise Descriptive Statistics on Awareness About investment Avenues

Investment Avenues	Occupation									Chi Square	F Test
	Agriculture/Horticulture			Self Employed			Salaried Employees				
	Mean	S. D	Skew.	Mean	S. D	Skew.	Mean	S. D	Skew.		
<b>Financial Assets:</b>											
Bank Deposits	4.26	0.57	-0.06	4.31	0.86	-1.49	4.59	0.69	-1.99	0.00	0.00
Provident Funds	3.13	1.20	-0.57	3.40	1.08	-0.27	4.05	1.01	-0.96	0.00	0.00
Post Office Saving	3.65	1.00	-0.78	3.73	1.15	-0.95	3.94	1.11	-1.03	0.01	0.34
Life Insurance Schemes	3.83	0.91	-0.72	3.75	1.01	-0.91	4.05	0.98	-1.05	0.00	0.01
Pension Funds	3.04	1.03	-0.55	3.06	1.18	-0.36	3.57	1.11	-0.52	0.00	0.00
Mutual Funds	2.77	1.08	0.03	2.65	1.22	0.17	3.22	1.12	-0.25	0.00	0.00
Share Market	2.50	0.95	0.03	2.53	1.17	0.43	2.95	1.24	0.01	0.00	0.00
Derivatives	2.28	0.93	-0.01	2.19	1.06	0.58	2.53	1.14	0.40	0.00	0.00
<b>Physical Assets</b>											
Real Estates	3.01	1.27	-0.16	3.09	1.33	-0.22	3.41	1.16	-0.43	0.01	0.01
Business	3.33	1.15	-0.45	3.45	1.27	-0.53	3.42	1.17	-0.42	0.18	0.69
Gold & Jewellery	3.32	1.09	-0.54	3.34	1.28	-0.41	3.68	1.04	-0.76	0.00	0.00
Live Stocks	3.35	1.27	-0.49	3.20	1.27	-0.19	3.45	1.16	-0.48	0.04	0.10
<b>Overall Mean</b>		3.21			3.23			3.57			

Note: Figures in parenthesis depict percentage.

Source: Data collected through Questionnaire.

The negative value of skewness shows that majority of the responses fall on the higher side of the mean value. A significant difference in the perceptions of respondents on the basis of their occupation on awareness about investment avenues except in business and live stocks was observed.

The POST HOC result shows that there is a significant difference in the awareness level of respondents engaged in Agriculture/Horticulture activities as

compared to Salaried respondents on bank deposit schemes, provident funds, pension funds, mutual funds, share market, real estate, and gold & jewellery (Table 1.3 (b)). Similarly, a significant difference in the awareness level among self-employed respondents on bank deposit schemes, provident funds, pension funds, mutual funds, share market, real estate and gold & jewellery has been found while comparing it with respondents engaged in government jobs.

**Table 1.3(a)**  
Post Hoc Results

Investment Avenues	Occupations	Agriculture/ Horticulture	Self Employed	Salaried Employees
Bank Deposits	Agriculture/Horticulture		-.04860	-.32882*
	Self Employed	.04860		-.28023*
	Salaried Employees	.32882*	.28023*	
Provident Funds	Agriculture/Horticulture		-.27104	-.92087*
	Self Employed	.27104		-.64983*
	Salaried Employees	.92087*	.64983*	
Post Office Saving Schemes	Agriculture/Horticulture		-.08267	-.29495*
	Self Employed	.08267		-.21228
	Salaried Employees	.29495*	.21228	
Life Insurance Schemes	Agriculture/Horticulture		.07252	-.22087
	Self Employed	-.07252		-.29340*
	Salaried Employees	.22087	.29340*	
Pension Funds	Agriculture/Horticulture		-.02269	-.52714*
	Self Employed	.02269		-.50445*
	Salaried Employees	.52714*	.50445*	
Mutual Funds	Agriculture/Horticulture		.11815	-.45810*
	Self Employed	-.11815		-.57626*
	Salaried Employees	.45810*	.57626*	
Share Market	Agriculture/Horticulture		-.03465	-.45413*
	Self Employed	.03465		-.41947*
	Salaried Employees	.45413*	.41947*	
Derivatives	Agriculture/Horticulture		.08193	-.25252
	Self Employed	-.08193		-.33445*
	Salaried Employees	.25252	.33445*	
Real Estates	Agriculture/Horticulture		-.08078	-.40451*
	Self Employed	.08078		-.32374*
	Salaried Employees	.40451*	.32374*	
Gold & Jewellery	Agriculture/Horticulture		-.01997	-.36223*
	Self Employed	.01997		-.34227*
	Salaried Employees	.36223*	.34227*	

Source: Primary data

\*Denotes that the mean difference is significant at 5 percent level.

A significant difference on awareness level on post office saving schemes among respondents engaged in agriculture/horticulture activities has been observed while comparing it with respondents in government jobs. Further a significant difference in the awareness level among self- employed respondents on life



insurance schemes and derivatives has been observed while comparing it with salaried class respondents.

## Conclusion

It can be summed up that people are highly aware about Bank Deposit schemes followed by Life Insurance Schemes, Post Office Saving Schemes, Provident Funds and Gold & Jewellery; whereas, very less respondents are aware about Derivatives, Share Market and Mutual Funds. Respondents in the age group between 30-45 years are more aware about Bank Deposits followed by Provident Funds, Post Office Saving Schemes and Life Insurance Schemes while, respondents above 60 years of age are more aware about investment in real estates, Live- Stock, Business and Gold & Jewellery. Younger generations are found more aware about investment in financial assets whereas, older generation is more aware about investment in physical assets. Awareness level of graduate respondents and those in government jobs, has been found more on Bank Deposits, Post Office Saving Schemes, Life Insurance Schemes, Gold & Jewellery and Live- Stock whereas, awareness level on Provident Funds, Pension Funds, Mutual Fund, Share Market and Derivatives has been found high among Postgraduate respondents.

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# A Study on the Working of Rashtriya Swasthya Bima Yojana (RSBY)

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## *Abstract*

Risk and uncertainty are incidental to life. These risk and uncertainties are increasing day by day due to increase in fastness in life. To provide against risk and insecurity of human life, insurance came into being. The main underlying principle of insurance is the pooling of risks. Health insurance is bought to cover medical costs for expensive treatments. It is a running fact that the premium on health insurance schemes is too expensive and unaffordable to an average human being. In this regard government responsibility to ensure the health security and health insurance to the financially unsecured becomes a crying need of the hour. To address the mentioned issue, Rashtriya Swasthya Bima Yojana (RSBY), a health insurance scheme for Below Poverty Line (BPL) families has been launched by the Ministry of Labour and Employment, Government of India. Literature shows that the benefit of the scheme is largely confined to rural India than urban. Further it raises the need to reach out to the poorest and the most vulnerable sections of the society, and make available affordable health care to them. Studies further reveals the fact that almost 50 percent of BPL households were found to be poor and only 30 percent of them were aware of RSBY. Lower awareness level and poor penetration are found to be the major hurdles. The beneficiaries of the scheme experience delays of several months to avail the smart cards; poor knowledge of how and where to utilize the scheme; hospitals not trained to use card-reading technology; and month-long delays and arbitrary caps in the reimbursement of treatment expenses to hospitals. Being this as the fact it would be meaningful to see the awareness of people of Kerala about the scheme, the rate of enrollment, the difficulties in enrollment and their real experience as the beneficiaries of the scheme.

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## **Introduction**

Wealth is an important constituent of human resource development. Good health is the real wealth of society. It not only increases human efficiency but also decreases private and public expenditure on sickness and diseases. Health has been declared as a fundamental human right. The present concern in both developed

and developing countries is not only to reach the whole population with adequate healthcare services but also to secure an acceptable level of health for all through the application of primary healthcare programs. Healthcare services help to reduce infant mortality rate, check crud death rate, keep diseases under control and raise life expectancy. Health insurance is

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fast emerging as an important mechanism to finance health care needs of the people. The need for an insurance system that works on the basic principle of pooling of risks of unexpected costs of persons falling ill and needing hospitalization by charging premium from a wider population base of the same community.

### **Concept of Health Insurance**

Health insurance is a method to finance healthcare. The International Labour Organisation (ILO) defines health insurance as “the reduction or elimination of the uncertain risk of loss for the individual or household by combining a larger number of similarly exposed individuals or households who are included in a common fund that makes good the loss caused to any one member”. To put it more simply, in a health insurance programme, people who have the risk of a certain event contribute a small amount (premium) towards a health insurance fund. This fund is then used to treat patients who experience that particular event (e.g. hospitalization). Today many countries are shifting to health insurance as a mechanism of financing their healthcare programme.

Most health insurance schemes can be classified into three broad categories, social health insurance, private health insurance and community (or micro) health insurance. In India, we have a fourth category called government-initiated health insurance schemes that do not fit into any of the above three categories. Each has its own specificities. However, there are some features that overlap among the three. The government usually introduces this type of schemes for the poorest and the most vulnerable sections of the community. In many of the schemes, the premium amount is paid by the people or totally subsidized by the government. Rarely, the community may

be expected to pay a token amount. The insurance company or an independent body is the organizer of the scheme. These schemes last for a couple of years, depending on the political will and longevity of the government. These are seen more as populist welfare schemes rather than a long-lasting intervention.

### **Rashtriya Swasthya Bima Yojana (RSBY)**

Rashtriya Swasthya Bima Yojana (RSBY), literally “National Health Insurance Program” is a government-run health insurance scheme for the Indian poor. It accommodates cashless protection for hospitalization out in the open and additionally private doctor’s facilities. The scheme began enlisting on April 1, 2008 and has been executed in 25 states of India. A sum of 3.5 crore families have been enlisted in 2017-18 (PIB Delhi 2017). The RSBY is a venture having a place with the Ministry of Labor and Employment. Presently it has been exchanged to Ministry of Health and Family Welfare from April 1, 2015. The scheme has won acclamations from the World Bank, the UN and the ILO as noted RSBY is one of the world’s best Health insurance schemes ([rsby.gov.in](http://rsby.gov.in)). One of the big changes that this scheme entails is bringing investments to UN served areas. Most private investments in healthcare in India have focused on tertiary or specialized care in urban areas. For people living below poverty line, an illness not only represents a permanent threat to their income earning capacity, in many cases it could result in the family falling into a debt trap. When the need to get the treatment arises for poor families, they often ignore it because of lack of resources, fearing wage loss or they wait till the last moment when it is too late. Even if they do decide to get the desired healthcare, it consumes their savings forces them to sell their assets and property, or cut other important spending

like children's education. Alternatively, they have to take on huge debts. Ignoring the treatment may lead to unnecessary suffering and death while selling property or taking debts may end a family's hope of ever escaping poverty. These tragic outcomes can be avoided through a health insurance. Which shares the risk of a major health shock across many households by pooling them together. A well designed and implemented health insurance scheme may both increase access to health care and may even improve its quality over time.

### **Concept of RSBY**

RSBY was propelled by the Ministry of Labour and Employment, Government of India to give Health Insurance coverage to BPL families. The goal of RSBY is to give assurance to BPL family units from monetary liabilities emerging out of health status including hospitalization. The beneficiary is any BPL family, whose information is included in the District BPL list prepared by the State Government. The eligible family needs to come to the enrollment station, and the identity of the head of the family needs to be verified and confirmed by the authorized official. RSBY provides cover for hospitalization expenses up to Rs.30,000 for a family of five members on a floater basis. Transportation charges are also covered up to a maximum of Rs.1,000 with Rs.100 per visit. Government pays premium on behalf of the beneficiary house holds for RSBY. Central Government pays 75 percentage of the total premium and the State the remaining 25 percentage. In Jammu and Kashmir and North Eastern States it is in the proportion 90 percentage and 10 percentage. Beneficiaries need to pay only Rs.30 per family at the time of enrolment in RSBY ([rsby.gov.in](http://rsby.gov.in)).

### **Statement of Problem**

In Kerala, most of the people work in

unorganized sector and they find it difficult to meet their day to day living expenses. Most of them belong to lower-income groups. This Being the reality, spending additional sum for their medical expenses may increase their financial burden. RSBY is one of such health insurance schemes introduced by government to help poor families. It provides cashless insurance coverage to poor people who registered and keeping RSBY card provided by the authority. Majority of the studies come out with many apprehensions from entry level of the scheme to final settlement. Some of the major apprehensions were, lower awareness level of people about the scheme, non-addressing of urban poor, lower penetration, delay in issue of health cards, and delay in reimbursement to hospitals. Being this as the fact, the awareness of people about the scheme, enrolment formalities, difficulties encountered at different stages of the scheme, and the level of satisfaction of beneficiaries of this scheme in Kerala context is need to be addressed. Keeping this in view, the present paper examines, the working and effectiveness of RSBY scheme and also the satisfaction level of beneficiaries of this scheme.

### **Objectives of the Study**

1. To examine the working of RSBY scheme
2. To evaluate the effectiveness of RSBY scheme from the beneficiary perspective

### **Methodology**

Descriptive and analytical design have been used in the present paper. The population for the study comprising of the beneficiaries of the scheme in the state of Kerala. The sample for the study constitutes the beneficiaries of RSBY scheme in Mathur Grama Panchayat of Palakkad District in Kerala. The study uses

both the primary and secondary sources of data. A well-structured interview schedule has been administered to collect the primary data. The primary data have been collected from 100 beneficiaries of RSBY of Mathur Grama Panchayath by adopting simple random sampling method. The statistical tools such as ONE WAY ANOVA, TWO WAY ANOVA, MANN WHITNEY TEST, and INDEPENDENT SAMPLE t-TEST were used for testing hypotheses.

### Result and Discussion

#### Enrollment Process

An electronic list of eligible BPL households is provided to the insurer using a pre-specified data format. Mobile

enrolment stations are set up at local centers (e.g., public schools) at each village. These stations are equipped by the insurer with the hardware required to collect biometric information (fingerprints) and photographs of the members of the household covered and a printer to print smart cards with a photo. The smart card, along with an information pamphlet describing the scheme and the list of hospitals, is provided on the spot. The process normally takes less than ten minutes.

one-way ANOVA has been used to analyse the experience of beneficiaries at the different stages of enrollment process.

**Table 1**  
Enrollment Experience and Level of Education

		Sum of Squares	Df	Mean Square	F	Sig.
Easy Enrollment Process	Between Groups	20.456	8	6.819	22.225	.000*
	Within Groups	11.044	91	.307		
	Total	31.500	99			
Adequate Info About Enrollment	Between Groups	13.322	8	4.441	13.021	.000*
	Within Groups	12.278	91	.341		
	Total	25.600	99			
Staff Co-Operation at Enrollment Time	Between Groups	7.722	8	2.574	5.098	.005*
	Within Groups	18.178	91	.505		
	Total	25.900	99			
Information about Document	Between Groups	15.722	8	5.241	12.854	.000*
	Within Groups	14.678	91	.408		
	Total	30.400	99			
Verification Process Time	Between Groups	2.089	8	.696	3.575	.023*
	Within Groups	7.011	91	.195		
	Total	9.100	99			

	Between Groups	6.800	8	2.267	11.493	.000*
Timely Issue of Smartcard	Within Groups	7.100	91	.197		
	Total	13.900	99			

Source: Primary data

\*Significant at 5 per cent

The result of one-way ANOVA from the table 1, for the variables about enrollment process of the scheme based on the level of education level of sample shows that there is significant difference between the level of education of sample and enrollment experience such as easiness, availability of adequate information, staff cooperation, documents required, processing time and issue of smart card. In all the cases P value is less than 0.05, the results are significant at 5 percent. Hence the null hypothesis is rejected. It shows that higher the level of

education higher the experience felt at the different stage of enrollment process.

### Knowledge and Awareness Level

The level of awareness of people about the scheme has been collected and evaluated in terms of concept of the scheme, renewal amount, renewal process, hospitals enlisted, deceases covered, medical facilities available etc. The result of One-Way ANOVA is presented in table 2.

**Table 2**  
Awareness Level and Level of Education

		Sum of Squares	df	MS	F	Sig.
Easy Enrollment Process	Between Groups	25.056	8	8.352	14.086	.000*
	Within Groups	21.344	91	.593		
	Total	46.400	99			
Adequate Info About Enrollment	Between Groups	4.889	8	1.630	2.374	.086
	Within Groups	24.711	91	.686		
	Total	29.600	99			
Staff Co-Operation at Enrollment Time	Between Groups	3.422	8	1.141	7.233	.001*
	Within Groups	5.678	91	.158		
	Total	9.100	99			
Information about Document	Between Groups	1.556	8	.519	2.320	.092
	Within Groups	8.044	91	.223		
	Total	.0019.600	99			
Verification Process Time	Between Groups	12.300	8	4.100	15.375	.000*
	Within Groups	9.600	91	.267		
	Total	21.900	99			

	Between Groups	6.300	8	2.100	6.517	.001*
Utilization Of Benefit	Within Groups	11.600	91	.322		
	Total	17.900	99			
	Between Groups	5.089	8	1.696	2.713	.059
Total Family Members Covered	Within Groups	22.511	91	.625		
	Total	27.600	99			
	Between Groups	5.000	8	1.667	6.977	.056
Other Medical Facilities	Within Groups	8.600	91	.239		
	Total	13.600	99			
	Between Groups	10.889	8	3.630	3.375	.029*
Help Center Number	Within Groups	38.711	91	1.075		
	Total	49.600	99			
	Between Groups	11.289	8	3.763	12.192	.000*
Balance Information	Within Groups	11.111	91	.309		
	Total	22.400	99			

Source: Primary data

\*Significance level at 5 per cent

As shown in Table 2, the level of awareness and knowledge of the people about the scheme, in the light of their level of education, it is found that there is significant difference between the level of education and awareness level in terms of the concept of the scheme, information relating to the hospitals empaneled, renewal process, benefits available, help center number and balance information as P value is less than 0.05. At the same time, it failed to reject the null hypothesis in terms of renewal matters, diseases covered, number of family members covered and other medical benefits of the scheme. The class with highest

mean value is regarded as the class with highest level of knowledge. Beneficiaries who completed under graduation has the highest mean value and beneficiaries where low educated poses lowest mean value in all variables.

### Source of Information About the Scheme

The source of information to the sample about the scheme has been collected under the heads posters, word of mouth, NGO officials, doctors, health workers and public announcement. The same is ranked and presented in Table 3.



**Table 3**  
Source of Information about the Scheme

	Posters	Word of Mouth	NGO Officials	Doctors	Health Workers	Public Announcement
Mann-Whitney U	116.000	170.000	98.000	142.000	146.000	162.000
Wilcoxon W	467.000	521.000	203.000	493.000	251.000	267.000
Z	-1.931	-.358	-2.466	-1.304	-1.064	-.609
Asymp. Sig. (2tailed)	.054	.721	.014*	.192	.287	.542
Exact Sig. [2*(1tailed Sig.)]	.063b	.747b	.017b	.266b	.318b	.585b

Source: Primary data

\*Significance level at 5 per cent

As shown in Table 3, the most popular source of information about the scheme is word of mouth, next comes public announcement, the third one is through health workers and the least one is NGOs. As regards the level of education of sample and their preference on the source of information from NGOs, found a significant difference and otherwise in all the other cases there is no significant difference in the preference of information source based on the level of education of the sample.

**Perception of Beneficiaries About RSBY Scheme**

The perception of beneficiaries about the various aspects of RSBY scheme was collected in terms of risk coverage, reasonability of premium amount, time taken for enrollment, response from authorities, support etc. The same is analysed by using independent sample t test and is presented in Table 4

**Table 4**  
Perception of Beneficiaries of RSBY Scheme Based on Gender

	Gender	No. of respondents	Mean	Std. Deviation	F	Sig.																																									
Risk Coverage	Male	65	2.69	.618	1.386	.246																																									
	Female	35	3.43	.756			Sense of Security	Male	65	2.54	.859	.840	.365	Female	35	3.71	.726	Time Taken for Registration	Male	65	3.77	.587	2.629	.113	Female	35	3.57	.756	Reasonability of Premium	Male	65	4.85	.543	9.434	.004*	Female	35	4.14	.864	Brochure Info	Male	65	3.31	.928	4.247	.046*	Female
Sense of Security	Male	65	2.54	.859	.840	.365																																									
	Female	35	3.71	.726			Time Taken for Registration	Male	65	3.77	.587	2.629	.113	Female	35	3.57	.756	Reasonability of Premium	Male	65	4.85	.543	9.434	.004*	Female	35	4.14	.864	Brochure Info	Male	65	3.31	.928	4.247	.046*	Female	35	2.71	1.437								
Time Taken for Registration	Male	65	3.77	.587	2.629	.113																																									
	Female	35	3.57	.756			Reasonability of Premium	Male	65	4.85	.543	9.434	.004*	Female	35	4.14	.864	Brochure Info	Male	65	3.31	.928	4.247	.046*	Female	35	2.71	1.437																			
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Brochure Info	Male	65	3.31	.928	4.247	.046*																																									
	Female	35	2.71	1.437																																											

Support in Difficulty	Male	65	3.15	.675	.049	.825
	Female	35	4.14	.663		
Reduce Pocket Expenses	Male	65	3.00	.800	.592	.446
	Female	35	3.86	.864		
Good Response to Queries	Male	65	2.92	.484	6.953	.012*
	Female	35	2.71	.726		

Source: Primary data

\*Significant level at 5 per cent

Result of independent sample t test as shown in table 4, with respect to the perception of beneficiaries about RSBY scheme based on gender, shows that there is significant difference as regards reasonability of premium, information access, and response to enquiry at 5 per cent level of significance. While referring mean score of the said variables male respondents hold high perception about RSBY scheme as compared to female. In all the other cases no significant difference

is found ( $P > 0.05$ ), as the beneficiaries hold similar opinion.

### Satisfaction Level of RSBY Beneficiaries

The level of satisfaction on enrollment and general working of the scheme has been analysed based on community, gender and income level of beneficiaries using Two Way ANOVA and the result is presented in Table 5

**Table 5**  
Overall Satisfaction based on Community, Gender and Income

source	Dependent Variable	Type I Sum of Squares	Mean Square	F	Sig.
Community	Satisfaction on enrollment	525.749	175.250	1532.867	.000*
	Satisfaction on general working	338.094	112.698	709.479	.000*
Gender	Satisfaction on enrollment	.094	.094	.822	.371
	Satisfaction on general working	.048	.048	.305	.585
Monthly income	Satisfaction on enrollment	1.188	.594	5.197	.011*
		1.559	.780	4.908	.013*

Source: Primary data

\*Significant level at 5 per cent

To test the mean variation of the scores for beneficiaries' satisfaction towards enrollment to the scheme based on community, gender and income category, Two-way ANOVA is used. It is found that mean score is found to be statistically significant in respect of respondents based on Community and income level as regards satisfaction on enrollment process. It is observed that the forward community (AM 3.46), and lowest income group (AM 3.21) are found to be satisfied on enrollment.

In the mean variation of the scores for beneficiaries' satisfaction towards general working of the scheme based on community, and average income, Two way ANOVA shows that mean score is found to be statistically significant at 5 per cent level of significance ( $p < 0.05$ ). There is significant difference in the mean score on satisfaction towards the working of RSBY scheme with respect to community, and average monthly income of beneficiaries. As such it can be inferred forward community (2.59), and the beneficiaries of lower income group (2.55) are found to be high level of satisfaction on general working of the scheme.

## Conclusion

Rashtriya Swasthya Bima Yojana (RSBY) is a right pill for poor people, Below the Poverty Line. Today's medical expenses are very high and is not affordable for low- and middle-income people. Free medical services increase the health status and standard of living of the people. This programme is a boom to the earning members in the family since it releases them from high medical expenses. Since the major share of medical expenditure met by RSBY scheme, the rural poor are left with more reasonable amount of disposable income for their daily needs. This definitely will improve their standard of living. The present paper focused on

the overall working of the scheme and the satisfaction of the beneficiaries under this scheme. It is found that higher the level of education, higher the opinion about enrollment process. The awareness level about the scheme is also associated with the level of education. Information about the scheme is getting on passed by word of mouth even though many popular ways are available in the present day setting to make the people aware of. Regarding the perception of beneficiaries about the scheme, it is found that male holds high perception about the scheme than female. Similar is the case with overall satisfaction of the scheme, male is found to be more satisfied than the female. The need for popularizing the scheme among the less educated, poor common man who lives below poverty line becomes an urgent need. People are to be well informed and instructed about the scheme, enrollment process, documents required, hospitals empaneled, renewal of policy, diseases covered and so on. That will make the initiative more attractive, and all the deserved will be getting included as beneficiaries of the scheme. As any scheme it may also have many pitfalls but when the time progresses hopefully it will be get resolved and to make India healthy.

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# De-Globalisation: Institutional Preparedness and Entrepreneurship

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## *Abstract*

Deglobalization is gaining momentum across nations to protect national sovereignty, bridging widening income inequalities, checking depletion of resources, generating employment through entrepreneurship & innovation, preserving culture identity etc. Still efforts are needed on the part of the government to reform regulatory provisions, diversifying agriculture to make it remunerative, supporting MSMEs, bringing service innovations, upskilling labour force, popularizing entrepreneurship programmes etc.

**Keywords :** Deglobalization, Atma Nirbhar Bharat, Entrepreneurship

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## **Introduction**

The onset of globalisation in the late 1980s, 1990s and early 2000s consequent upon the advances in transportation & communication technologies, has led to economic, social and culture integration at global level. The growing interdependence of global economies led to marketization activities resulting in sharp increase in trade, multiplication of financial exchanges, increase interaction among different regions of the world, improving global economic conditions, increase in cultural exchanges etc. (WHO and Committee for Development Policy). However, over a period of time specific cultural characteristics from some countries are disappearing, rising income inequalities, disproportional distribution of wealth, depletion of natural resources, deforestation, destruction of ecosystems and loss of biodiversity etc. It is found that about 82% of the world's generated wealth went to 1% of the population (Report from Oxfam). Accordingly, global community started exploring for an alternative to reduce gap between winners and losers,

reallocation of labour & capital across sectors, minimising unemployment, ensuring flexibility in labour & capital markets, enhancing social security and welfare schemes to build trade and financial ties that circumvent previous linkages.

De-globalization represents the process of weakening interdependence among nations and initiating measures to protect domestic economies. At macro level, it has been empirically experienced decreasing trend of import share in a country's gross domestic product, move towards regionalism, regional security regimes, formation of regional trading blocs, trade protection, limitations of movements of people, regulation of capital flows and the attempts to restrict information access to attain national priorities. Further, COVID-19 shock triggered dramatic decline in economic activity, due to both social distancing practices, government mandated lockdowns and other mobility restrictions. In a bid to revive Indian economy, the Prime Minister announced a special economic package of Rs.20

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lakh crore under 'AtaamNirbhar Bharat Abhiyaan', with the aim of making the country independent against the tough competition in the global supply chain and to help in empowering the poor, labourers, migrants who have been adversely affected by COVID.

Jammu & Kashmir is the Union Territory located at the northern side of India and has limited industrial dispersal. The industrial growth rate hovers around 26.2%. Its contribution to the GSDP (Gross State Domestic Product) is 12.55%. and unable to use its potential due to geographic, economic, social and other factors. Entrepreneurship among youth is still at its inception stage. This paper focuses on the status of industry & industrial set up in J&K and schemes of entrepreneurial development to stimulate entrepreneurship among youth.

## Review of Literature

Several studies across nations have indicated the role of Govt. in protecting domestic economies through monetary and financial policy interventions. Economists have also hinted that if deglobalisation continues for longer time, growth may slow, inflation may rise, GVCs may be disrupted and several jobs may be destroyed.

The Bank of Korea, the Hong Kong Monetary Authority and the People's Bank of China mentioned the potential role of macro prudential frameworks and capital flow management measures in helping to insulate the domestic economy from foreign shocks (Oyelakin & Kandi, 2017). Similarly, country notes of Brazil and Philippines, Central Banks in EMEs can also contribute to the efficacy of the overall policy response to globalization by promoting financial inclusion. The Singaporean government is promoting job matching and re-skilling of mid-career professionals, unemployed in insurance,

food subsidies and laws to promote efficient labour mobility. The Malaysian Govt. through its Outplacement Centre (MOC) is helping the displaced workers to find new jobs. China is promoting investment in rural infrastructure to increase productivity. The ASEAN free trade agreement (AFTA) has devised three lists "Temporary Exclusion List", a "Sensitive List" and a "General Exception List" to safeguard the interests of individual countries. In India under 'AtamNirbhar Bharat Abhiyaan' the borrowing limits of State Govts. were increased from 3% to 5% of GSDP for the year 2020-21 and initiated privatization of Public Sector Enterprise except the ones functioning in strategic sector. Measures for businesses including MSMEs are collateral free loans, corpus for MSMEs, subordinate debt for MSMEs, liquidity schemes for NBFCs, enhancing the contribution to employee provident fund (EPF), reduction in statutory PF contribution, increasing credit access to street vendors, expediting payment of dues to MSMEs, disallowing global tenders to protect Indian MSMEs, reduction in TDS and TCS rates, initiating schemes for ease of doing business for corporates, redefining MSMEs, amendments to Companies Act, 2013 etc. In response to these policy initiatives, the J&K Industrial Policy has been revised to include more appealing incentives as well as a single-window clearance procedure. In industrial districts, land is available for lease at a reduced rate for a period of 90 years. The National Highway Infrastructure Development Corporation (NHIDCL) is building five tunnels at a cost of US\$ 3.42 million to enable all-weather access. Several projects to improve horticultural crop and vegetable production have been launched, with production targets of 3,912.91 million metric tonnes and 1337.12 million metric tonnes, respectively. In April 2021, the government of Jammu and Kashmir signed 456 memorandums

of understanding (MOUs) with a total value of Rs 23,152 crore (US\$ 3.17 billion). Several programmes have also been launched to make Jammu and Kashmir a winter sports centre and to increase silk production to 142 MT by 2021.

With complex and competitive global business landscape, nations are developing creative thinkers who could design innovative approaches to address global, nation and societal needs. The entrepreneurs are considered 'change agents' in the process of industrial & economic development and addressing societal needs. Van Praag and Versloot (2007) have identified four economic benefits of entrepreneurship i.e. job creation, innovation, productivity and growth. The progress of United States & Japan lies in the Govt. support to entrepreneurial development activities whereas on the other hand under development of Bangladesh and Nepal can be attributed to the lack of entrepreneurial development activities (Abhyankar, 2014). In BRICs countries, the impressive growth has been driven by a veritable entrepreneurial revolution. In India, persistent budgetary deficit, shrinking public sector, seasonality of agricultural & allied sectors, slow industrial development and high growth of population etc. has resulted in mass unemployment and in the next 35 years finding job for the growing population would be serious challenge (UNDP Report, 2016). The pace of employment growth in the last two year was 3.9 and 2.8% for the financial year 2017-18 and 2018-19 in terms of job creation (CARE Rating). India unemployment rate rose to 7.78% in the month of January 2020 from previous 7.16% (CMIE, 2018-19). In such a scenario, entrepreneurs and entrepreneurship can act as a catalyst not only for the job creation but economic development, export promotion, reduction of regional imbalances and inclusive growth etc.

## **Industry and Industrial Development in UT of J&K**

The Union Territory of Jammu & Kashmir is situated in northern most extremity of India and has total area of 222236 sq.km (Including UT of Ladakh). A major portion of the state's terrain is hilly and is surrounded by mountains except in the south-west side. The economy is primarily service based and agriculture oriented. The Gross Domestic Product (GDP) of Union Territory of Jammu and Kashmir during 2020-2021 was Rs.1.7 lakh crore, the tax /GDP ratio 7.08 percent, revenue receipts Rs.97141 crore, revenue expenditure Rs.68804 crore and expected growth in GSDP 7.5%.

Development of industrial sector is vital for employment generation and balanced regional development of the UT of J&K. Some of the important industries of the Jammu and Kashmir state are silk, textile, carpet-making, woolen textile, forest-based industries, agro-based industries, papier mache, cement industryetc..The industrial sector is managed by:

- a. Directorate of Industries (Kashmir)/Jammu
- b. J&K State Industrial Development Corporation (SIDCO)
- c. Small Scale Industries Cooperative (SICOP)
- d. Directorate of Handicrafts
  - a. Directorate of Handloom
  - b. Handicraft Development Corporation
  - c. Handloom Development Corporation
  - d. JK Cements Pvt. Ltd
  - e. JK Industries
  - f. JK Minerals
  - g. Entrepreneurial Development Institute and
  - h. Khadi Village Industries

The process of industrialisation began in 1970 and currently 10,000 kanals of land are being purchased through 18 land acquisition proceedings in order to create new industrial parks and expand existing ones. The J&K SIDCO is tasked with developing infrastructure for large-scale industrial complexes and estates, as well as implementing officially funded programmes for Industrial Growth Centers, Export Promotion Industrial Parks, Food Processing Zones, Software Technology Parks, and other similar projects. Till Oct. 2021, total land allotted by J&K SIDCO to Industrial complexes was 23701 kanals and number of units benefited 1774. The Directorate of Handloom assists in promotion of handicrafts by way of forming co-operative societies, sales promotion through expose/exhibition/craft bazaars within and outside the state and imparting skills to trainees through training centres. The Handloom Development Corporation promotes weaving of fabrics like Pashmina, Raffal, silk sarees and cotton items through skill upgradation of weavers, marketing of handloom products and enhancing participation of weavers in National, State and district level handloom expos and melas. The J&K Minerals Limited is engaged in exploitation of the mineral resources like coal, gypsum, sapphire, magnasite, lime stone, lignite, Pccproducts, marble and to establish mineral based industries. The Indian Institute of Carpet Technology (IICT), Srinagar was set up in 2008 to develop trained human resource for the carpet industry, develop carpet designs with the help of design software, develop samples of dyed yarn and participate in promotional and publicity campaigns. To promote and develop MSMEs and large industries in Electronics/IT/ITES (Information Technology Enabled Services)/ Food processing, Leather, Pharmaceuticals and other environmentally sustainable

industries through the central and state incentive packages, industrial policy 2016 was enacted. Under New Central Sector Schemes for industrial development effective w.e.f.01.04.2021 upto 31.03.2037, all units eligible under manufacturing and eligible service sector are granted incentive(s) under respective incentives viz., Capital Investment Incentive (CII), Capital Interest Subvention (CIS), Goods & Services Tax Linked Incentive (GSTLI) and Working Capital Interest Subvention (WCIS). The total outlay of Rs.28400 crore is expected to encourage new investment and expansion of existing industries and generate employment for 4.50 lakh people. To upgrade industrial infrastructure, Rs 200 crore provisioned for Development of New Industrial Estates in UT under Capex Budget 2021-22 and construction of Trade Centres with outlay of Rs 50 crore. Three Common Effluent Treatment Plants (CETPs) to be constructed in the existing industrial areas at an estimated cost of Rs 20.47 crore and two IT towers one each at Jammu/Srinagar to be completed at a cost of Rs 100 crore.

Uninterrupted power supply, road infrastructure, financial reforms and IT initiative are also need to sustain industrial progress. As of Nov. 2020, J&K had a total installed power-generation capacity of 3423.13 MW, comprising 1812.35 MW under central utilities, 1535.98 MW under UT utilities and 74.80 MW under private utilities. Under PMGSY I & II, road length of 4500 kms to be completed during 2021-22 and 1750 km road length to be sanctioned for upgradation in 2021-22. 14 bridges are targeted to be completed in 2021-22 benefitting 2.85 lakh population. Roll-out of the “empowerment” initiative on BEAMS portal for public partnership in development and for online viewing of work details being executed in different areas of UT. The other initiatives include roll-out of e-Kuber payment system,



establishment of Centralized Contract Implementation and Payment Monitoring System, introduction of Bid Document Evaluation Consultants systems, E-Audit, E-Office and Online Realtime Expenditure Monitoring Mechanism. Table 1 shows status of industrial development on UT of J&K. However, some grey areas have been observed in the pattern of industrial development in UT of J&K:

- a. Despite massive reforms, still regulatory atmosphere is stifling and there is no ease of doing business. Private Industrial Policy with provisions for private industrial estates is nonexistent.
- b. The new Rs. 28,400 crore central scheme have benefitted new investment and industrial ventures. About 85% of industrial units in the Kashmir Division are on the verge of closure due to prolonged militancy and Covid crisis. Moreover, many industrial units have been deprived of many incentives and concessions which were promised in earlier policies
- c. The industry is grappling with not much industry-friendly atmosphere in terms of difficult terrain with no proper connectivity. Due to the fragility of Jammu-Srinagar national highway, industrialists do not have easy access to the raw material and markets. The erratic power supply is another area that troubles industries.
- d. Poor capacity utilisation, inept management, insufficient funding, raw material shortages, lack of marketing support, problem with working capital, challenges with export, and a lack of technology up-gradation are all stated to be problems in the small scale business.
- e. To process of public procurement through Government e-Marketplace (GeM), has adversely affected sale of small scale industries in J&K. Till now 1700 SSI units registered with J&K Small Scale Industries Development Corporation Limited were provided marketing support by SICOP. The SCIOP 's last recorded annual turnover was Rs.4000 crore and after procurement process through GeM portal, the turnover has come down to 60%.It has virtually affected 500 local MSME units in the state.
- f. Due to frequent internet disruption, the micro units are facing difficulty in registering and then being part of process on GeM portal. In all the Industrial policies, the focus is on service sector only as moving goods out of the Kashmir is difficult. With the removal of incentives, some industries like cement is confronted with production and marketing constraints.

### Entrepreneurship

Entrepreneurs and entrepreneurship are considered 'change agents' in the process of industrial & economic development and addressing societal needs. Van Praag and Versloot (2007) have identified four economic benefits of entrepreneurship i.e. job creation, innovation, productivity and growth. In India, persistent budgetary deficit, shrinking public sector, seasonality of agricultural & allied sectors, slow industrial development and high growth of population etc. has resulted in mass unemployment. In such a scenario, entrepreneurs and entrepreneurship can act as a catalyst not only for the job creation but economic development, export promotion, reduction of regional imbalances and inclusive growth etc

Micro, Small and Medium Enterprise (MSME) sector has emerged as one of the most vibrant sector of the UT of J&K economy contributing towards employment generation, innovation, exports, inclusive growth and resilience to ward off global economic shocks and adversities. Two Centres for Invention, Incubation, and Training (CIIT) have been established at Govt. Polytechnic Jammu and Govt. Polytechnic Baramulla in collaboration with Tata Technologies for upskilling students of technical institutions in industry relevant courses such as robotics, design engineering, electric vehicle maintenance and repair, internet of things, mechatronics, and so on for employment and skill development. Youth are given financial assistance to start their own businesses through different bank-sponsored schemes and youth startup schemes, as well as through the J&K Rural Employment Generation Program and the Prime Minister's Employment Generation Programs. Under the J&K Rural Employment Generation Programme, a target of 1231 units has been set for 2021-22, with a margin of Rs 25 crore and 7386 people employed. A career portal has been built, as well as job fairs, to assist young people in finding work in the private sector.

JKEDI was established by the Government of Jammu and Kashmir in March 1997 to create entrepreneurial awareness and readiness among the youth for self employment. Till 2004, three regional learning centres were set up each in Jammu, Kashmir and Ladakh. The Institute offers well-equipped and spacious auditoriums, lecture halls, and computer labs that are stocked with books, reports, journals, project profiles, magazines, videos, reference work, and related literary publications. Seed Capital Fund Programme, Youth Startup Loan Scheme, and NMDFC scheme for backward parts of minorities are among

JKEDI's programmes. Under Seed Capital Fund Scheme, educated youth are motivated to take up entrepreneurship as a career option. The scheme is available to an unemployed state subject within the age group of 18 to 37 years. Non refundable seed Money of 35% of the project cost subject to maximum limit of rupees 3 lacs for under graduates/graduates; Rs. 5 Lacs for post graduates and Rs. 7.5 lacs for Doctors, Engineers, MBA's is provided. 65% of the project cost is provided by J&K Bank as loan @ 9% as per annum. Under Youth Start up Loan Scheme (YSLs) direct off-bank finance is provided to eligible youth up to Rs. 8 lakhs at 6% simple rate of interest. Under NMDFC scheme term loan is provided to marginalised sections of the society at 6% simple rate of interest in collaboration with National Minorities Development Finance Corporation. The loan amount ranges from Rs.3-10 lakhs. Besides, educational loans at 3% simple interest are given for professional courses to the backward sections among the minorities. Table 2, Table 3 & Table 4 depicts the loans provided under various schemes of JKEDI.

In the process of enhancing entrepreneurship among youth, following constraints have been observed:

- a. The hilly terrain of UT of J&K and import of raw material & export of finished products outside the UT increases the cost and reduces market competitiveness of products.
- b. Despite initial seed capital assistance from Govt. agencies, the capital requirement of business increases with expansion of business, necessitating more funds. In absence of adequate timely availability of funds, business is likely to collapse.
- c. Startups require a team of multidimensional skill personnel. In

- most of cases, complementary skill are not available.
- d. Lack of access to incubators, Science & Technology Parks, Business Development Centres increases the risk of failure of business.
  - e. Stringent regulatory provisions regarding labour laws, registration of company, intellectual property rights, dispute settlement resolution, demotivates the prospective entrepreneurs.
  - f. Absence of marketing facilities, branding and distinctiveness in products fails to attract prospective customers.
  - g. Insufficient experience in the product line and absence of continuous mentorship or guidance to entrepreneurs especially during the initial period of business, demotivates the entrepreneurs resulting in business failure.

### Conclusion and Managerial Implications

To accelerate the pace of industrialisation, Govt. through various centrally sponsored and State Industrial policy is supporting new enterprises. It is suggested that various incentives and subsidies to old units should be reduced in a phased manner rather than abruptly ending. Keeping in view limited availability of raw material within state, some concession be provided on the import of raw material to manufacturing units. Similarly, some sale centres be set outside the state in major cities for facilitating sale of finished products produced by industrial units. Wide publicity should be given to schemes like 'Make in India', Start up India', MUDRA etc. so as to motivate rural youth towards entrepreneurship. Road connectivity and uninterrupted electricity & water supply to industrial

sector be given top priority. Mentoring or consultative houses be established so as to provide regular guidance in case of crisis in sick units. Working capital at cheap rates be provided to newly set up enterprises to overcome financial constraints. Govt. should introduce skill development courses at school, college and university level so as to equip students with skill needed at industry level.

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**Table 1**  
Status of Industrial Development in UT of J&K\*

Year/nature of industrial development	1999-2000	2005-06	2009-10	2015-16	2018-19
Units registered with DIC	41950	48224	52629	58596	33845
Employment in registered units with DIC	183698	219127	245774	283105	208977
Sheds allotted in industrial estates	828	1122	297	279	357
No. of units functional in industrial estates	452	617	146	166	236
Annual production in units located industrial estates(Rs.Lakhs)	32465	3054.38	5618.9	7719.08	10981.30
Average daily employment in units located in industrial estates	4241	4800	1128	1553	1775

\* Source: DIC and SIDCO office records

**Table 2**  
Physical and Financial Achievement Under Seed Capital Fund Scheme (As on Sept. 30, 2020)of JKEDI\*

Financial year	Cases approved Entrepreneurs/Enterprises	Seed capital released Entrepreneurs/Enterprises	Seed capital released (lacs Rs.)
2010-2011	348/332	210/202	687.30
2011-2012	870/829	624/597	1954.46
2012-2013	1532/1485	1046/1009	3350.05
2013-2014	1744/1684	990/947	3329.04
2014-2015	1124/1074	627/641	2299.69
2015-2016	986/983	660/654	2238.19
2016-2017	483/482	323/322	1049.81
2017-2018	2164/2162	998/996	3206.43
2018-2019	1167/1161	874/868	3556.48
2019-2020	951/944	530/525	2232.12
2020-2021	-	101/100	490.97
Total	11369/11136	7028/6861	24394.54

\*Source: Website of JKEDI

**Table 3**  
Physical /Financial Achievement under Youth Startup Loan Scheme\*

Particulars	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Approved data					
No. of Enterprises	250	360	360	500	438
Term loan	1612.43	219.06	465.93	635.34	839.53
Disbursed Data					
No of cases disbursed	407	238	107	214	125
Amount disbursed	2199.27	1917.23	671.89	1127.49	932.14
Potential of employment generation	986	472	230	429	325

\*Source: Website of JKEDI

**Table 4**  
Physical /Financial Achievements cum Utilisation Report of Different Schemes of NMDFC\*

Scheme	Year	Target	No. Of beneficiaries covered	NMDFC share (Rs.Lac)	State share (Rs.Lac)	Benf. Contribution (Rs.Lac)
Term Loan	2015-16	2034	968	3194.74	177.48	177.48
	2016-17	765	828	2441.70	135.65	135.65
	2017-18	1600	1641	5449.07	302.72	302.72
	2018-19	1300	993	3451.98	191.77	191.77
	2019-20	1500	275	947.30	52.62	52.62
	2020-21	-	17	61.20	3.40	3.40
Education Loan	2015-16	170	48	176.65	9.81	9.81
	2016-17	170	30	145.69	8.09	8.09
	2017-18	300	130	943.11	52.39	52.39
	2018-19	-	113	884.70	49.15	49.15
	2019-20	-	58	518.85	28.88	28.88
	2020-21	-	7	26.61	1.47	1.47

\*Source: Website of JKEDI



# Repercussion of Covid 19 Upsurge: An Analysis on the Efficaciousness of Autoregressive Models in Volatility and Return Estimation of Bitcoin

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## *Abstract*

Cryptocurrencies, especially Bitcoin, is a hot commodity today. High volatility is a common feature of almost all the cryptocurrencies in the world. A systematic exploration and examination of the volatility of cryptos enables the investor to earn more on their investments. After the outbreak of the COVID-19 pandemic, the crypto market witnessed a highly volatile situation with a huge increase in price. The pandemic also affected the volatility and return of Bitcoin. This research aims to analyse and compare the risk and volatility characteristics of Bitcoin after the outbreak of the COVID-19 pandemic. The study further tests the capacity of several autoregressive models, such as ARMA, GARCH, EGARCH, and TARCH in estimating and evaluating the return and volatility associated with Bitcoin. Identified models were tested and compared with the help of Akaike information criteria (AIC) and Schwarz information criteria (SIC). For this article, the data of daily adjusted closing price of Bitcoin INR (BTC-INR) were collected from Yahoo Finance during the period January, 2017 to December, 2021. We witnessed a huge change in the daily average return of Bitcoin after the COVID-19 outbreak. Also, we identified TARCH (1, 1) as the best model in the ARCH family for evaluating and estimating volatility and ARMA (10, 10) as the best model for predicting the return of Bitcoin.

**Keywords:** Cryptocurrency; Bitcoin; ARMA; ARCH; GARCH; EGARCH; TARCH; Volatility.

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## Introduction

Recently, cryptocurrency has emerged as a popular issue, attracting the attention of both academics and investors. Cryptocurrency is a type of digital currency that is based on blockchain technology and may be used as a medium of exchange (Tschorsch & Scheuermann, 2016).

In 2008, the mysterious programmer Satoshi Nakamoto developed Bitcoin, the first cryptocurrency in the world (Phillip et al., 2018).

With a growing market capitalization, Bitcoin is considered as a viable investment vehicle by many investors throughout the world (Qarni et al., 2019). Bitcoin

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can also be considered as a speculative asset (Corbet et al., 2018). Over time, cryptocurrencies tend to display similar features and become more distinguishable from other asset classes (Pele et al., n.d.). Bitcoin has the potential to operate as a hedging asset against the stock price swings of all foreign marketplaces studied (Garcia-Jorcano & Benito, 2020). Noisy, non-stationary, and deterministically chaotic in nature, the rates are the key features of all most all the crypto.

Since the start of cryptocurrencies, the COVID-19 outbreak has created the first widespread bear market conditions (Conlon et al., 2020). After the COVID-19 outbreak, the crypto market—especially Bitcoin—experienced high volatility in its price than in the pandemic's pre-period (Yousaf & Ali, 2020). High volatility provides an opportunity for the investors to earn more. Critical evaluation and accurate forecast will enable investors to tackle the price volatility and help to make good return on their investment. This study aims to assess the return and volatility characteristics of Bitcoin INR with the help of a few autoregressive econometric models.

## Literature Review

The COVID-19 pandemic has affected the world's financial market and the crypto market is no exception (Ali et al., 2020). Due to rising concerns about COVID-19, global equities market investors migrated from holding risky assets to safe-haven assets, and those who held risky assets faced their worst price drop in the last week of February 2020 since the 2008 financial crisis (Park, 2022). Volatility and volume of Bitcoin are the main attractors for a wide range of attention from investors, businesspersons, and academicians (Urquhart, 2018). Persistence properties of cryptos should be analysed for forecasting their volatility, which will help to attain better profits (Abakah et

al., 2020). Chu et al.(2017) emphasised the increased need for quantifying the volatility of cryptocurrencies. During the pre-COVID-19 era, volatility transmission was not substantial for any of the cryptocurrency pairs (Yousaf & Ali, 2020). Another study dealt with the volatility spillover of six major crypto markets and the authors identified that USD and EUR experienced a high volatility spillover effect (Dong et al., 2020). Bouri et al. (2021) employed an autoregressive realized volatility model (HAR-RV) and forecasted the realized volatility of Bitcoin. Global economic policy uncertainty and economic situations affect the volatility of Bitcoin according to Fang et al. (2019). Qarni et al. (2019) suggested that as Bitcoin's popularity and tradability grew, it would have a significant influence on other U.S. financial markets in the future. Due to the rapid fluctuations in the value of cryptocurrencies, data-driven nonparametric models appear to suffer more in predicting downside tail risks (Liu et al., 2020). COVID-19 seems to have had little effect on herding in cryptocurrency markets. Herding stays dependent on up or down market days in all markets analysed, although it did not appear to become stronger throughout the COVID-19 period (Yarovaya et al., 2021). The decentralised Bitcoin market is more volatile, whereas centralised markets are more tail dependent in terms of returns (Matkovskyy, 2019). Le et al. (2021) identified that the COVID-19 outbreak had changed the spillover pattern of fintech and other classes of assets including cryptos. Bitcoin does not possess stable hedging capacity (Klein et al., 2018). Bitcoin volatility is high in speculative conditions (Lopez-Cabarcos et al., 2021). This has a negative impact on its potential role in portfolios (Baur & Dimpfl, 2021). COVID-19 pandemic-related media news had an impact on the volatility of Bitcoin prices (Zhang et al., 2022). According to



Sebastiao and Godinho (2021), machine learning and data analytics provide strong approaches for investigating the predictability of cryptocurrencies and developing effective trading strategies in these markets, even in the face of adverse market situations. ARCH family models are better at forecasting volatility cryptocurrencies than the Stochastic Volatility (SV) model (Kim et al., 2021). ARMA is an econometric model used to predict the present value of one variable based on its past values (Sifat et al., 2019). From the review of literature, we identified that there is a huge change in the volatility and return characteristics of Bitcoin. No serious studies have been done to test the fitness of the autoregressive model for forecasting and evaluating the return and volatility characteristics of Bitcoin-INR after the outbreak of COVID-19. This study is focussed on testing the efficiency of autoregressive models such as ARMA, ARCH, GARCH, EGARCH, and TARARCH for forecasting and evaluating the volatility and return of Bitcoin in terms of INR.

**Material and methods**

**3.1. Data Source**

For this article, the data of daily adjusted closing price of Bitcoin INR (BTC-INR) were collected from Yahoo Finance during the period January, 2017 – December, 2021. Therefore, there is a total of 1765 daily observations.

**Methodology**

**Daily Log Return**

The daily return prices were calculated from the adjusted closing prices of Bitcoin. The study employed the natural log return method for calculating daily returns (Mahendra et al., 2021). The daily return (R<sub>t</sub>) of all selected variables calculate using daily adjusted closing price using natural log.

$$(ln): R_{ti} = \ln(P_t/P_{t-1})$$

In this, R<sub>ti</sub> is the daily return of price index i, P<sub>t</sub> represents the adjusted closing value of price index at given time t, and P<sub>t-1</sub> is the value of the index at the time t-1.

**Augmented Dickey-Fuller (ADF) Stationarity test**

Testing the presence of unit root is a preliminary requirement as the study deals with time-series data. Augmented Dickey-Fuller (ADF) test was used for ensuring stationarity of data (John, 2019).

$$y_t = c + \beta t + \alpha y_{t-1} + \phi \Delta Y_{t-1} + e_t$$

Rejection of null hypothesis indicates stationarity of data. The test rejects the null hypothesis when the p-value is less than 0.05 and high negative ADF test statistics (Miglietti et al., 2020).

**ARMA Model**

To find the most appropriate model for forecasting Bitcoin returns, the static properties of the data were verified graphically, and the unit root test, i.e., ADF (Augmented Dickey-Fuller) test was utilized. The Bitcoin return was estimated using the ordinary least squares (OLS) approach if the series was steady. The Bitcoin return moving pattern turned out to be autoregressive (AR), moving average (MA), or a combination of both (ARMA). The AR (p) model can be written as

$$Y_t = \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \dots + \phi_p Y_{t-p} + \epsilon_t$$

The MA (q) model can be written as

$$Y_t = \epsilon_t - \theta_1 \epsilon_{t-1} + \theta_2 \epsilon_{t-2} - \dots - \theta_q \epsilon_{t-q}$$

The combination of AR (p) and MA (q) model i.e. ARMA (p, q) model is expressed in the following form:

$$Y_t = \theta_0 + \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \dots + \phi_p Y_{t-p} + \epsilon_t - \theta_1 \epsilon_{t-1} - \theta_2 \epsilon_{t-2} - \dots - \theta_q \epsilon_{t-q}$$

In this equation given above, Y<sub>t</sub> and ε<sub>t</sub> are the actual value and random error at time period t respectively; φ<sub>i</sub> (i = 1, 2, 3,....., p) and θ<sub>j</sub> (j = 1, 2, 3,....., q) are model parameters. The integers p and q are referred to as order of autoregressive

and moving average, respectively. Random error term  $\epsilon_t$  was assumed to be independently and identically distributed (i.i.d.) with mean zero and constant variance  $\sigma^2$ .

Using backward shift operator, the ARMA (p, q) model can be written in the following form:

$$\varphi(B)Y_t = \theta(B)\epsilon_t$$

Here,  $\varphi(B) = 1 - \varphi_1 B - \varphi_2 B^2 - \dots - \varphi_p B^p$  and  $\theta(B) = 1 + \theta_1 B + \theta_2 B^2 + \dots + \theta_q B^q$ .

**ARCH LM TEST**

Subsequently, a heteroskedasticity test (ARCH LM) on Bitcoin return was done to find the significance of the ARCH effect. If ARCH effect is present and significant, several ARCH family models such as Autoregressive Conditional Heteroskedasticity (ARCH) model, Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model, Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) model, and Threshold Autoregressive Conditional Heteroskedasticity (TARCH) model can be employed. All these models are purported to possess the capacity to forecast volatility of Bitcoin (Caporale & Zekokh, 2019). The models were compared with the help of Akaike information criteria (AIC) and Schwarz information criteria (SIC) (Naik et al., 2020). The models such as ARCH, GARCH, EGARCH, and TARCH were used as variance models to evaluate and forecast the volatility of Bitcoin return.

**The GARCH (1, 1) Model**

We started with the simplest, the GARCH (1, 1) model specification:

$$Y_t = X_t' \theta + \epsilon_t$$

$$\sigma_t^2 = \omega + \alpha \epsilon_{t-1}^2 + \beta \sigma_{t-1}^2$$

In this case, the given mean equation is represented as a function of exogenous variables with an error term. Since  $\sigma_t^2$  is the one-period ahead forecast variance

based on past information, it is known as conditional variance. The conditional variance equation specified is a function of three terms:

- A constant term:  $\omega$
- Volatility-related news from the prior period, as indicated by the lag of the squared residual from the mean equation: (the ARCH term).  $\epsilon_{t-1}^2$
- Forecast variance of the previous period: (the GARCH term).  $\sigma_{t-1}^2$

**The Threshold GARCH (TARCH) Model**

TARCH or Threshold ARCH and Threshold GARCH were proposed by Zakoian, (1994) and Glosten, et al. (1993). The generalized specification for the conditional variance is given by

$$\sigma_t^2 = \omega + \sum_{j=1}^q \beta_j \sigma_{t-j}^2 + \sum_{i=1}^p \alpha_i \epsilon_{t-i}^2 + \sum_{k=1}^r \gamma_k \epsilon_{t-k}^2 \Gamma_{t-k}$$

In this equation,  $I_t = 1$  if  $\epsilon_t < 0$  and 0 otherwise.

In this model, good news ( $\epsilon_{t-1} > 0$ ) and bad news ( $\epsilon_{t-1} < 0$ ), have differential effects on the conditional variance; good news has an impact of  $\alpha_i$ , while bad news has an impact of  $\alpha_i + \gamma_i$ . If  $\gamma_i > 0$ , bad news increases volatility and we can conclude that there is a leverage effect for the  $i$ th order. If  $\gamma_i \neq 0$ , the news impact is asymmetric.

It should be noted that the GARCH model is a subset of the TARCH model in which the threshold term is set to zero. To estimate a TARCH model, first describe your GARCH model with the ARCH and GARCH order, then alter the Threshold order to the appropriate value.

**The Exponential GARCH (EGARCH) Model**

Nelson proposed the EGARCH (Exponential GARCH) model (1991). The conditional variance specification is as follows:

$$\log(\sigma_t^2) = \omega + \sum_{j=1}^q \beta_j \log(\sigma_{t-j}^2) + \sum_{i=1}^p \alpha_i \left| \frac{\epsilon_{t-i}}{\sigma_{t-i}} \right| + \sum_{k=1}^r \gamma_k \frac{\epsilon_{t-k}}{\sigma_{t-k}}$$

Note that the left-hand side is the log of the conditional variance. This implies that the leverage effect is exponential, rather than quadratic, and also implies that forecasts of the conditional variance are guaranteed to be nonnegative. The presence of leverage effects can be tested by the hypothesis that  $\gamma_i < 0$ . The impact is asymmetric if  $\gamma_i \neq 0$ .

we established that the series is stationary. The time series plot and unit root test–Augmented Dickey-Fuller (ADF) determine whether the series is stationary. The time series plot of Bitcoin’s adjusted closing price in figure 1 indicates that the series is non-stationary because the mean of the Bitcoin price has changed over time. However, the return series of Bitcoin in figure 2 indicates that the series is stationary because the mean and variance of the Bitcoin return are constant over time.

**Results and Discussion**

Before modelling the Bitcoin return,

**Figure 1. Time Series Plot of Adjusted Closing Price**



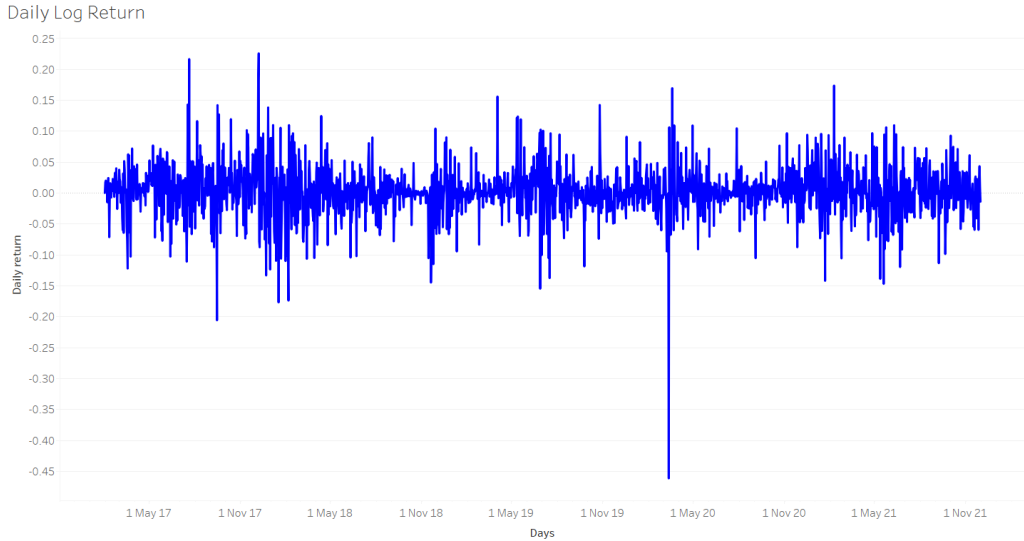
The trend of sum of Adj Close for Date Day.

*Note: Adjusted closing price of Bitcoin from January 2017 to December 2021*

*Source: Authors’ Calculation*

The time series plot of Bitcoin adjusted closing price in figure 1 indicates that there is an upward trend in the price, which indicates the presence of unit root.

Figure 2. Bitcoin Returns

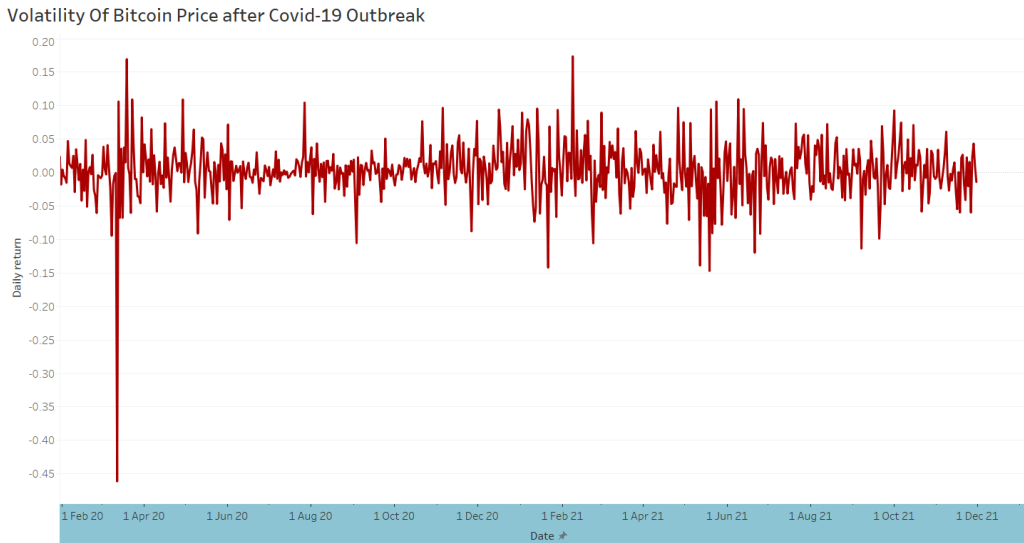


The trend of sum of Daily return for Date Day.

*Note: Daily return of Bitcoin from January 2017 to December 2021 has been plotted.  
Source: Authors' calculation.*

Figure 2 indicates that there is no presence of trend—either upward or downward. This confirms the stationarity of data. Additionally, we can also identify from the figure that volatility exists in Bitcoin prices.

Figure 3. Volatility in the Price of Bitcoin after COVID-19 Outbreak



The trend of sum of Daily return for Date Day.

*Note: Graphical representation of price volatility of Bitcoin from 30th January 2020 to 1st December 2021.  
Source: Authors' calculation.*

Figure 3 shows the volatility of Bitcoin price after the outbreak of COVID-19. On 30 January 2020, the World Health Organization labelled the outbreak a Public Health Emergency of International

Concern, and on 11 March 2020, COVID-19 was declared a pandemic. We can easily trace the effect of the declaration of the pandemic on the price of Bitcoin on the 11th and 12th of March, 2020.

**Table 1**  
Unit Root Test of Bitcoin Return

Unit root test - Augmented Dickey Fuller Test with constant and linear trend					
VARIABLE	P-VALUE	ADF TEST STATISTICS	1% SIGNIFICANCE LEVEL	5% SIGNIFICANCE LEVEL	10% SIGNIFICANCE LEVEL
BITCOIN	0.00	-43.32	-3.43	-2.86	-2.57

*Note Stationarity of return data checked with ADF Source: Authors' calculation.*

We performed the Augmented Dickey-Fuller (ADF) test to confirm the presence of unit root. The test result shows a p-value < 0.05. And we finds a higher negative ADF test statistic than that of 1%

significance level, 5% significance level, and 10% significance level. It reveals that there is no presence of stationarity (Karp & Van Vuuren, 2017).

**Table 2**  
Descriptive Statistics – Return and Risk Characteristics

Descriptive statistics of Bitcoin return	Last five years	Two year pre-period of COVID-19 outbreak	After COVID-19 outbreak
Mean	0.325345	0.040332	0.362505
Median	0.199301	0.093167	0.231066
Std. Dev.	4.188108	3.891386	4.044034
Skewness	-0.046533	0.047879	-0.88562
Kurtosis	9.622378	5.806729	15.11557
Jarque-Bera	3225.872	249.4231	4191.632
Probability	0	0	0
Observations	1765	759	671

*Source : Authors calculation*

Table 2 reports the mean and standard deviation that represent the daily average return and risk of Bitcoin. The mean values in the table indicate that there is a huge increase in the daily average return of Bitcoin after the COVID-19 outbreak with

minimal change in standard deviation. The Kurtosis value exhibits a Leptokurtic (peaked curve). The Leptokurtic value shows high volatility. The skewness and kurtosis values do not follow the properties of a normal distribution.

From the results of the Jarque-Bera test, it is clear that the data is not normally distributed, since the data sets have a high Jarque-Bera coefficient and a low p-value

of 0.05, indicating non-normality (Sahoo, 2021). We had made certain that the tools and procedures we employed were not sensitive to data normality.

Figure 4. Correlogram of Bitcoin Return

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
		1	-0.032	-0.032	1.7554	0.185
		2	0.042	0.041	4.8037	0.091
		3	-0.003	-0.001	4.8228	0.185
		4	0.015	0.013	5.1975	0.268
		5	0.027	0.028	6.4710	0.263
		6	0.037	0.037	8.8653	0.181
		7	-0.035	-0.035	11.064	0.136
		8	-0.007	-0.012	11.143	0.194
		9	-0.008	-0.007	11.261	0.258
		10	0.069	0.068	19.806	0.031
		11	0.004	0.008	19.833	0.048
		12	0.000	-0.004	19.833	0.070
		13	-0.005	-0.002	19.872	0.098
		14	0.019	0.018	20.525	0.114
		15	0.003	-0.000	20.539	0.152
		16	-0.002	-0.009	20.544	0.197
		17	0.049	0.053	24.784	0.100
		18	-0.011	-0.006	25.000	0.125
		19	0.039	0.035	27.742	0.089
		20	0.043	0.041	31.084	0.054

Note: It used for fixing lag value of ARMA model.

Source: Authors' calculation

For fitting an ARMA model it is necessary to determine the number of AR or MA terms. Thus, the ACF and PACF plots of the Bitcoin return series provides information regarding the sequence of AR and MA terms necessary to fit a model (Bakar & Rosbi, 2017). The sample ACF from the series (figure 4) reveals

that the most dominant spike at lag 10 is statistically significant for both ACF and PACF. We chose ARMA (10, 10) as the best model to anticipate the Bitcoin return among the various ARMA models based on the ACF and PACF plots, and this model was also chosen based on the Correlogram plot.

**Table 3**  
ARMA Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001807	0.000834	2.16628	0.0304
DAILY_RETURN(10)	0.25513	0.015367	16.6021	0
MA(10)	-0.182381	0.016148	-11.295	0
SIGMASQ	0.00177	3.18E-05	55.5807	0

Note: Testing the fitness of the model.

Source: Authors' calculation.

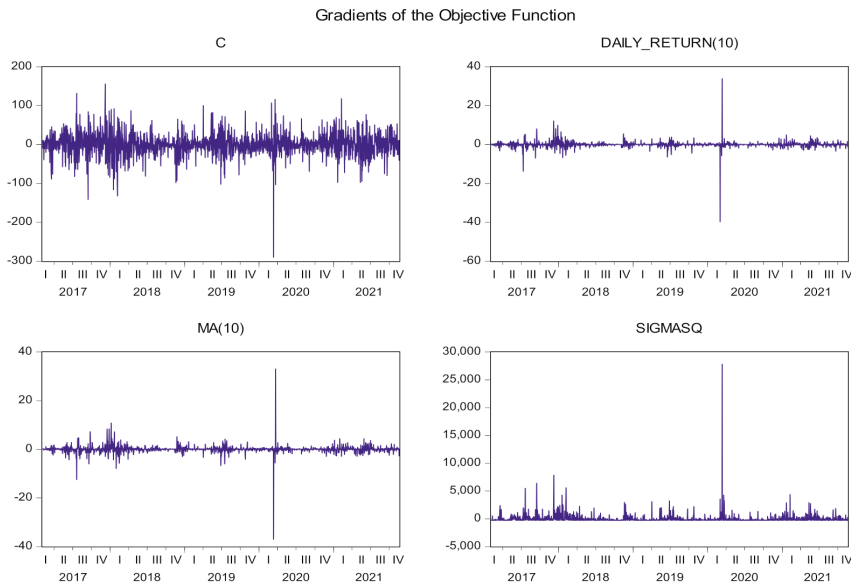
The ARMA model estimation result shows that all the co-efficients are statistically significant as the p-value is less than 0.05 (Bakar & Rosbi, 2017). So we can predict the return of Bitcoin with the help of this model.

Estimation Equation of Bitcoin:

$$\text{DAILY\_RETURN} = C (1) + C (2) * \text{DAILY\_RETURN} (10) + [MA (10) = C (3)]$$

$$Re = 0.00180689970742 + 0.255127813203 * R (t-10) + [MA (10) = -0.182378767556]$$

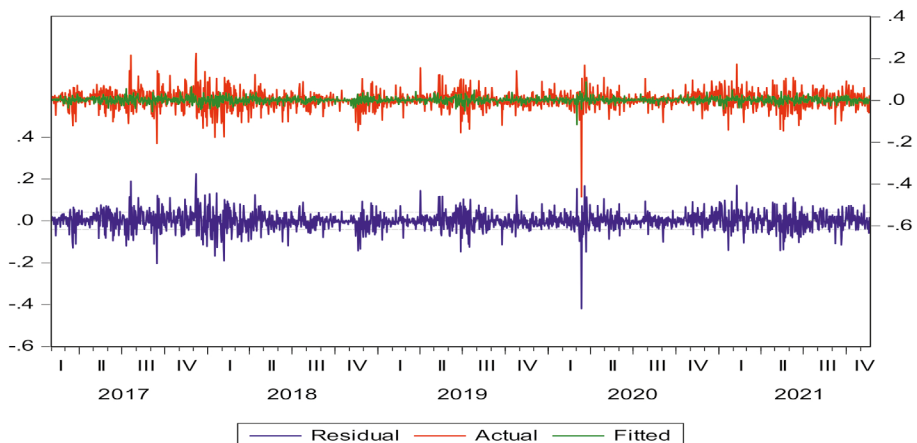
Figure 5. Gradient Graph of ARMA (10, 10) model



Note: Each set of coefficient gradients is represented by its own graph. We can use these tools to look for observations with outlier values for the gradients in our data.

Source: Authors' calculation.

Figure 6. Residual Plot of ARMA (10, 10) Model



Note: Plot of residual, actual and fitted value of ARMA (10, 10) model.

Source: Authors' calculation.

We utilised the residual plot in figure 6 and the ARCH LM test to see if the model had an ARCH effect after fitting it (Mia & Rahman, 2019).

**Table 4**  
ARCH LM Test

<b>Heteroskedasticity Test: ARCH</b>			
F-statistic	10.55847	Prob. F(1,1752)	0.0012
Obs*R-squared	10.5072	Prob. Chi-Square(1)	0.0012

*Note: Results of the ARCH LM test.*  
*Source: Authors' calculation.*

Figure 5 indicates that the volatility has changed over time, which indicates that the series may have an ARCH effect. To examine the existence of the ARCH effect, we employed a heteroskedasticity test = ARCH LM Test. Table 4 confirms the existence of an ARCH effect, as its p-value is < 5%. As the ARCH effect is present, the ARCH family of models can be employed (Mia & Rahman, 2019).

**ARCH Family Models Analysis and Comparisons**

We constructed several ARCH family models such as GARCH, EGARCH, and TARCH for estimating volatility of Bitcoin Return (Bergsli et al., 2022). We chose one model from the ARCH family to forecast Bitcoin return volatility more accurately based on the Akaike and Schwarz information criteria (AIC and SIC) values (Katsiampa, 2017).

**Table 5**  
Comparisons of Different ARCH Family of Models

Models	Coefficients (Prob.)			AIC	SIC
GARCH (1,1)	9.7E-05	1.1E-01	8.5E-01		
P-Value	0.00	0.00	0.00		
TARCH (1,1)	0.000109	0.073094	0.08051	0.83375	
P-Value	0.00	0.00	0.00	0.00	-3.62 -3.60
EGARCH 1,1)	-0.630886	0.206172	-0.048	0.92392	
P-Value	0.00	0.00	0.00	0.00	-3.61 -3.59

*Note: Model comparison.*  
*Source: Authors' calculation.*

The GARCH (1, 1) result shows that  $\beta_1 = 0.105700$ , whereas  $\beta_2 = 0.848028$  and the decaying rate of volatility is 0.06 since  $\beta_1 + \beta_2 < 1$ . In this model,  $\beta_2$  is greater than  $\beta_1$ , which indicates that the reason for the volatility is persistent even if the market mood is off. The volatility of the return will remain constant for a few days without any reason. Suppose any

positive news comes the next trading day, the impact will remain for a few more days without any reason. In this case, the market remained highly volatile after the first wave of COVID-19 pandemic period even when the market was recovering very gradually.

In the TARCH (1, 1) model, ARCH term—the coefficient is positive



(0.073094) and statistically significant. Leverage Effect—the coefficient (0.080508) is positive and statistically significant (indicating the leverage effect). GARCH term—the coefficient (0.833753) is positive and statistically significant. As the GARCH coefficient value is higher than the ARCH coefficient value, we can conclude that the volatility is highly persistent and clustering. As far as the leverage effect is concerned, the coefficient is positive and statistically significant, indicating the leverage effect in the series (meaning: negative news has a higher impact than positive news).

In the EGARCH (1, 1) model, the value—0.630886 (constant) is a long-term average. The ARCH coefficient is positive (0.206172) and significant, indicating the impact of past volatility. Leverage effect:

the coefficient is negative (-0.047950) and statistically significant, indicating asymmetric effect (meaning awful news has a higher impact than the good news). GARCH coefficient is positive (0.923922) and significant, indicating the impact of past volatility on current volatility.

According to table 5, TARCH (1, 1) is the best model because it has the lowest AIC and SIC values (Naik et al., 2020). The p-values of all the above models are statically significant since they are less than 0.05. We have selected TARCH (1, 1) as the most suitable model for estimating the volatility of Bitcoin return.

Statistical properties of the selected model—TARCH (1, 1)—are shown in figures 6, 7, and 8, as well as table 6.

**Table 6**  
ARCH LM Test: TARCH (1, 1)

<b>Heteroskedasticity Test: TARCH (1, 1)</b>			
F-statistic	0.000719	Prob. F(1,1762)	0.9786
Obs*R-squared	0.00072	Prob. Chi-Square(1)	0.9786

*Note: Heteroskedasticity Test: TARCH (1, 1) to test whether there is any ARCH effect in the proposed model.*

*Source: Authors' calculation.*

Table 6 indicates the presence of ARCH effect in the model. The p-values stated in the table are above 0.05, which indicates that there is no ARCH effect in the model (Paramanik & Singhal, 2020).

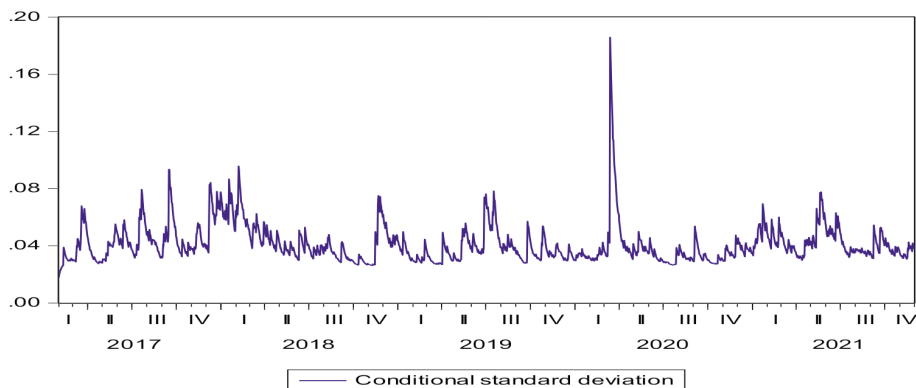
Figure 7. Correlogram of Standardised Residual Squared TARCH (1, 1)

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob*
		1 0.001	0.001	0.0007	0.979
		2 -0.015	-0.015	0.4044	0.817
		3 -0.022	-0.022	1.2476	0.742
		4 0.032	0.032	3.0655	0.547
		5 0.001	0.000	3.0678	0.690
		6 -0.003	-0.003	3.0869	0.798
		7 0.003	0.005	3.1040	0.875
		8 -0.006	-0.008	3.1770	0.923
		9 -0.016	-0.016	3.6432	0.933
		10 -0.008	-0.007	3.7441	0.958
		11 -0.004	-0.005	3.7694	0.976
		12 -0.005	-0.005	3.8080	0.987
		13 -0.015	-0.014	4.1928	0.989
		14 -0.007	-0.007	4.2816	0.994
		15 0.008	0.008	4.4038	0.996
		16 0.009	0.009	4.5629	0.998
		17 -0.010	-0.009	4.7440	0.998
		18 -0.002	-0.001	4.7491	0.999
		19 -0.014	-0.015	5.0886	0.999
		20 -0.011	-0.012	5.2947	1.000

Note: Indicates AC and PAC of the selected model.

Source: Authors' calculation.

Figure 8. TARCH (1, 1) Conditional Standard deviation

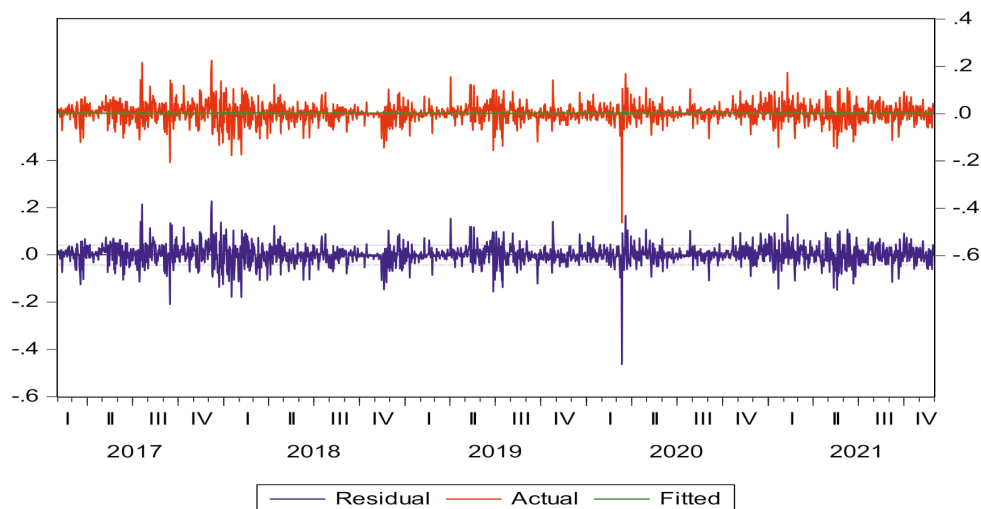


Note: Conditional standard deviation of the selected TARCH (1, 1) model (Karanasos et al., 2004).

Source: Authors' calculation.

Figure 8 shows the conditional standard deviation of the selected TARCH (1, 1) model. It is clear in the figure that high conditional standard deviation is witnessed only in the time of high volatility. Specifically, at the time of the declaration of the COVID-19 pandemic (March 11th and 12th, 2020).

Figure 9. Residual Plot of TARCH (1, 1)



Note: Graphical plot of residual–actual and fitted series—are identical.  
 Source: Authors’ calculation.

## Conclusion and Policy Implication

### Conclusion

The study arrived at the conclusion that after the outbreak of the COVID-19 pandemic, the price, return, and volatility of Bitcoin have increased. We have developed several models to estimate the return and volatility of Bitcoin in this paper. After determining that the series is stationary using the graphical approach and the unit root test, we chose ARMA (10, 10) as the mean model for return estimation in this investigation. Thereafter, this study attempted to model Bitcoin price volatility using the GARCH, EGARCH, and TARCH models. TARCH (1, 1) is considered the best model in the ARCH family since it has the lowest AIC and SIC values compared to other models. Finally, the study indicates that models such as ARMA (10, 10) and TARCH (1, 1) can accurately forecast and evaluate Bitcoin return and volatility. Also, the evaluation of volatility through the ARCH family indicates that there is a persistence in the volatility even after the outbreak of

the COVID-19 pandemic. Future studies can be done to explore the rest of the ARCH family models, and the volatility of the overall crypto market and other cryptocurrencies can be studied.

### Policy Implications

Cryptocurrency, especially Bitcoin, is rapidly gaining attention from investors, academicians, and governments. The high degree of price volatility attracts both investors and speculators towards this trading avenue. The models identified through the study can be helpful in understanding the risk in connection with investments in Bitcoin. They further help to predict the return and volatility pattern of Bitcoin, whereby investors can explore the market to earn more. The policymakers can easily trace the pattern of price volatility by employing the identified models. Moreover, by employing these models, they can also easily evaluate the influence of good news and bad news effects on the price volatility of Bitcoin. This will further help in the process of appropriate policy formation.

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# Adherence of AS-16 Borrowing Costs by Non-Corporate Entities; A Descendant Note

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## *Abstract*

All organisations whether profit oriented or not need funds either borrowed or owned for investing in its operating assets on a regular basis. Borrowed funds attracts the periodical interest payments and also includes other costs like discounts, finance charges, ancillary costs etc. Proper accounting of such borrowing cost is equally applicable both for the corporate and non-corporate entities in order to report true and fair state of affairs of the business. In this regard, the Accounting Standard – 16 “Borrowing Costs” specifies the criteria for Recognition and Measurement, Presentation and Disclosure of borrowing costs incurred by an entity on its qualifying assets. How far this Accounting Standard is adhered, particularly by the non-corporate entities is a million-dollar question. The present study intends to analyse the treatment of borrowing costs incurred by the non-corporate entities on the qualifying assets. For a deeper analysis of the issue, an enquiry on 30 non-corporate entities was made and analysed the results thereof. The study revealed some interesting facts regarding the issue. Non adherence of AS - 16 among non-corporate entities is evident from the study.

**Key words:** Borrowing costs, Qualifying Assets, Non-qualifying assets, Substantial period of time.

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## Introduction

Organisations borrow funds to acquire, build and install fixed assets and other assets. Certain capital assets like building, plants etc., and inventories like brewery products may take substantial gestation time to get it ready for its intended use or sale, during which the firm has to pay interest expenses. The “substantial period” of time primarily depends on the facts and circumstances of each case. However, ordinarily, a period of twelve

months is considered as substantial period of time unless a shorter or longer period can be justified on the basis of facts and circumstances of the case. The assets which take a substantial period of time for its construction to get it ready for its intended use or sale is called qualifying assets and otherwise non-qualifying assets. Accounting Standard (AS – 16) “Borrowing Costs” permits such borrowing costs which are directly attributable to the acquisition, construction or production of

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qualifying assets for their capitalisation and otherwise should be expensed and charged to the statement of profit and loss for the period in which it is incurred. How far the non-corporate entities are adhering this standard and if there is non-adherence of the same and the reasons for the non-adherence need to be explored empirically. Hence, a detailed review regarding the studies on AS, Ind. AS, IAS, IFRS and various GAAPs were made to assess the present position.

### **Rationale of the study**

#### **AS or Ind AS - Which is Better?**

Borrowing access to external funds and the circumstances under which this borrowing occurs are critical drivers of a firm's business prospects. This is especially true for small businesses, which have few options for obtaining external capital other than borrowing (Sakai et al., 2010). However, it is pretty apparent that the accessibility and parameters of credit are highly dependent on the age of the company (Petersen & Rajan, 1995). It is need of a prerequisite that there should be a steadfast guideline on how entities value the borrowing costs and Accounting Standard (AS - 16 ) was one among the guidelines, which lead to the question of "Which to follow", whether it's AS, Ind AS or IFRS. In this regard, (Tawiah Konadu Vincent & Benjamin Muhaheranwa, 2015) conducted a study with the objective of measuring the accounting information quality between AS and Ind. AS (converged IFRS) by using Gray's Index of Conservatism (GIC) on 5 years consolidated financial statements. They found that IFRS provides current and quality information on liquidity ratios than AS reporting though there was a mix results on the quality of accounting information on leverage aspects. In overall, all the profitability ratios of GIC shows that the computed ratios of AS are higher than IFRS ratios in both the

group companies; inferring that IFRS is conservative and prudent in profitability reporting. Hence, accounting information on profitability ratio as per IFRS is bearing high quality than AS ratios. They therefore concluded that Ind AS will provide current and quality accounting information on accounting ratios but the quality level will not be same over the years. On the other hand, Achalapathi & BhanuSireesha (2015) have conducted an extension with the main purpose of identifying statistically significant differences between the Indian GAAP and IFRS based financial statements of companies in terms of financial statement items through the calculated financial ratios. Their examination was built on the sample of 10 Indian companies that have voluntarily adopted IFRS reporting. Financial statements prepared as per Indian GAAP and IFRS were taken for a period of 6 years. Financial ratios under the categories like stability, liquidity, profitability and investment valuation were analyzed using the Gray comparability index to analyze the relative effect. The Wilcoxon's signed ranks test, paired sample t-test, F-test and linear regressions were used for testing the statistical significance. The study inferred that there was a significant difference between Indian GAAP based and IFRS based financial ratios. The study also showed that IFRS adoption has led to a statistically significant increase in liquidity, profitability and valuation ratios. In contention to this, Sunder (2002) examined regulatory competition as a model for writing and implementing corporate financial standards.

#### **Linkages between Corporate Debt & Sovereign Debt**

In emerging economies, access to international financial markets is critical for capital accumulation and growth. The relationship between sovereign debt and the terms of business access to international debt markets is a hot topic

in policy circles, but it has gotten little attention in academic circles (Aca & Celasun, 2012). What effect would a rising amount of sovereign debt—a government entity’s overseas borrowing—have on the price of business borrowing from foreign lenders? First, growing government borrowing abroad is likely to prompt a re-evaluation of country risk. For a given adverse economic shock, countries with larger public debt are more likely to experience a sovereign debt crisis, and sovereign debt crises are known to spread across the economy and weaken private creditworthiness. For example, sovereign defaults have been demonstrated to limit access to foreign funding for the private sector (Arteta & Hale, 2008; Kohlscheen & O’connell, 2008); diminish international trade and cut domestic private credit, raising the likelihood of a banking crisis (Sandleris, 2008).

### **Accounting Standards & Corporate Entities**

Ali et al., (2012) empirically examined the level of compliance with 14 national Accounting Standards (Income Computation and Disclosure Standards) and its disclosure requirements for a large sample of companies in South Asia’s three major countries, namely India, Pakistan, and Bangladesh, and evaluated the corporate attributes that influence the degree of compliance with these standards. Compliance levels are found to be positively associated to corporate size, profitability, and multinational status, but unrelated to leverage and external auditor quality.

Liapis & Thalassinou, (2013) showed a comparison of the International Financial Reporting Standards (IFRS) and other reporting standards for the accounting and reporting of “employee perks.” The empirical study is conducted in line with the Greek Generally Accepted Accounting Principles (GGAAP), IFRS (after the

establishment of International Accounting Standard (IAS) 19 “Employee Benefits”), and USFAS 87.

On the other side of the coin, Walker, (2010) as critic claimed that International accounting standards designed for stock market based capitalism may not be optimal for other forms of capitalism, and since stock market capitalism has lost credibility as a business model, the world may be better served by encouraging alternative forms of capitalism to develop with accounting standards tailored to their needs.

From the literature review made, it is evident that even though there are numerous studies on accounting policies, disclosures, employee perk, national and international accounting standards, GAAPs etc., there is a steadfast research vacuum in the application of or a specific study that has been made to analyze impact of application of accounting standards on non-corporate entities, especially regarding the borrowing costs and its treatment. Therefore, the present article fills this void by specifically evaluating the application of AS - 16 Borrowings Costs on non-corporate entities.

### **Theoretical Underpinnings**

Borrowing costs are interest and other costs incurred in relation to borrowing of funds. It includes interest and commitment charges, amortization of discounts or premiums, amortization of ancillary costs, finance charges under Finance Lease and also exchange difference arising from foreign currency borrowings to the extent that they are regarded as an adjustment to interest costs. Borrowing costs incurred by an organization on its qualifying assets during its construction period/make over period (substantial period of time) can be capitalized, if it satisfies the assets recognition criteria. Other borrowing costs incurred should be expensed in the

period in which it is incurred. Borrowing costs incurred during the extended period in which active development is interrupted due to abnormal reasons should be suspended and charged to statement of profit and loss. Where, a temporary delay is the normal part of its construction, the actual borrowing costs incurred during that period can be capitalized. Moreover, the capitalization process should cease when the assets under construction reaches the stage of its intended use or sale.

Improper accounting of borrowing costs will lead to reporting of deflated or inflated operating results and also under or over valuation of assets. For proper accounting of borrowing costs, the provisions of AS – 16 should be adhered strictly. The present study intends to analyze the practices of non-corporate entities operating at Kollam district regarding the borrowing costs incurred by them on their qualifying assets during the construction period and thereby the accuracy or inaccuracy of financial reporting.

Non-corporate entities are entities other than the corporate entities and include Sole Proprietorship firms, Partnership firms, HUF, Trusts, societies registered under Societies Registration Act and Association of Persons. Accounting Standards are applicable not only to limited companies but also to partnership firms and proprietorships (Rawat, 2019)

### **Objectives**

To identify the treatment of borrowing costs by non-corporate entities;

To identify the reasons of non-adherence of AS - 16 if any; and

To suggest probable solutions to overcome the non-adherence practices.

### **Need and Significance of the Study**

Apart from the corporate sector, the non-corporate entities are also contributing significantly towards the GDP of the nation. These entities are also providers of large volume of employment opportunities. Continuous and sustained growth of this sector can be ensured only through proper accounting practices; otherwise, the operating results as well as financial position may not show the true realities.

Accounting perfection and consistency can be achieved only through the strict adherence of accounting standards. In this respect the study intends to enquire the practices of non-corporate entities regarding the recognition, presentation and disclosure of its borrowing costs incurred on qualifying assets.

### **Methodology**

The present study is both descriptive and diagnostic in nature. The study tries to describe the present practices of non-corporate entities regarding the treatment of borrowing costs incurred on the qualifying assets. As per ICAI notification, entities are classified into Level I, Level II and Level III. For the purpose the present study Level II & Level III entities are only considered on the assumption that the Level I entities comply with accounting standards as their turnover exceeds 50 crores and they are bound to comply taxation and other government rules strictly. Further the study diagnoses the reasons of non-adherence of AS – 16 “Borrowing Costs”, if any among the selected non-corporate entities. The study makes use of both primary as well as secondary data for its analysis. Primary data was collected through interview schedule from the accountants of selected non-corporate entities operating in Kollam District. Purposive sampling was employed for its

administration to ensure that the selected firms are having borrowing costs and also qualifying assets. For descriptive analysis, the statistical tools like Percentages, Mean and Standard Deviations were applied. To test the hypothesis, Kruskal Wallis H Test followed by a post-hoc analysis was done.

**Results and Discussions**

**Profile of the Sample**

The sample respondents of the study constitute 30 working accountants selected purposively from the Non-

Corporate entities which are having qualifying assets financed by borrowed funds, from the Kollam district of Kerala state. The respondents, i.e. the accountants of selected non-corporate entities differ in many respects like their level of education, graduation specialisation in commerce or non-commerce stream, period of graduation, number of years of experience as an accountant, and types of training received, etc. The Profile of the sample selected are depicted in Table 1

**Table 1**  
Profile of the Respondents

Factors		Frequency	Per cent
Education qualification	Graduate	7	23.3
	Post-Graduate	13	43.3
	Graduate-professional	10	33.4
Specialization in Graduation	Commerce	23	76.7
	Other than Commerce	7	23.3
	Before 1993	7	23.3
Period of Graduation	After 1993	23	76.7
	0-5 years	6	20.0
	6-10 years	17	56.7
Number of years of experience	11-15 years	1	3.3
	16-20 years	2	6.7
	21-25 years	4	13.3
Type of training programme received	Articleship	6	20.0
	Internship	5	16.7
	Nothing	19	63.3

*Source: Sample Survey*

The Sampled respondents have been categorised into various groups based on their educational qualification, Specialisation of study at graduate level, Period of graduation, number of years of

experience as an accountant and also the type of training programmes undergone as stated above.

To discharge the duties of an accountant effectively in the modern

competitive business environment, up-to-date accounting knowledge is essential. In this regard the provisions of Accounting Standards can be used as a guideline for performing the duties of an accountant. The applications of provisions of Accounting Standards need strong conceptual understanding and its interpretation, which in fact is a product of level of educational background of the accountant. The educational background of the accountants will have a great bearing on the application of provisions of accounting standards. Hence, the educational qualifications of the respondents have been studied and the results of the same are depicted in Table 1. The data show that, of the 30 respondents, 23.3 percent are graduates, 43.3 percent are Post Graduates, and the remaining 33.3 percent are Graduates-professionals. This will help to study whether the education qualification of the respondents will have a bearing or not on the applications of provisions of AS – 16.

Likewise, the accountants of commerce graduation are expected to have more awareness about Accounting Standards and hence, the area of specialisation of education of the respondents is also assessed and it is clear from Table 1 that 76.7 percent of accountants are from Commerce education background but the remaining 23.3 percentage of accountants are not from the Commerce background.

In India, the Accounting Standards are mandatorily applicable from 1st April, 1993 (AS – 1 Disclosure of Accounting policies). Naturally, unless there is a continuing education practice, the working accountants who have completed their education on or before 1st April, 1993 may not be able to get a complete knowledge on the applications of Accounting Standards. Hence, the period of education of the accountants may also have a direct impact on the applications of provisions of

accounting standards. It is evident from Table 1 that 23.3 percent of accountants were completed their education before 1993 and 76.7 percent of respondents were graduated only after 1993.

Every human endeavour is subject to purification based on their experience and the same is equally applicable in the case of accountants also. Through continuous practice, the accountants will be able to improve their working knowledge. Hence, the number of years of experience of accountants can improve their knowledge on accounting standards and its application. Table 1 show that 20 percent of accountants are having an experience up to 5 years, 56.7 percent are having an experience of 6 to 10 years, 3.3 percent are having 11 to 15 years of experience, 6.7 percent are having 16 to 20 years of experience and another 13.3 percent are having 21 to 25 years of experience.

Various types of training programmes such as articleship, internship etc. gained by the accountants will also have a direct impact in the matter of discharge of performance obligations of the accountants. Hence, the training programmes undergone by the accountants had also been taken into consideration. Table 1 shows that 20 percent of accountants gained articleship training as part of their education programme, 16.7 percent of accountants gained internship training and 63.3 percent had received no training programmes during their education.

### **Profile of Entities**

In addition to the above-mentioned profile of accountants, the presence of borrowed funds for the acquisition of qualifying assets and borrowing cost thereof are also assessed under entity wise profile. The results regarding the profile of Non-Corporate Entities are depicted in Table 2.

**Table 2**  
Profile of the Non-Corporate Entities

Factors		Frequency	Per cent
Accounts Audited by	CA	13	43.3
	Not a CA	17	56.7
	Total	30	100
Types of qualifying assets	Building	24	80
	Plant	3	10
	Others	3	10
	Total	30	100
Funding agency	SBI	9	30.0
	SBT	6	20.0
	SIB	6	20.0
	Federal Bank	5	16.7
	Canara Bank	3	10.0
	Central Bank	1	3.3
	Total	30	100
Loan amount	10 Lakh- 20 Lakh	4	13.3
	20 Lakh- 40 Lakh	1	3.3
	40 Lakh -60 Lakh	1	3.3
	60 Lakh - 80 Lakh	2	6.7
	80 Lakh - 1 Cr	1	3.3
	Above 1 Cr	21	70
	Total	30	100
Rate of interest	5%-10%	11	36.7
	10%-15%	19	63.3
	Total	30	100
Time taken for construction of qualifying assets in months	3-6	3	10.0
	6-9	11	36.7
	9-12	16	53.3
	Total	30	100

*Source: Sample Survey*



A total of 30 non-corporate entities having qualifying assets funded by specific and general borrowings for its construction have been selected for the study. From among, the books of accounts of 43.3 percent are get audited by professionally qualified Chartered Accountants and the financial statements of remaining 56.7 percent are either not audited at all or even audited by a person other than a professionally qualified Chartered Accountant.

Types of qualifying assets also have a strong bearing in the applications of provisions of AS – 16 “Borrowing Costs”. A total of 80 percent of qualifying assets comprises Buildings and another 10 percent belongs to Plants and the remaining 10 percent put under residual category.

As regards funding, all agencies are scheduled commercial banks from where the borrowings were made for financing the qualifying assets. Altogether 50 percent of the borrowings were made from SBI and its associates and the balance 50 percent is shared by SIB 20 percent, Federal Bank 16.7 percent, Canara Bank 10 percent and finally 3.3 percent from Central Bank.

Borrowed funds and the treatment of resultant borrowing costs are having a direct nexus in the matter of financial reporting in the sense that the wrong recognition and measurement of expenditure will falsify the reported operating results and financial position of the entity. Here, the amount of borrowing

ranges from 10 lakhs and goes above 1 crore. A total of 70 percent of entities borrowed more than 1 crore, 13.3 percent of entities borrowed in between 10 lakhs and 20 lakhs, and the remaining 16.7 percent entities borrowed in between 20 lakhs and 1 crore.

As regards the rate of interest, it ranges in between 5 to 15 percent per annum. Out of total entities, the rate of interest of 36.7 percent of entities demands an interest of 5 to 10 percent per annum. Remaining 63.3 percent of entities had to pay an interest of 10 to 15 percent per annum for their borrowings.

Finally, the time taken for the construction of qualifying assets in terms of months has taken into consideration. The construction period varies from 3 months to 12 months depending up on the nature and complexities of qualifying assets. Ten percent of entities had taken 3 to 6 months for the construction of its qualifying assets. Another 36.7 percent entities had taken 6 to 9 months period of time for its construction of qualifying assets and 53.3 percent entities had taken 9 to 12 months.

### **Treatment of Borrowing Cost**

The very purpose behind this enquiry is to analyse how the borrowing costs incurred on qualifying asset is treated by the Non-Corporate Entities. Whether the borrowing cost on qualifying asset is get capitalised or it is charged to revenue of the corresponding period is enquired with the accountants and the result of the same is depicted in table 3



**Table 3**  
Treatment of Borrowing Costs by Non-Corporate Entities

Factors	Statements	Frequency	Per cent
Treatment of Borrowing costs	Capitalized	10	33.3
	Charged to Revenue of the period as an expense	20	66.7
	Total	30	100

Source: Sample Survey

It is evident from the table that only 33.3 percent of the entities are capitalising the same and the balance 66.7 percent entities are charging the borrowing cost to the statement of profit and loss. Then, another question arises towards the entities who

were capitalised the borrowing costs, whether the capitalisation process ceased on the completion of the qualifying asset? Hence, the results of the same are depicted in Table 4.

**Table 4**  
Capitalisation Process Ceased on Completion of Qualifying Asset or Not

	Type of entity	Statement	Frequency	Per cent
Whether the Capitalization process ceased on completion of qualifying assets	Entities who capitalized the borrowing cost	Yes	10	33.3
	Entities who charged the borrowing cost to revenue	Not applicable	20	66.7
	Total		30	100

Source: Sample Survey

From among the total respondents, the same 33.3 percent entities that actually capitalised the borrowing costs were ceased the capitalisation process as soon as the qualifying asset is completed and become ready for its intended use or sale. Same 66.7 percent entities that were charged the borrowing costs against the revenue are not concerned with the cessation of capitalisation process.

**Reasons of non-capitalisation**

The Reasons for Non-Capitalisation can be on many issues/grounds such as difficulty of the accountants to discriminate as between qualifying and non-qualifying assets, difficulty to correlate the specific and general borrowings towards the

qualifying assets, difficulty to identify the starting point of capitalisation process, difficulty to identify the delay due to abnormal reasons for suspending the capitalisation process, difficulty to identify the cessation point of capitalisation process and finally the lack of technical knowledge in relation to presentation and disclosure provisions of AS – 16.

*Difficulty of the accountants to discriminate as between qualifying assets and non-qualifying assets.*

The AS – 16 Borrowing Costs specifically demarcates assets between qualifying and non-qualifying assets. The Standard does not permit the capitalisation of borrowing costs incurred on non-qualifying assets.

The accountants should be well versed in the matter of segregating the qualifying and non-qualifying assets, otherwise the capitalisation becomes difficult. The

responses of the accountants in this aspect are collected using a five point scale and the resultant data is depicted in Table 5.

**Table 5**

Difficulty of the Accountants to Discriminate Qualifying and Non-Qualifying Assets

		Frequency	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	30.0	30.0
	Disagree	1	3.3	33.3
	Strongly Agree	20	66.7	100.0
	Total	30	100.0	

*Source: Primary data*

Table 5 shows only the valid responses and it reveals that 66.7 percent of respondents are strongly agreeing that they are facing difficulty in this matter, 3.3 percent are disagreeing the statement and the remaining 30 percent are strongly disagreeing the statement.

towards the qualifying asset is essential for proper accounting treatment. If the borrowed funds are not properly allocated, it will lead to wrong treatment of borrowing costs and adversely affect the qualitative characteristics of financial statements. The responses of the accountants in this issue are collected and depicted in Table 6.

*Difficulty in correlating the borrowed funds towards qualifying and non-qualifying assets.*

The right allocation of borrowed funds

**Table 6**

Difficulty to Correlate the Funding Towards Qualifying and Non-Qualifying Assets

		Frequency	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	33.3	33.3
	Agree	4	13.3	46.7
	Strongly Agree	16	53.3	100.0
	Total	30	100.0	

*Source: Primary data*

Table 6 shows that 53.3 percent respondents are strongly agreeing the statement that they are facing some difficulty in the matter of correlating the funds towards qualifying and non-

qualifying assets, 13.3 percent are agreeing with the same statement and the balance 33.3 percent are strongly disagreeing the statement.

*Difficulty as regards identification of starting point of capitalisation process*

It is essential to have a clear-cut idea about the exact starting point of capitalisation process of borrowing costs in order to par with the provisions of AS

– 16. Capitalisation of borrowing costs for a shorter or longer period as against the provisions of AS – 16 will affect both operating results and valuation of assets. In this respect, the responses of the accountants are summarised in table 7.

**Table 7**

Difficulty to Identify The Starting Point of Capitalisation Process

	Frequency	Valid Percent	Cumulative Percent
Valid Strongly Disagree	8	26.7	26.7
Disagree	2	6.7	33.3
Neutral	5	16.7	50.0
Agree	8	26.7	76.7
Strongly agree	7	23.3	100.0
Total	30	100.0	

Source: Primary data

Table 7 shows that the statement as regards difficulty in identification of starting point of capitalisation process is strongly agreed by 23.3 percent of respondents, 26.7 percent are agreeing with the statement, 16.7 percent is neutral, 6.7 percent disagree and 26.7 percent strongly disagree with the statement.

*Difficulty as regards suspension of capitalisation process due to abnormal delay in construction of qualifying assets.*

Provisions of AS – 16 states that if there

is a delay in the construction or active development process of qualifying assets due to abnormal reasons, the borrowing costs pertaining to such extended period shall not be capitalised but it should be expensed and charged to statement of profit and loss of the year in which it is actually incurred. There is a possibility that the accountant may not be able to identify such a situation. This aspect has been enquired and the results are depicted in table 8.

**Table 8**

Difficulty as Regards Suspension of Capitalisation Process Due to Abnormal Delay

	Frequency	Valid Percent	Cumulative Percent
Valid Strongly Disagree	9	30	30
Disagree	1	3.3	33.3
Neutral	3	10.0	43.3
Agree	7	23.3	66.6
Strongly Agree	10	33.3	100
Total	30	100.0	

Source: Primary data

Table 8 shows that the statement regarding difficulty to identify the suspension period is strongly agreed by 33.3 percent, 23.3 percent agreed in this respect, 10 percent kept neutral, only 3.3 percent disagreed with the statement and 30 percent strongly disagreed with the statement.

*Difficulty in relation to identification of point of cessation of capitalisation*

The process of capitalisation should

end as soon as the qualifying assets get ready for its intended use or sale. The Accounting Standard on Borrowing Costs will not allow the capitalisation process even after the completion of qualifying assets. In this aspect, the accountants may not be able to identify the exact point of time for cessation of capitalisation. The opinion of the respondents was collected and depicted in Table 9.

**Table 9**

Difficulty in Relation to Identification of Point of Cessation of Capitalisation

	Frequency	Valid Percent	Cumulative Percent
Strongly Disagree	9	30.0	30.0
Disagree	1	3.3	33.3
Neutral	3	10.0	43.3
Agree	6	20.0	63.3
Strongly Agree	11	36.7	100.0
Total	30	100.0	

*Source: Primary data*

From Table 9, it is evident that the statement regarding difficulty to identify the point of cessation of capitalisation is strongly agreed by 36.7 percent, 20 percent were agreeing the statement, another 10 percent were kept neutral in this aspect, 3.3 percent disagree the statement and 30 percent were strongly disagreed with regard to the statement.

*Difficulty as regards presentation and disclosure techniques*

The whole concepts of AS – 16 Borrowing Costs can be summed up in

three major areas namely, Recognition & Measurement, Presentation, and Disclosure. Once the recognition and measurement aspects are covered, the presentation and disclosure aspects arise. Here also the accountants may find some difficulty in the matter of presentation and disclosure techniques. The difficulty with regard to presentation and disclosure were enquired and the results were depicted in Table 10.

**Table 10**  
Difficulty as Regards Presentation and Disclosure Techniques

	Frequency	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	10	33.3
	Agree	4	13.3
	Strongly Agree	16	53.3
	Total	30	100.0

*Source: Primary data*

Table 10 shows that 53.3 percent of respondents are strongly agreeing with the statement that there is difficulty in the matter of presentation and disclosure technique in relation to AS – 16 Borrowing Costs. Another 13.3 percent are agreeing with the statement. Finally, 33.3 percent of respondents are strongly disagreeing with the statement.

The above analysed six areas of difficulty faced by the accountants of non-corporate entities in connection with application of Accounting Standard 16 Borrowing Costs and their responses thereof can be summarised in the table 11.

**Table 11**  
Summarised View of Difficulties in Adherence of AS 16

Statements	N	Minimum	Maximum	Mean	Std. Deviation
Difficult to discriminate	30	1	5	3.70	1.878
Difficult to correlate	30	1	5	3.53	1.852
Difficult to identify starting point	30	1	5	3.13	1.548
Difficult to identify suspension	30	1	5	3.27	1.680
Difficult to identify cessation	30	1	5	3.30	1.705
Presentation and Disclosure	30	1	5	3.53	1.852

*Source: sample survey*

From the data depicted in Table 11, it is clear that all the problems are having a mean score above 3 with a standard deviation above 1.5 to 1.8. This shows that the difficulty with regard to adherence of AS 16 Borrowing Costs is evident among most of the accountants of non-corporate entities. So, from the above analysis, it is clear that there is non-adherence of Accounting Standard - 16 Borrowing Costs among non-corporate entities. The levels of education of accountants,

specialisation/stream of education of accountants, number of years of experience of accountants, period of education of accountants and the training programmes undergone by the accountants are some of the major reasons for the non-adherence of accounting standard.

**Testing of Hypothesis**

From the above analysis, it is evident that 33.3 percent (Table 1) of the accountants who had perused

professional education like CA, CMA, CS, whether successfully qualified or not their educational programme can perform the work of an accountant far better than the accountant not perused any type of professional education programme. Hence, to test whether there is any significant difference among accountants

having different levels of educational background with respect to adherence of AS – 16, a hypothesis has been framed as under.

*Ho: Adherence of AS 16 is same across accountants having different levels of educational backgrounds.*

**Table 12**

	Ranks		
	Education	N	Mean Rank
Difficult to discriminate	Graduate	7	17.86
	Post Graduate	13	21.92
	Graduate-Professional	10	5.50
Non-capitalization	Total	30	

**Table 13**

Test Statistics <sup>a,b</sup>	
	Non capitalization
Kruskal-Wallis H	20.912
Df	2
Asymp. Sig.	.000
a. Kruskal Wallis Test	
b. Grouping Variable: education	

Results of the Kruskal-wallis H test shows that there is significant difference among accountants with different levels of educational backgrounds towards adherence of AS – 16 Borrowing Costs. Here the KW H value is 20.912, with p value .000. Hence, the null hypothesis is rejected and found a significant difference among accountants having different

educational background with a mean rank for non-adherence of 17.86 for graduate, 21.92 for post graduates and 5.50 for graduate-professionals. To test whether this difference exists between all the groups or between some groups only, pairwise comparison is made and the results are depicted in Table 14.

**Table 14**

Sample 1-Sample 2	Pairwise Comparisons of education				
	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.a
Graduate & Graduate-Professional	12.357	4.277	2.889	.004	.012
Post Graduate & Graduate-Professional	16.423	3.651	4.499	.000	.000
Graduate & Post Graduate	-4.066	4.069	-.999	.318	.953

Results of the Post hoc analysis reveals that adherence of AS - 16 among graduates and post graduates differed significantly when compared with Graduate-professionals at  $p < .05$ ; but in the case of Graduates and Post graduates, they are not significantly different as  $p > .05$ . Hence, it can be concluded that the Graduate-professionals are adhering AS - 16 and the other two groups viz., Graduates and Post Graduates are not adhering AS 16.

**Conclusion**

In India, the Accounting Standard – 16 Borrowing Costs is applicable to all types of entities from 1st April, 2000. The adherences of this Standard by corporate entities are legally ensured through the mechanism of company audit which is done by professionally qualified Chartered Accountants. But in the case of non-corporate entities, the adherence is not checked at all. The current study revealed that there is non-adherence among non-corporate entities. The practice of non-adherence should be restricted and curtailed so that the financial reporting mechanism can par with international practices, leading to accuracy of financial judgement by the stake holders.

**Suggestions**

In order to make the non-corporate entities to adhere the Accounting

Standards, the following suggestion are made:

1. As it is a matter of financial reporting, the wrong treatment will affect the results of operation leading to revenue fluctuations to the public exchequer. Hence, from the part of government, corrective measures should be initiated through various agencies like universities to pursue continuous education programmes for the benefit of working accountants with minimum cost to the beneficiaries for enriching the accounting profession.
2. As the apex agency, actions can be initiated by the Institute of Chartered Accountants of India by way of offering certification programmes with simple pedagogy for the working accountants in order to make them par with international community.
3. The Trade Associations, Chambers of Commerce and other voluntary organisations can conduct workshops, seminars etc. dealing with novel updates in the field of accounting for the common benefit of the society as a whole.

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# Product Involvement and Consumer Knowledge – A study with Special Reference to Branded Jewellery Consumers in Trivandrum District

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## *Abstract*

Today, the jewellery market has become a broad industry that consists of branded, non-branded, and online retailers. Branded jewellery can be considered a luxury and specialty good because a special purchasing effort is required. This paper examines consumer attitudes on the importance of knowledgeable purchase and the significance of product involvement in purchasing jewellery from branded retailers. To answer the questions of this research, a total of 100 consumers of Joy alukkas and Bhima Jewellers were selected using the quota sampling method. Descriptive statistics and Man-Whitney u test were used for this study. Consumer attitude was studied using consumer knowledge, and involvement was studied using product involvement. The research results demonstrate that the product involvement level among the consumers is very high. The consumers pay high importance towards knowledgeable purchasing so that they go through detailed information processing before purchasing. The study suggests that product attributes and precise information processing significantly influence consumers' purchasing process.

**Keywords:** Branded Jewelleries, Product Involvement, Information Gathering, Consumer Knowledge

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## **Introduction**

Jewelleries had eye-catching importance in all the ancient civilizations. As a continuation of these traditional customs, jewellery is still an integral part of human life. Today the jewellery market has become a huge business comprising branded jewelleries, non-branded jewellery retailers, and online retailer (Dauriz et al., 2020). With the rise of platinum, diamonds, and silver, jewellery became both a luxury good and a specialty good. Studies show a big difference in the buying behavior of luxury or specialty goods as opposed to the purchase of Fast Moving Consumer Goods (FMCG). With the proliferation of branded jewellery,

various parameters of branding and product became a decisive factor in determining retailers' competitiveness in the jewellery market. The importance or degree of relevance that the consumer possesses on the various elements in the purchasing decision is imperative in the purchasing process (Michaelidou & Dibb, 2008). This importance, or degree of relevance on product attributes, is referred to as consumer product involvement (Guthrie & Kim, 2008). Involvement comprises other sub-level involvement factors such as advertisement involvement, brand involvement, etc. Various studies suggest that consumer product involvement is one of the most important aspects of luxury and specialty

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goods purchasing. In this context, the study aims to examine the extent to which consumer product involvement affects consumers in the jewellery purchasing process. This study examines how much consumers are involved when buying jewellery from branded jewellery and analyzing the importance of consumer knowledge in purchasing process.

### **Rationale behind the Study**

Product involvement and high consumer knowledge are imperative ingredients in luxury and specialty goods purchases. Since branded jewellery products are categorised as both specialty and luxury goods, it is expected that consumers have a higher level of product involvement and enough consumer knowledge while making the purchase. However, in the context of Kerala so far, no such studies have been conducted that examine the role of product involvement and consumer knowledge with special reference to branded jewellery consumers. In this scenario, this study examines the importance of product involvement in purchasing decisions and the importance of consumer knowledge among branded jewellery consumers in Kerala with special reference to Trivandrum City.

### **Literature Review**

Noronha, (2017) has suggested that the branded jewelleries are being unique in a sense in which they attempts to educate the consumer about unethical practices, quality of products, significance of brand attributes etc. Branded jewelleries are differentiated from the non-branded jewelleries because of their brand values and brand positioning. Rafi and Rafi, (2015) argued that branded jewellery purchasing can be considered as speciality good, because a special purchasing effort and readiness to make an exceptional purchasing effort is an ingredient of branded jewellery purchase. Sudhanshu,

(2013) argued that typically luxury goods have some characteristics such as emotional appeal, reputation of the product and seller, craftsmanship etc. Minal, (2017) observed that emotional consciousness, brand and product brand credibility, craftsmanship of the jewellery maker are imperative factors in jewellery purchase decision. Hence it can be argued that branded jewellery is both speciality good and luxury good. Lin.,(2012) has argued that involvement is an imperative construct in luxury goods purchase. Apparently it is argued that luxury goods purchase is high involvement purchase were the degree of importance or relevance on product quality, functional value, and symbolic value will be very high. Liang, (2012) argued that consumer product involvement is the degree of relevance on various product attributes. More the involvement, the ideally consumer might be highly knowledgeable. Kinley et al., (2014) in their study titled "shopping behaviour and the involvement construct", apparently it is argued that, high involvement in purchasing decision is influenced by the degree of relevance of the product with personal values, needs and interest. Hanzaae.,and Ghafelehbashi.,(2012) Product involvement can influence the decision making process regarding a product, the extent to which consumers will search for information about the product, the timing in adoption of the product, the manner in which the consumers' attitudes and preferences regarding the product are influenced, the consumers' perceptions of alternatives in the same product category and brand loyalty. From the above literature, it can be concluded that product involvement is a significant construct in purchase decision regarding a specialty good. In addition, the literatuers shows that information gathering helps the consumers to make knowledgeable purchase decision. In a nutshell, the

literature validates the inexorable role of product involvement and consumer knowledge in purchase process of specialty or luxury goods.

### **Research Aim**

The research examines how much the branded jewellery consumers are involved in their purchase decision in terms of product involvement and how consumer knowledge level influences the purchase decision.

### **Research Questions**

1. How is the product involvement level of consumers of branded jewellery in Trivandrum?
2. How is the consumer's attitude on consumer knowledge required for purchasing?

### **Research Objectives**

1. To examine the level of product involvement among the branded jewellery consumers in Trivandrum
2. To analyze the attitude on consumer knowledge while making purchase decisions.

### **Hypotheses of the Research**

$H_0$ : There is no significant difference in product involvement level among branded jewellery consumers

$H_0$ : There is no significant difference in attitude on consumer knowledge among branded jewellery consumers

### **Significance of the Study**

Consumers have a higher degree of involvement; ideally, a consumer might be a knowledgeable consumer, making the best purchase decision. A higher level of knowledge helps the consumer to reduce the post-purchase dissonance. The study discusses the degree of product

involvement and the consumer attitude on being a "Knowledgeable Consumer" while making a purchase decision. The study aims to add some new perspectives to the existing pieces of literature on luxury as well as specialty goods purchasing based on the branded jewellery consumers in Trivandrum.

### **Research Design**

#### **Database Design**

Data required for this study were collected from secondary and primary sources. The secondary data collected from those articles which detail consumer involvement, jewellery buying behaviour, branded jewellery purchasing, luxury purchasing, and specialty goods purchasing. In order to collect secondary data, the researcher has used various research journals, research repositories, and websites. Only those articles that had published after 2000 were considered for this study. The primary data for this study were collected through a structured questionnaire. Primary data were collected from the branded jewellery consumers in Trivandrum city.

#### **Measurement Design**

Five point rating scale ranging from 5 to 1 was used as scale for the measurement. This scale which begins from "Extremely important" to "Not at all important" was used for the study.

#### **Sampling Design**

The population of the overall branded jewellery consumers is unknown; a non-probability sampling method was used for collecting the data. Judgemental Quota sampling was used as the sampling method. A total of 100 samples were selected for the study. Two branded jewellery, namely Joy Alukkas, Bhima were chosen for the study based on their market share.

Fifty respondents from each jewellery were selected for the study. Equal quotas were assigned to different categories since the population is homogenous. According to Cochran (1977), 386 is the minimum sample size for the unknown population. Since it is a pilot study, 25% of the actual sample is more than enough (Whitehead et al., 2015). Hence the researcher has used 100 samples for the study. The confidence level was 95%. The level of significance was 0.05%.

**Statistical Design**

In this study, the researcher has used descriptive statistics such as mean, median, mode and standard deviation.

For testing the hypothesis, since the data is collected through non probability sampling method non-parametric test were used for the study. Man-Whitney u Test was used for the analysis.

**Discussion and Analysis**

This part of the study deals with the statistical analysis and hypotheses testing of this research. The statistical analysis was conducted using descriptive statistics. Hypotheses testing were done using Mann-Whitney U test for two consumer groups. The test was conducted with the help of the Statistical Package for Social Science (SPSS) version 2017.

**Table 1**  
Descriptive Statistics of Product involvement

	Mean	Standard Error of mean	Median	Mode	Standard deviation
Importance on Product Quality	4.45	.06	4.00	4.00	.60
Importance on Product Design	3.90	.08	4.00	3.00	.81
Importance on Product Purity	3.90	.08	4.00	3.00	.81
Importance on Product Design	3.47	.10	3.00	3.00	1.04
Importance on Price Tag	3.74	.07	4.00	3.00	.76
Importance on Hall Marking	4.23	.07	4.00	4.00	.72
Importance on Price Denomination	3.33	.10	3.00	3.00	1.00
Importance on Metal Combination	3.52	.10	3.00	3.00	1.06

Source: Primary data

Table 1 shows that that the highest mean value is for product quality and the lowest mean value for the level of prize denomination. The overall mean score value calculated as 3.8175. This mean value indicates that the level of

consumer product involvement among the all respondents is somewhat near to very important. Hence it can be inferred that among branded jewellery consumers, product involvement level is almost somewhat near to very important.

**Table 2:**

Overall Descriptive Statistics on the degree to which consumers perceive themselves to be knowledgeable

	Mean	Standard Error of mean	Median	Mode	Standard deviation
Importance on collecting the required information before the purchase	4.02	.07	4.00	4.00	.71
Importance on being a knowledgeable consumer while making the purchase	3.86	.06	4.00	4.00	.66
Importance for collecting required information so that post purchase dissonance can be reduced.	3.51	.05	4.00	4.00	.52
Importance on being an opinion leader for others.	2.51	.09	3.00	3.00	.98
Importance on information collection for reducing perceived risk	3.71	.06	4.00	4.00	.65

Source: Primary data

The table 2 shows that the highest mean value is noted for opinion on information collection before making purchase. The mean value is 4.0200, indicating that the consumers are highly important in collecting necessary information before making the purchase. The consumers are given importance for being knowledgeable consumer while making the branded jewellery purchase. Respondents opined that extensive information is a necessity to reduce post-purchase dissonance. The mean value for this is 3.5100, which indicates that consumers give somewhat very important for collecting the necessary information to minimize post-purchase dissonance. The overall mean score for the consumer opinion on perceiving themselves as knowledgeable is 3.522. This mean value indicates that among

the branded jewellery consumers, the importance of being a knowledgeable consumer is moderately high.

**Hypotheses Testing**

H<sub>0</sub>: There is no significant difference in product involvement level among the two branded jewellery consumer groups

H<sub>0</sub>: There is no significant difference in attitude on consumer knowledge among the two branded jewellery consumer groups

In order to test the hypothesis Man Whitney U test was used. The Man Whitney test is used to analyze the samples from two different categories. Here the consumers belongs to two different jewellerys are categorized as two different groups.

**Table 3**  
Rank- Product Involvement

	Branded Retailer Name	Number of Samples	Mean Rank	Sum of Scores
Importance on Product Quality	Joy Alukkas	50	50.74	2537.00
	Bhima Jewellery	50	50.26	2513.00
	Total	100		
Importance on product durability	Joy Alukkas	50	50.50	2525.00
	Bhima Jewellery	50	50.50	2525.00
	Total	100		
Importance on product purity	Joy Alukkas	50	50.50	2525.00
	Bhima Jewellery	50	50.50	2525.00
	Total	100		
Importance on product design	Joy Alukkas	50	51.35	2567.50
	Bhima Jewellery	50	49.65	2482.50
	Total	100		
Importance on price tag	Joy Alukkas	50	50.37	2518.50
	Bhima Jewellery	50	50.63	2531.50
	Total	100		
Importance in hallmarking	Joy Alukkas	50	50.57	2528.50
	Bhima Jewellery	50	50.43	2521.50
	Total	100		
Importance on price denomination	Joy Alukkas	50	57.99	2699.50
	Bhima Jewellery	50	47.01	2350.50
	Total	100		
Awareness on metal combination	Joy Alukkas	50	50.50	2525.00
	Bhima Jewellery	50	50.50	2525.00
	Total	100		

Product Involvement is the target variable that is comprised by the eight constructs as mentioned in the table 3. The Man-Whitney U test is conducted by taking Branded Retailer Name as the grouping variable.

**Table 4**  
Ranks – Product Involvement

	Branded Retailer Name	Number of Samples	Mean Rank	Sum of Ranks
Product Involvement	Joy Alukkas	50	51.43	2571.50
	Bhima Jewellery	50	49.57	2478.50
	Total	100		

Source : Primary data

**Table 5**  
Test Statistics Product Involvement

	Product Involvement
Mann-Whitney U	1203.50
Wilcoxon W	2478.50
Z	-3.32
P Value	.746

Table 5 shows that the overall P value (Asymp. Sig. 2-tailed) for product involvement is .746. Since the p-value is greater than 0.05, the null hypothesis can be accepted. i.e., there is no significant difference in product involvement level among the two groups of consumers. For both the consumers of Joy alukkas and Bhima, the product involvement level stands somewhat important in their purchase decision.

**Table 6**  
Ranks Consumer Knowledge

	Branded Jewellery Retailer Name	Number of Samples	Mean Rank	Sum of Ranks
Importance on collecting the required information before the purchase	Joy Alukkas	50	51.52	2576.00
	Bhima	50	49.48	2474.00
	Total	100		
Importance on being a knowledgeable consumer while making the purchase	Joy Alukkas	50	50.00	2500.00
	Bhima Jewellery	50	51.00	2550.00
	Total	100		
Importance for collecting required information so that post purchase dissonance can be reduced.	Joy Alukkas	50	50.26	2513.00
	Bhima Jewellery	50	50.74	2537.00
	Total	100		
Importance on being an opinion leader for others.	Joy Alukkas	50	51.38	2569.00
	Bhima Jewellery	50	49.62	2481.00
	Total	100		
Importance on information collection for reducing perceived risk	Joy Alukkas	50	53.33	2666.50
	Bhima Jewellery	50	47.67	2383.50
	Total	100		

Consumer Knowledge is the target variable that is comprised by the five constructs as mentioned in the table 6. The Man-Whitney U test is conducted by taking Branded Retailer Name as the grouping variable.

**Table 7**  
Ranks consumer Product Knowledge

	Branded Retailer Name	Number of Samples	Mean Rank	Sum of Ranks
Consumer knowledge	Joy Alukkas	50	52.25	2612.50
	Bhima Jewellery	50	48.75	2437.50
	Total	100		

**Table 8**  
Test Statistics- Consumer Knowledge

	Consumer Knowledge
Mann-Whitney U	1162.500
Wilcoxon W	2437.500
Z	-.611
P- Value	.542

Note: Branded Retailer Name is considered as the grouping variable.

Table 8 shows that the P value is .542 (Asymp.Sig-2-tailed) is greater than 0.05. As the p-value is higher than 0.05, then the null hypothesis can be true. Hence it can be stated that there is no significant difference in attitude on consumer knowledge among branded jewellery consumers. It is can be inferred that the consumer knowledge or information gathering is important for both consumer groups in their purchase decision.

**Conclusion**

As jewellery becomes significantly central to people’s fashion and lifestyle, it is important to understand how the different product attributes and consumer knowledge sway the consumer’s forethought on their purchase decision. The study is congruous with the earlier studies that argue that consumer product involvement has substantial repercussions on the purchase decision of specialty goods. The literature also says that typically

consumers have a high level of knowledge while making a luxury goods purchase. The results of the study show that for the consumers of branded jewellery, product involvement is an important construct in their purchase decision. As the results show, product involvement is important for the consumers; consequently they usually go through detailed information gathering. As a result of detailed information gathering, the consumers become knowledgeable consumers to make the best purchase decision and minimize post-purchase dissatisfaction. The study validates that product involvement and consumer knowledge are two important constructs in purchasing decisions regarding branded jewellery consumers.

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# The Rationale of Gentle Nudges and its Reflections in the Work Behaviour of Corporate Employees during the Outbreak of Pandemic

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## *Abstract*

Nudges have been emerged as a prominent technique in human resource management through linking the productivity and performance of employees with the gentle alterations made in the existing work environment. The suitability and appropriateness of workplace nudges during the period of COVID-19 need to be assessed to incorporate them in innovative human resource practices and their effectiveness has to be determined in the context of employee engagement and empowerment leading to improved organisational commitment and better work culture. This study focuses on analysing the impact of nudges and their contribution to the productivity and performance of employees during times of chaos. An extensive literature review is conducted to strengthen the theoretical models of nudges in the modified work environment. Multiple cases have been analysed to support the primary and secondary data. Results evidenced categorisation of the strategic measures of corporates as nudge initiatives. The study shows that nudges have positive and negative influences on the behaviour of employees and they check whether the nudges are in alignment with rationality. The paper attempts to determine the effectiveness of nudges in the workplace contributing to increased productivity and improved work culture. It adopts extracts from case studies and insights from reviews offering a comprehensive idea about the implications of workplace nudges during the period of a pandemic.

**Keywords :** Nudges, productivity, work behavior, work culture, employee empowerment

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## **Introduction**

Nudge is an intervention, an aid, or a gentle reminder which enables persons to make better decisions. Rather than being rational, people always show leniency towards their emotions and social norms. This psychological aspect of human behaviour demands the essentialities of

nudges among almost every facet of life. When a challenge approaches human being thrives hard to survive and would come up with feasible solutions. COVID -19 has been a great disaster to mankind across the world and everything came to a standstill when mandatory measures have been adopted to curb the spread of the virus. But nothing can be ceased for long,

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so alternatives emerged for leveraging the normal human activities.

Manpower being the most crucial strategic asset and the key factor in organisational productivity and efficiency of any enterprise, Human Resource Management has been evolved as an inevitable area of concern. The COVID-19 shock has fuelled up the need for developing innovative risk and change management strategies by imparting the existing knowledge in the restricted work environment. It had become the need of the hour for HR managers and organisational psychologists to suggest adaptive human intervention techniques for decision making at the individual and organisational level. Indian Corporates have offered the Work from Home option, seen as a default nudge so that employees can work while confronting the notions of social distancing without compromising their health (Ilieva & Drakulevski, 2018). Advancements in technology have contributed to efficiently operationalize entire activities without physical involvement. Virtual team and virtual leadership models have been evolved which embraces behavioural change intervention techniques such as reminders, defaults, and priming aiming at efficient and effective corporate work culture. This study focuses on the effect of nudges in Human Resource planning and its implementation during the period of the COVID- 19 situation. The study also analyses the positive and negative effects of nudges on overall productivity and organizational performance in the Corporate sector from the perspectives of both employer and employee. On the above, it tries to convey that the use of rational nudges brings out the best when people are irrational.

## Objectives

To nudge means to remind, to alert or to mildly warn. Nudge is a type of

design-based approach using positive and negative reinforcements to shape the behaviour of the people (Yeung, K.,2016). It is a highly subjective concept making it difficult to ascertain its reliability and replicability under public emergencies, so it is of immense importance to assess the effectiveness of nudges while handling challenges like the COVID-19 pandemic (Debnath R,2020).

Workplace nudges, based on the theory of behavioural economics insights, are simple and cost-effective techniques to help employees in converting their purely personal intentions into fruitful actions (Ilieva & Drakulevski, 2018). The application of nudges incorporates the empowerment of employees during times of hardship and ensues positive adaptability for the organisations. The study focuses on evaluating the effect of nudges on the work behaviour of employees and assessing the modifications in work culture during the outbreak of COVID - 19. The pandemic raised serious questions regarding the corporate firm's ability to carry out uninterrupted business processes, which resulted in switching over the existing work culture to home. It also focuses on the changes in productivity after the implementation of nudges and also analyses the positive and negative impacts of workplace nudges.

## Research Methodology

The study design is exploratory cum descriptive in nature. The case study approach is adopted to know the effect of nudges among the employees of the corporate sector, to be specific- IT and Software services. It also uses data from secondary sources and existing author's views are blended to conclude the effects evident in the workplace due to nudging from the perspective of employers. The study indicates the current state of the art in the field of workplace nudging.

The study employed a multiple case design as it uses replication based on various sources of evidence rather than sampling logic (Yin,1993). Employees of the top ten IT and Software service companies are selected based on market sales during the year 2020 and remote data collection methods such as short message service & in-depth telephonic interview are used as it helps to limit the frequency and number of contacts made between individuals during pandemic situation (Csos et al., 2020). The interview focuses only on relevant factors influencing work behaviour due to the implementation of nudges at the workplace.

The research approach extends to reviews that assess the literature on nudging systematically and adds a conceptual clarity on the different dimensions. The approach has several advantages, particularly its ability to answer some exploratory research questions. The study covers academic articles and surveys relating to Human Resource Management during the COVID -19 period to connect the labour productivity and nudges offered by the employers to the employees. We have taken papers of different dimensions of nudging from different databases and applied them in the theoretical models of human resource management. The review identifies the gaps and the missing linkages of present research on nudging in management.

### **The Relevance of Nudges in Human Resource Management**

The term 'nudge' has been coined by James Wilk before 1995 in Cybernetics (Wilk J.,1999). In this context, a nudge is a small, targeted design for a specific group of people irrespective of the degree of intervention. A nudge is any aspect of the choice architecture that predictably changes the behaviour of people without forbidding any options or significantly

changing their economic incentives. The intervention must be easy and cheap to avoid for a nudge. Nudges never compel but placing fruit at the eye level counts as a nudge and banning junk food does not qualify as a nudge. (Thaler and Sunstein,2008).

The central focus of nudge theory is the biases and heuristics program of Nobel prize laureates Daniel Kahneman and Amos Tversky, which is uprooted in dual-system theories of cognition and information processing and it is made available to the public by Kahneman's famous book *Thinking, Fast and Slow* (2011). Under the dual system theory, system 1 is automatic, quick, and lack the sense of control while system II is slow, reflective and demand effortful activities for information processing. Both system 1 and system II are encompassed together in the decision-making process. The automatic system is subjected to biases and heuristics which speeds up decision making while the reflective system reviews and reinforces the biased decisions (Kahneman & Tversky 1979). Nudging techniques take advantage of system 1 through interventions - offering choice alternatives for decision making resulting in the most desired outcome. Nudging overrides people's rationality substantiates the same (Grüne-Yanoff 2012).

Libertarian paternalism is the idea for influencing human behaviour while respecting their freedom of choice. Choice architecture is the context upon which the nudges are applied so that those interventions affect decisions. To modify the employee behaviour, at first companies need to identify the required behaviour pattern and define the targeted behaviour clearly. Then, determine whether the choice architecture or the pragmatic behaviour change approach is to be adopted. On analysing the behavioural bottlenecks, reasons for diversion from

targeting behaviour can be established, and thus it enables the selection of the right intervention technique (Ilieva & Drakulevski, 2018).

The underlying principle of libertarian paternalism is to offer nudges for any benefit without any harm. Designing default HR options require a cautious effort of choice architects considering the power of inertia. The default nudge adopted to improve the productivity of knowledge workers showed positive results (Ebert & Freibichler, 2017). Knowledge workers usually complained about the workplace environment as they could not concentrate on their task due to numerous distractions. Ebert and Friebichler (2017) proposed an idea for having a “no meeting day” every week after realising that knowledge workers spend a lot of time in less efficient meetings and also proposed another default nudge for adjusting the business software of meetings by shortening the duration of meetings.

Adoption of systematic and innovative HRM practices along with complementary intervention techniques can contribute to a positive effect on productivity, efficiency, and effectiveness in an organisation (Shaw, 2004). To form such complementary HRM systems, advancements in practices including teamwork, training, vigilant recruitment, financial incentives, job rotation, information sharing, and transparency must be applied together with conventional methods to achieve further organizational performance (Shaw, 2004.). There arises the need for developing choice architecture. Nudging in human resource management is an approach that adopts insights from behavioural economics in organisations to optimize the fast thinking and unconscious behaviour of employees in line with the objectives of the organisation (Ilieva & Drakulevski, 2018). Effective and well-designed nudges allow freedom of choice based on personal preferences along with

the encouragement to select a particular option. Interventions based on reminders are effective while addressing the limited attention and cognitive capacities of humans. It modifies the salience and ease of accessing options promising active and reflective decisions (Haugh, 2017; münsher et al., 2015; Szaszi et al., 2018). Defaults are already set courses of action which came into effect if the decision-maker remains silent. It is relevant to note that the decision-maker is left with the freedom to select a different option (Ilieva & Drakulevski, 2018). Implementation intentions are techniques for goal attainment that define the conditions for activating specific behaviours. They are mental links between a certain future condition and the unconsciously created, goal-directed behaviour (Shantz & Latham, 2011). A primed goal activated unconsciously had a positive impact on job performance lasting over an entire work shift.

### **Work Culture and Employee Empowerment**

The work environment of an organization influences the individual performance of an employee as he should feel safe and comfortable while carrying his profession. The well-known phrase of Peter Drucker “Culture eats strategy for breakfast” explicitly implies the relevance of organizational culture being the key determinant of success or failure for organisational strategies (Engel, 2018). Culture can be a facilitator as well as a hindrance in carrying out activities in any organization. Culture is the complex phenomenon comprising knowledge, art, morals, law, belief, custom, and any other capabilities and habits acquired by humans as a part of society (Tylor and Robert). Better employee relation and engagement is possible through a cautiously developed organisation culture thus improving productivity.

Positive perception about the company motivates the employees to build confidence for achieving pre-defined goals, to inculcate trust and belief between employer and employee, to understand the original value, norms, strategies, and policies of the organisation, thus contributing to improved productivity and increased probability of stay and loyalty in the company (Vyas, 2017). Instilling well-designed nudges in the corporate work environment has significantly contributed to increased employee engagement during the period of disruption and it has facilitated the corporates to move ahead with the new modus operandi even after everything gets back to normal.

### **Redefinition of the Existing Work Culture**

The lives of employees and employers across the globe faced fundamental challenges due to the pandemic. At the individual level, the shutdown has an impact on employees as they were turned overnight into i) “work from home” employees, ii) “vital” or “life-sustaining” workers (e.g., emergency medical personnel, banking staff, and supermarket staff), or (c) displaced employees seeking the unemployment benefits. At the organization level, the economic lockdown and related actions (i) changed the fundamentals of some industries, (ii) accelerated trends that were already under infancy in other industries, and (iii) offered opportunities for novel industries to emerge, as typically happens during wars and natural disasters. Given the uncertainty and breadth of the COVID-19 shock, work and organizational psychologists urgently need to apply the field’s current knowledge for sensemaking to help individuals and organizations manage risks while developing and applying solutions.

Setting the default to exploit the default effect is an example of a liberal paternalist

policy. Though work from home remained as an employee preferred option in the corporate sector, the outbreak of COVID-19 forced many to get engaged in Mandatory Work from home- which can be considered as the default intervention strategy. The fourth Industrial Revolution along with COVID 19 recession has resulted in a rapid and robust shift to remote work culture, regarded as the driving force behind the surge for work from home arrangements.

The presence of team style of Human resource deployment is very pertinent in organisations. The team may be face to face team as well as a virtual team. Managing virtual teams is different and more complex than managing face-to-face teams. The effective management of virtual teams requires knowledge and understanding of the fundamental principles of team dynamics regardless of the time, space, and communication differences between virtual and face-to-face work environments. ( Berry, Gregory 2011). During the COVID period, the uses of virtual teams have replaced the face-to-face teams in many organisations especially IT companies, and have been experiencing great success. The peculiar situation emerged due to COVID has accelerated the expansion of virtual teams - valuable for HR managers and researchers to monitor and study innovations enabling the optimal functioning of teams. The remote work environment in times of global crisis led to psychological problems among workers due to stress and anxiety, which can be communicated and addressed in virtually connected networks but they lack social and emotional cues (Lindebaum, Geddes, & Jordan, 2018). Virtual teams seem more effective in brainstorming than face to face interactions (Smith, & Hantula, 2007). On the other hand, online teammates miss the creative benefits of frequent face-to-face interactions which may hamper individual



performance(Allen, Golden, & Shockley, 2015). Virtual leadership models have also been established to control and coordinate millions of employees from different hierarchical levels to work remotely.

### **Linking Nudges and Productivity during Pandemic Days**

Nudges are liberty-preserving approaches that steer people in specific directions, but also give them the freedom to choose their way (Sunstein, 2014). Work from home is a successful default nudge as it offers employees the privilege of meeting deadlines by sitting on their comfortable couch. At the same time, it has proved beneficial for employers too, diverse talents can be pooled together irrespective of geographical limitations which have a positive impact on the organization's revenue and innovation. It is evident from a random control trial on 1,000 employees of Ctrip, a Chinese travel company in 2013. The experiment showed that working from home for nine months resulted in a 13 percent increase in performance – almost an extra day of output per week – plus a 50 per cent top in employee- turnover rates. The experiment was so successful that Ctrip adopted working from home to the whole firm (Bloom et al., 2014).

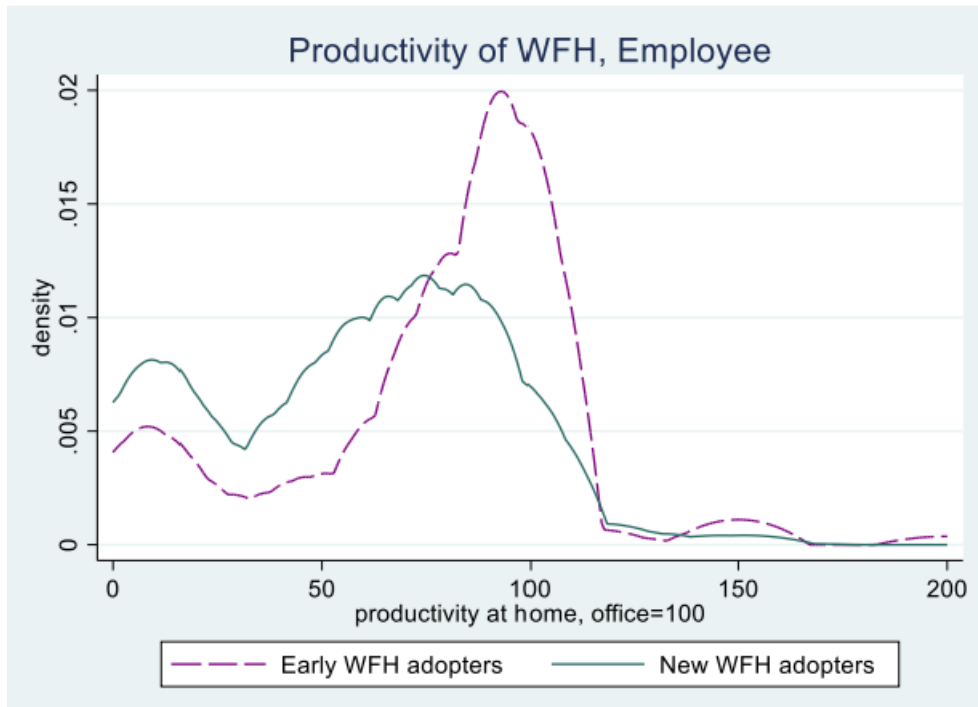
Exposure to the unprecedented challenging situation has practical and social implications- both positive and negative so that the nudges adopted by the employers towards the employees

have a mixed response. The worldwide work-from-home movement aimed to maintain output and efficiency during the COVID-19 pandemic could actually in a worldwide productivity slump and threaten economic growth for many years, says Nicholas Bloom, a senior fellow at the Stanford Institute for Economic Policy Research (SIEPR). Bloom said, “we are supposed to work along with kids, in unsuitable spaces, without any choice or in-office days” (The Productivity Pitfalls of Working from Home in the Age of COVID-19 | Stanford News, n.d.).

The pandemic situation affects the employees' daily life adversely, which harms their productivity. Employees experience nosophobia of the COVID-19 outbreak and are afraid of being infected. Most of them feel disconnected due to social isolation and are frustrated of being in the restricted same home environment for a long period. Their work-life balance got disturbed as they could not avail the domestic support services from their cleaners, babysitters, caregivers because of the COVID-19 quarantine period of social distancing. So they need to engage in these household affairs and take care of their children and elderly members of the family in their work environment, which leads to low levels of productivity (Thorstensson, 2020). In all the above it is evident there is a paradigm shift in the existing work culture during the pandemic days.



**Figure 1** : Distribution of Work from Home Productivity by the Timing of the Start of Working from Home



Source: <https://www.riti.go.jp/jp>

Note: “Early Work from Home (WFH) adopters” implies those who practiced the COVID-19 pandemic while “New WFH adopters” implies those who initiated WFH after the start of the COVID-19 pandemic.

Figure 2 shows the excerpt from “Productivity of Working from Home during the COVID-19 Pandemic: Evidence from an Employee Survey” conducted by Rakuten Insight, Inc., and contracted out by the Research Institute of Economy, Trade, and Industry (RIETI) in late June 2020 in Japan. The empirical survey showed that 32% of employees are already practicing Work from home while 28% have started Work From Home after the onset of the COVID-19 pandemic. It also stated that the workforce input from Work From Home was about 19% of weekly working hours. Again questions

upon productivity showed that 82 % of employees working at home have lower productivity than in their usual workplace. The mean Work From Home productivity was about 60% to 70% of the productivity at the workplace and lower for employees that started Work From Home after the onset of the COVID-19 pandemic. The aggregate loss arising from lower productivity at home was estimated to be approximately 7% (Morikawa, 2020).

**Case Study**

The case study method can be defined as an empirical investigation into a contemporary phenomenon in its real-life perspective where the distinction between phenomenon and perspectives remain unclear and for which numerous sources of evidence can be used (Yin,1984). In

this study, employees of the top ten IT and Software services companies in India, ranking based on revenue generation for the year 2020, undergoes in-depth telephonic interview and short messaging service mechanisms as making personal contact is inadvisable as per social distancing protocol.

Top Ten IT-Software companies are as follows

1. TCS
2. Infosys
3. Wipro
4. HCL Tech
5. Tech Mahindra
6. L&T Infotech
7. Mindtree
8. Mphasis
9. Oracle Fin Serv
10. Persistent

Three employees from each company are contacted via telephone and are inquired about the implications of strategic alterations in organizational structure made in the form of workplace nudges introduced during the pandemic situation. They are also asked to assess their

experience in the amended environment and contribute their viewpoints in before and after nudges context. For the com interview following strategies are identified as nudges

- Press notes and circulars of top officials
- Modified incentive package
- Social distancing norms- no handshake initiatives, no U-turns move
- Work from home
- Virtual meeting and virtual leadership models
- Priming cues
- Perceived proximity initiatives
- Alerts regarding financial and health aspects
- Recognition

The discussion document released by the Behavioural Insights Team of the UK Government set out the nine most robust and non-coercive influences on human behaviour –MINDSPACE – can be used as a checklist in policymaking (Ambler et al., 2011). We used it as the base for classifying the nudges adopted by Corporates in India during the outbreak of COVID-19.

**Table 1**

Expansion of acronym MINDSPACE and the strategical modifications introduced during COVID-19 situation.

Types of nudges	Meaning	Strategies adopted
Messenger	Influence of the communicator.	Video conferencing (Dhawan, 2020) Press notes or tweets of tech experts and top officials.
Incentives	Response to incentives- predictable mental shortcuts, such as loss aversion.	Modified incentive package – Wi-Fi allowance, BYOD, home office furniture allowance (Phani,2020)
Norms	Influence of what others do or common practice	Safesense by HCL, Handshake alternatives- Thai wai elbow bow, Wuhan Foot shake (Wright, R. 2020), Clockwise movement in the office space- no U-turns
Defaults	Go with the flow of pre-set options.	Work from home (Morikawa, 2020).

Saliency	Attention to what is novel and relevant.	Virtual team and virtual leadership models (Berry, Gregory 2011)
Priming	Acts are influenced by sub-conscious cues.	“Wash your hands” wallpaper for ZOOM/TEAM background, Frequent popup notification to sanitize hands, Distance bubbles on the floor, Blue light at home improve productivity (HYVE,2020), Mail alerts.
Affect	Emotional associations shape actions.	Perceived proximity (Wilson et al. 2008), Mood measurement techniques - real-time and via pulse surveys
Commitments	Be consistent with our public promises and reciprocate acts.	Alerts regarding financial and health benefits provided by the employer, Brainstorming sessions.
Ego	An act that makes us feel better about ourselves.	Recognition strategies- Congratulation cards and hampers at doorstep, award ceremonies, Cloud clubbing, Home karaoke station, Online workout groups (Wright, R. 2020)

Source: (Ambler et al., 2011)

[www.instituteforgovernment.org.uk/sites/default/files/publications/MINDSPACE.pdf](http://www.instituteforgovernment.org.uk/sites/default/files/publications/MINDSPACE.pdf)

Responses from the selected employees have shown that the strategies of their employers offered them the freedom to choose their own way even if it seems mandatory. Employers induced certain measures for carrying out their operations uninterruptedly with the adoption of nudge techniques. Employees are satisfied as they got an option to win bread during the most distressing situation.

Rather than insisting employees to work, employers gently intervene in their workplace behaviour through modifying the incentive package, facilitating smooth communication through virtual models, applying priming cues to impart caution while working, motivating them through recognition, switching onto novel norms for back to office model, etc.

**Table 2**

Comparative Performance of Top Ten Companies in India in 2019 & 2020

Companies	Sales (Rs Crores)			Gross Profit (Rs Crores)			Net Profit (Rs Crores)		
	Dec 2020	Dec 2019	% Change	Dec 2020	Dec 2019	% Change	Dec 2020	Dec 2019	% Change
TCS	34957.0	33040.0	+5.8%	9907.0	8768.0	+12.99%	9242.0	7683.0	+20.29%
Infosys	22043.0	20064.0	+9.86%	6023.0	4635.0	+29.95%	5083.0	4076.0	+24.71%
Wipro	12596.1	12695.9	+0.79%	2865.0	2446.4	+17.11%	2611.3	2261.3	+15.48%
HCL Tech	9404.0	8654.0	+8.67%	3488.0	2936.0	+18.8%	3397.0	2444.0	+38.99%
Tech Mahindra	7565.0	7699.1	-1.74%	1368.3	975.6	+40.25%	1255.6	923.2	+36.01%
L&T Infotech	2965.5	2634.5	+12.56%	607.1	437.5	+38.77%	494.2	366.5	+34.84%
Mindtree	2023.7	1965.3	+2.97%	396.2	236.4	+67.6%	326.5	197.0	+65.74%
Mphasis	1483.0	1128.5	+31.41%	366.1	297.7	+22.98%	316.3	268.5	+17.8%

Oracle Fin Serv	888.1	835.6	+6.28%	500.8	437.4	+14.49%	391.9	370.7	+5.72%
Persistent	642.6	544.9	+17.93%	129.2	80.8	+59.9%	125.9	90.0	+39.89%

*(Software & IT Services Sector Performance, Software & IT Services Company Share/Stock Performance, Yearly Analysis | Results & Earnings, n. d.)*

The Software-IT sector showed a significant increase in the net profit in 2020 compared to that of 2019 and it can be seen as proof of the success of nudges adopted during the time of strategic breakdown (Refer Table 1). The positive trend in profitability and performance of these companies can be assumed as the appropriateness and adequacy of well-designed nudges in the disturbing work environment. The agile operating model of TCS, Infosys, and other employers grant employees the stake of success through fostering a culture that emphasises transparency, experimentation, continuous improvement, and engagement of employees. Early adoption of the agile approach allowed organisations to implement new, digitally-enabled business processes for reaping improved business outcomes during the COVID-19 situation and there arises no question of resistance from employees towards change management techniques. Top global employers in the corporate sector have confirmed the support for the government to flatten the curve of new cases by engaging employees virtually to address the needs of the industry. Ravi Kumar S, President of Infosys wrote “As cities shut down, travel grinds to a painful halt, and familiar routines become unrecognizable, there are new capabilities emerging and new ways of coping that will seed long-term positive outcomes in our lives—a confluence of opposites born in unprecedented times.” Responses of the employees contributed to the same as the policy adoption took the smooth transition from physical to digital work environment.

The companies monitored the evolving pandemic round the clock to modulate their operations and serving the best for their employees and clients. The modified policies portray contentment among its employees as their needs are addressed with due caution and care. These companies exhibited support to its employees during the period of disruption and gained positive discernments in the highly competitive world. Global upheaval due to COVID-19 forced the companies in migrating to remote digital workplace unit and provisioning employees with advanced cloud collaboration tools. The remarkable resilience of these organisations is evident through its flexible working norms that have an immense impact on employee attitude, quality of work, and better work-life balance. The HCL Technologies launched a contactless workplace model – SAFESENSE is introduced to bring back the essential workforce to the office.

On interpreting the case study results, the application of well-designed nudges at the workplace leads to empowerment of employees which can be linked to increased organisational commitment. An in-depth conversation with the employees has confirmed that they are hugely motivated and remained loyal to their organisation when everything went upside down. The fair and liberal policy formulation in the form of nudges evolved as an ideal HR mechanism and organisations have already initiated efforts towards encompassing nudge theory in manpower management. Based upon the insights from the case study, an operating model have been developed.

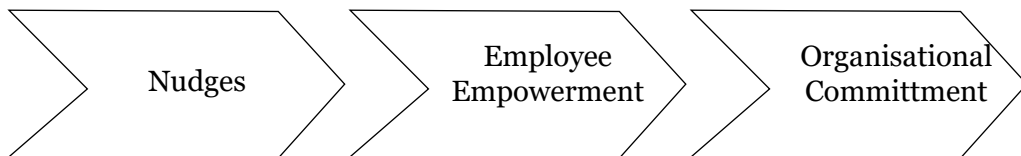


Figure 2 Linkage of Nudges, Employee Empowerment and Organisational Commitment

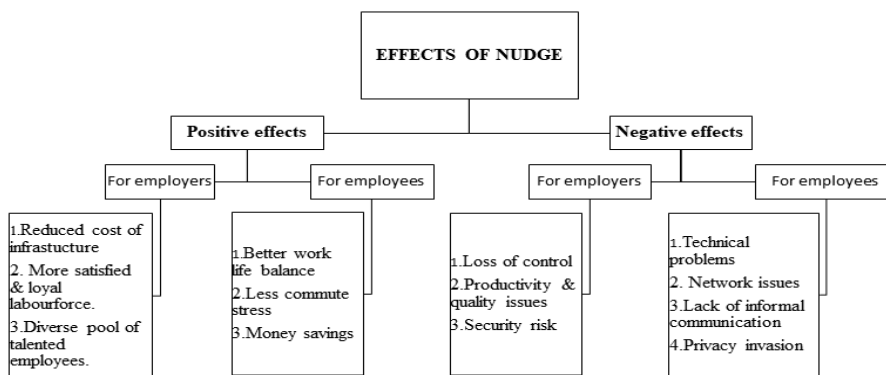
Even though the GDP declines, the IT sector shows an upward trend in profitability which can be inferred as their success of restructuring the existing operating mechanism at the outbreak of COVID-19. The performance of employees has been improved when employers introduced subtle and significant alterations in the work culture without forbidding their freedom. Responses of the employees from the case study are encapsulated as impact of nudges in HRM – both positive and negative effects.

**Impact of Nudges in Human Resource Management**

Even though the ethics of nudges remain a debatable topic, significantly

large-scale individual and collective benefits can be attained by implementing small nudges that are not overlooked in the organizational context (Felin, 2014). Nudges are already being used in HRM but the terminology is not popular. However, identifying and envisioning these kinds of hidden nudges in a theoretical perspective, and determining their effectiveness and level of influence on employee performance and satisfaction is essential to use them consciously and systematically in an effective manner. Thus benefits of nudges can only be maximised for both organisation and employees (*Article: HR’s Nudge Unit – People Matters, n.d.*).

Figure 3 : The Positive & Negative Effects Of Nudge



The chart has been developed through an explorative approach after analyzing the research papers of eminent academicians and institutions and the cases of experiences of employees served

for the industry during the shutdown period. It shows the positive and negative aspects of applying nudges in a work environment and its implications.

## **Positive Effects – Benefits of Nudges**

### *For employers :*

Remote work strategy has benefitted employers as their operations continued in times of compulsory quarantine and complete lockdown. One of the most important advantages of Work from home is the reduction in the cost of infrastructure and the associated amenities. Expenses of the organisation such as rent, maintenance, computers, telephones, offices, utilities, equipment, etc have been reduced (Lupu ,2017). The employers also experienced an increased rate of new technique adapters from different parts of the world surpassing the geographical boundaries. Most of them are loyal and satisfied as the corporate sector fed them during the worst time of their lives.

Due to scarce temporal and financial resources, HR managers cannot address all the personnel interests. They adopt nudging techniques like the application of incentive systems like goalsetting and performance-based pay. To achieve operational performance and increased productivity, HR managers have to convince their subordinates. Teaching and paternalism often do not work out. A sustainable conscious attitude occurs when the person decided on it by him or herself. Therefore, it is not possible to force good decisions, but rather initiate them. (Grunewald et al., 2017). The autonomy to choose what to do helped the organisation during the pandemic days as they never persuaded them to adapt to new propaganda.

### *For employees:*

Work from home complies with World Health Organisation guidelines regarding the social distancing protocol and employees got isolated from the rest of the world without risking their earnings. Flexible work scheduling allows employees to have a certain freedom in

organising their daily chores, both work, and family affairs according to their needs, such as taking care of their children or going for a walk with the dog ( Lupu ,2017). Working from home equipped employees with a quiet environment where they are sheltered from continuous distractions by colleagues, especially in a shared workspace and they enjoyed the freedom to schedule their time to suit their job patterns rather than tailor their working day as per the surrounding environment (Almarzooqi & Alaamer, 2020)

For the employees, the adapted working model save time in commuting to the office, avoiding traffic jams, etc and also financial advantage – as reduced or no expenses for travel, shopping for the office etc. (Almarzooqi & Alaamer, 2020).

Working from home is especially beneficial for “new mothers or the differently-abled who find travel difficult or are unable to leave the home but they can stay in the workforce” (Ford and Butts 1991).

## **Negative Effects - Challenges of Nudges**

### *To employers:*

Organisations fear that they may lose actual control over their employees as they may give priority to their personal errands over the work. Productivity and quality problems arise due to distractions in the home environment of the employees.

There exist a security risk of unauthorized access to the system and confidential company database when the important files reach employee’s computer terminals. It may lead to serious problems if it can be accessed by its competitors (Thorstensson, 2020)

### *To employees:*

The technical problems which cannot be solved remotely, employee alienation, lack of interaction with teammates, and



troubles in organizing team activities are some of the drawbacks associated with work from home (Lupu ,2017). Installing a high-speed internet connection adds extra tasks and costs on the worker which has become a mandatory prerequisite for work from home (Almarzooqi & Alaamer, 2020).

Another limitation is the lack of opportunity to have an informal communication network with colleagues. When the employees are deprived of such interactions, they may feel isolated from their colleagues and estranged from the company goals and values (Ford and Butts 1991).

Even before COVID-19, employers started adopting new forms of surveillance for monitoring employees, for example, they use sociometric sensors (Bhave, Teo & Dalal, 2020). Since managing-by-walking-around cannot be done when employees are working remotely, they rapidly expanded the use of videoconferencing. These virtual sight-lines can add up to the perceived stress of employees through continuous monitoring and feelings of privacy invasion. The faraway and automated monitoring can increase the centralization of management and may lead to the dampening of creativity among the labour force (Nell et al., 2020).

Workplace loneliness harms employees' affective commitment, affiliative behaviours, and performance (Ozcelik & Barsade, 2018). Virtual communications lacked richness, and it may result in a risk of misunderstandings in online communications due to the absence of nonverbal cues which may increase employees' concerns of being rejected, trigger loneliness (Cacioppo et al., 2006).

## **Conclusion and Discussion**

Workplace interventions based on behavioural economics insights are a

simple and cost-effective method to help employees to transform their intentions into actions. It is essential to become aware of the pertinent prejudices that hinder the exhibition of the target behaviour in the process of connecting the insights from the bottleneck analysis to specific choice architecture intervention techniques (Münscher et al.,2015). The recent developments in virtual interactions and remote teambuilding offer an opportunity to evaluate the current system and also suggest interventions to improve teamwork in virtual settings. Close attention and regulation are required in multidimensional aspects as virtuality varies among remote teams (Mak & Kozlowski, 2019).

The era of corona phobia demanded interventions differently as the employees are more concerned about health and security. Maintaining a productive and efficient workforce during challenging situations can be done only through the adoption of liberal and negotiable policies. Most of the corporates have confronted the issue with an optimistic outlook – by providing their employees with the autonomy to decide their working hours, monetary incentives for network facility, informal online meetups, yoga and dance sessions, infotainment services such as a free subscription to OTT media services, tickets for virtual music festivals, etc, discount coupons in online shopping and services. Online award ceremonies, thank you gifts at doorstep, lucky draw contests, etc have been introduced as “dopamine-rush” techniques that ensure employee retention. To achieve further improvements in new corporate work culture productivity, innovation in information and telecommunication infrastructure is necessary enabling effective human interactions as same that of face to face communication. Prodoscore, a global leader in employee visibility software announced that remote

worker productivity increased by 47% and general work trends showed the sudden and overwhelming shift to remote workforces began in March 2020, despite the coronavirus lockdown.

Nudge management offers exciting avenues to increase knowledge worker productivity by redefining the organisational framework and focusing on the intersection of automatic and reflective systems in improving efficiency, effectiveness, and motivation (Ebert & Freibichler, 2017). It is difficult to measure the effectiveness of nudges and default rules. The employees always prefer to respond to rational nudges and they may show indifference when encountering irrationality. Further research needs to be conducted on the area of application of Nudge theory in Human Resource Management, especially in challenging situations. As nudges have the potential for influencing human behaviour subconsciously, the use of well-designed and appropriate nudges can make extraordinary results in an organisation in terms of employee productivity and overall performance. Appropriateness and applicability of nudges have to be decided with due care and diligence as manipulation of human activities need not be positive always. Immense opportunities in digitalisation, big data, and change management approach enable the companies to evaluate the success rate of nudges, thereby suggesting the modifications and customisation needed for tomorrow.

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# Jurisprudential Exposition of Intellectual Property Rights

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## *Abstract*

Human beings possess human rights, fundamental rights, statutory rights and natural rights. Property may be tangible, intangible, movable, immovable etc. Properties like house, land, jewellery, utensils etc can be seen and we can store movable properties somewhere safe. Some properties or rights human beings are entitled to, which cannot be seen or kept in safe places and these properties are the creation of human mind known as intellectual property. For the overall development of a nation, granting of intellectual property rights (IPR) is inevitable. But IPRs are being subjected to various criticisms like it is against human rights, equality, human dignity, ethics, competition law etc. This paper is an attempt to analyse the different IPRs, legislative frameworks, criticisms levelled against IPRs and also some suggestions for the proper balancing of IPRs and rights of the society. The work is completed using various text books on IPR, web sites, cases of various courts, international documents and statutes. The outcome expected is to create awareness and a clear knowledge about the various IPRs, the rights of IPR holders, remedies for infringement of rights etc.

**Keywords :** Intellectual property, patent, copyright, trademark, traditional knowledge etc

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## Meaning and classification of Property

The term property has various definitions and was added different explanations from time to time. Property is derived from Latin word 'proprietas' which means ownership.<sup>1</sup> That means one's property is what one owns or what one has as specially his. Once the right to property is vested in a person in respect of a thing, a corresponding duty is imposed on others not to interfere with the owner's

use of things (Dr.G.B.Reddy, 2014 , 9th edition). The Hon'ble Supreme Court had observed in I.C.Golaknath v. State of Punjab<sup>2</sup> that property right forbids all other persons from interfering with the owner when the owner exercises his right over the thing owned up to the point where limits are fixed by law. Property can be classified into corporeal, ie tangible including land jewellery and incorporeal ie intangible including intellectual property.

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<sup>1</sup>WordSenseDictionary, proprietas(Latin)[https://www.google.com/search?q=WordSense+Online+Dictionary+%3Chttps%3A%2F%2Fwww.wordsense.eu%2Fproprietas+&rlz=1C1RLNS\\_enIN721IN721&sxsrf=APq](https://www.google.com/search?q=WordSense+Online+Dictionary+%3Chttps%3A%2F%2Fwww.wordsense.eu%2Fproprietas+&rlz=1C1RLNS_enIN721IN721&sxsrf=APq) accessed 11th February 2022

<sup>2</sup>AIR 1967 SC 1643

## Meaning of Intellectual Property

Intellectual property means the rights granted by legislations, which results from using human brain or idea in the industrial, scientific, literary and artistic fields. It is more precious than the tangible ones (Dr.B.L.Wadehra, 2017). In *Gramophone Company of India Ltd v. Birendra Bahadur Pandey*<sup>3</sup>, the Hon'ble Supreme Court had observed that intellectual properties being the creativity of the authors, their efforts should be considered to be their property. The WIPO Convention<sup>4</sup> establishes the matters included in Intellectual Property Rights (IPR).

## Classification of Intellectual Property

Intellectual property can be classified into two branches viz Industrial Property and Copyright and Neighbouring rights. Industrial property includes Patents, Trademarks, Industrial Designs, Lay Out Design and Geographical Indications whereas Copyrights and Neighbouring rights are writings, musical works, dramatic works, audio visual works, paintings and drawings, sculptures, photographic works, architectural works, sound recordings, performance of musicians, actors and broadcasts etc (Dr.B.L.Wadehra, 2017). Patent is a right in some new invention or article created by its author or owner.

Copyright is a right in some creation of art, a manuscript or book or article, a recorded sound etc. Design right is a new design and Trademark is a mark created by its maker (P.K.Nagarajan, 2001).

## International Character of IPRs

Even in the 19th century, there was Paris Convention for the protection of Industrial Property<sup>5</sup> and Berne Convention for the protection of literary and artistic works.<sup>6</sup> Paris Convention covers industrial property in broad sense which includes inventions, models, and appellations of origin, trademarks, service marks and industrial designs. The Berne Convention includes protection of literary, scientific and artistic domain irrespective of the form of expression (Mony, 2019). World Intellectual Property Organisation (WIPO) was created by Convention establishing WIPO on 1967 and entered into force on 1970. The aim was to promote protection of intellectual property throughout the world and to have administrative co-operation among unions, harmonising national laws in IPRs and offering assistance to nations.<sup>7</sup> Trade Related Aspects of Intellectual Property Rights (TRIPS) is an agreement of WTO the objectives of which include transfer of technology to the producers and users in a mutually advantageous manner.<sup>8</sup>

<sup>3</sup> AIR 1984 SC 667

<sup>4</sup> It is a multilateral treaty which established World Intellectual Property Organisation in 14th July 1967. Convention Establishing WIPO <<https://www.wipo.int/treaties/en/convention>> accessed 24 October 2021

<sup>5</sup> This was entered into in 1883 for ensuring that the inventors or creators will be protected in other countries. <<https://www.wipo.int/treaties/en/ip/paris>> accessed October 23, 2021

<sup>6</sup> This was entered into in 1886 and pertains to artistic works, musical works, and other creators the mode of protecting their works <[https://www.wipo.int/treaties/en/ip/berne/summary\\_berne.html](https://www.wipo.int/treaties/en/ip/berne/summary_berne.html)> accessed October 23, 2021

<sup>7</sup> Article 3 of the Convention establishing WIPO. <<https://wipolex.wipo.int/en/text/283854>> accessed 22 October 2021

<sup>8</sup> Article 7 TRIPS Agreement <[https://www.wto.org/english/docs\\_e/legal\\_e/27-trips\\_01\\_e.htm](https://www.wto.org/english/docs_e/legal_e/27-trips_01_e.htm)> accessed 26 October 2021

## Legislative Framework of IPR in India

India is one of the few countries in the world which had enacted number of legislations on IPRs<sup>9</sup> which include The Patents Act 1970, Copyright Act 1957, the Trademarks Act 1999, The Designs Act 2000, The Geographical Indications of Goods (Registration and Protection) Act 1999, The Protection of Plant Varieties and Farmer's Rights Act 2001 and Biodiversity Act 2001.

### Overview of Patents Act 1970

Patent is a statutory right granted by a state to an inventor for a novel, non-obvious invention having utility.<sup>10</sup> The quid pro quo<sup>11</sup> of the contract is a public disclosure of the invention after 20 years. The Hon'ble Supreme Court opined in *Biswanath Prasad Radhey Shyam v. HM Industries*<sup>12</sup> that patent law is to encourage new technology and scientific research. The grant of patent is governed by the domestic patent law of a country (T.Ramappa, 2010) as all IPRs are territorial in nature. A comprehensive statute, Inventions and Designs Act 2011 was replaced by the Patents Act 1970 which was amended several times to make it in compliance with TRIPS Agreement. It consists of 23 chapters and 163 sections and consolidates and amends the law relating to patents in India. Patent<sup>13</sup> is granted for any new invention of industrial

utility which can be a new product or a process which involves an inventive step. The Act specifically excludes certain frivolous or immoral inventions<sup>14</sup> and inventions relating to atomic energy from patentability.

### Procedure for Obtaining Patent

The inventor has to file application and the patent office examines the patent application for defects if any.<sup>16</sup> Any person can oppose the application on grounds of prior use, knowledge, lack of inventive step etc. After compliance with objections, the grant of patent is again published. After grant of patent, any interested party can oppose within one year.<sup>17</sup> If the oppositions are rejected, patent will be granted. The term of patent is 20 years from the date of filing of patent but it can be cut short by the government by the grant of compulsory licence to any person to work on the patent if the patentee fails to work on the same.

### Rights of the Patentee

Patentee only can make, use sell or import the product as well as the process patented.<sup>18</sup> When patented invention is used unauthorisedly, that amounts to patent infringement. The reliefs available to the patentee includes interim injunction, damages or account of profits or permanent injunctions.<sup>19</sup>

<sup>9</sup> Misra (n 2) 60

<sup>10</sup> Binda (n 17) 15

<sup>11</sup> Something given or received for something else. <<https://www.merriam-webster.com/dictionary/quid%20pro%20quo>> accessed 20 October 2021

<sup>12</sup> AIR 1982 SC 1444

<sup>13</sup> Section 2 (1)(m) Patents Act-patent means any patent granted under the Act

<sup>14</sup> Section 3 Ibid

<sup>15</sup> Section 4 Ibid

<sup>16</sup> Binda (n 17) 31

<sup>17</sup> Section 25 (2) (n 30)

<sup>18</sup> Binda (n 17) 33

<sup>19</sup> Wadehra ( n 13) 56

## Summary of Trademark Law

Trademark is one which is capable of distinguishing goods and services provided by one individual from those provided by another.<sup>20</sup> It provides the customer a means to differentiate goods based on their quality. The Hon'ble Supreme Court had held in *Laxmikant Patel V. Chetanbhat Shah*<sup>21</sup> that the definition for trademark also means marks which can be geographically represented and which is capable of distinguishing goods or services of one person from those of others. The law relating to trademark is Trademarks Act 1999 consisting of 159 sections.

## Procedure for Obtaining Trademark

The person who likes to register a trademark shall file application to Registrar which will be published and oppositions will be heard. If the trademark is not distinctive, if deceives the public, if creates confusion, if it is scandalous or obscene or prohibited under Emblems and Names (Prevention of Improper Use) Act 1950, it will be refused. Anyone can oppose and after hearing parties, Registrar may accept or refuse opposition.<sup>22</sup> If there is no opposition, trademark will be registered. There are different types of trademark in the Trademarks Act. Well known trademark is one which has become well known to the public and if that trademark is used, it may be considered as having connection with first mentioned goods or services.<sup>23</sup> Certification trademark is one

which is certified by the owner regarding the material, mode of manufacture, quality, accuracy and other characteristics.<sup>24</sup>

## Rights of Trademark Owner

The registered trademark owner has the exclusive right to use the trademark. He has the right to assign or file suit for infringement and get reliefs like injunctions whether permanent or temporary. Criminal remedies are also there for unauthorisedly dealing with trademarks. The validity of trademark is for 10 years renewable for unlimited number for 10 years.<sup>25</sup>

## Copyright Act 1957 in a Nutshell

Copyright is the first intellectual property that has been recognised in the world. The law of copyright gives protection to creative human genius including works of arts and literature.<sup>26</sup> The object of copyright law is to protect the interests of authors, composers, artists, designers and to encourage them for creating original works granting them exclusive right to exploit the work for a specific period. The law of copyright in India is Copyright Act 1957 consisting of 79 sections the object of which is to encourage authors and creators by giving them exclusive right for a period specified in the Act.

## Subject Matter of Copyright

The Copyright Act provides protection to literary works, artistic works, musical

<sup>20</sup> Section 2(1)(zb) of Trademarks Act 1999

<sup>21</sup> AIR 2002 SC 275

<sup>22</sup> Section 21 (n 37)

<sup>23</sup> *Binda* (n 17) 87. For example, 'Apple' for computers, 'Mercedes' for cars

<sup>24</sup> ISI mark for industrial Products, FPO marks for agricultural products etc. Meenu Maheswari, Certificationmarks;An Indian Perspective(24 February 2014) <<https://www.mondaq.com/india/trademark/295156/certification-marks-an-indian-perspective>> accessed 20 October 2021

<sup>25</sup> Trademark in India <<https://www.ip-coster.com/IP Guides/trademark-india>> accessed 21 October 2021

<sup>26</sup> *Nagarajan* (n 14)) 46



works films and sound recordings.<sup>27</sup> In all the above works, copyright subsists for 60 years after the death of owner if the work was published during the lifetime of the owner. In case of anonymous works, copyright subsists for 60 years following the year of publication. On application and payment of fee, Registrar is authorised to register copyright after following procedures in the Act.<sup>28</sup>

### **Rights of Copyright Owner**

The owner of copyright has the right to reproduce the work, issue copies of work and can communicate the work to public. Even though the owner has monopoly right over the copyright, there are situations when the use of copyrighted work would not amount to infringement, which is known as the Doctrine of Fair Use or Fair Dealing. This exception is provided under the Copyright Act.<sup>29</sup> This exception is available when the work is used for personal purpose, research work or for private use.<sup>30</sup> The Act provides for civil and criminal remedies against infringement of copyright.

### **Overview of Industrial Design Laws**

Visual appeal of articles or goods plays an important role in influencing a buyer. Industrial design means the shape, configuration, pattern or ornamentation in an article or a process. The law relating to designs is Designs Act 2000 which consists of 48 sections and the object of the Act is to consolidate and amend the law relating to designs in India. The design must be special, distinctive, and significant

and appeal to the eye for the purpose of registration. Any proprietor can file an application before the Controller General of Patents, Designs and Trademark along with four copies of design and statement of novelty. If there is no objections or if objections are removed, Controller will register the design (Narayanan, 1999).

### **Rights of Design Holder**

On registration, registered proprietor alone will be entitled to the right to exclusive use of design which is known as the copyright in design. Proprietor will have the right to protect the design from piracy. The term of design is for 10 years.<sup>31</sup> When the design is unauthorisedly used or imitated by any person, the proprietor can file suit for recovery of damages or injunction against repeating such piracy.

### **Protection of Geographical Indications**

Some geographical names have got significance for the nature and quality of goods. The Geographical Indication of Goods (Registration and Protection) Act 1999 aims at registration and protection of geographical indications in India. It consists of 87 sections. Geographical indication is a name used on goods from a particular geographical area which carries peculiar features that is due to that place of origin.<sup>32</sup> Any association of persons or producers who would like to register geographical indication can apply to Registrar in the prescribed format. The application should contain statement as to how the geographical indication originate

<sup>27</sup> Section 13 (1) Copyright Act 1957

<sup>28</sup> Section 44 Ibid

<sup>29</sup> Section 52 Ibid

<sup>30</sup> Dipak Rao, Sana Singh, Acceptable Use of Copyrighted Material, 10th June 2020 <<https://copyright.gov.in/Exceptions.aspx>> accessed 28 October 2021

<sup>31</sup> Section 11 Designs Act

<sup>32</sup> Singh (n 6) 450. Example includes Alphonso Mango, Basmati, Kanjiwaram Silk

from the concerned territory, the specific quality and reputation exclusive to the geographical environment, classes of goods to which this geographical indication will apply etc. The registered proprietor or authorised user of geographical indication can use it exclusively for ten years but may be renewed from time to time.<sup>33</sup> When any person without authorisation uses geographical indication misleading the public or do unfair competition amounts to infringement.

### Farmer's Rights

TRIPS Agreement required member states to offer protection of plant variety either by patents or sui generis system.<sup>34</sup> India enacted Protection of Plant Varieties and Farmer's Rights Act 2001 to provide protection of plant varieties to ensure rights of farmers and plant breeders.<sup>35</sup> An authority is established under the Act for encouraging and development of new varieties of plants and to protect rights of farmers and breeders through registration. The registration is valid for 9 years for trees and 6 years for other crops and can be renewed.

### Traditional Knowledge

The IPRs like patents, trademarks, copyrights and designs are created by individuals and they get monopoly rights over their IPRs for the limited time mentioned in the respective legislations.

But there are certain knowledge which is being transferred from generation to generation from time immemorial which is not defined anywhere there is no legislation to protect the same. Hence this has been commercially exploited by companies and corporations in developed nations depriving the indigenous communities of their rights. This mostly occurs in Ayurveda, agricultural methods, folklore and textile designs.<sup>36</sup>

WIPO defines traditional knowledge referring to tradition based literary, artistic or scientific work and also undisclosed information.<sup>37</sup> It is indirectly protected in some IPR legislations. The Patents Act 1970, by the 2002 Amendment Act makes it mandatory for the applicant to disclose the source and geographical origin of any biological material.<sup>38</sup> As per Trademarks Act, marks which indicates geographical or customary origin shall not be registered.<sup>39</sup> Designs Act also prohibits registration of designs which are not original.<sup>40</sup> The Biological Diversity Act 2002 is for protecting biological diversity and sustainable development. The Plant Variety Protection and Farmer's Rights Act protects farmer's traditional knowledge like right to sow, use and share farm produce.

The above mentioned legislations in IPRs offers protection to IPRs in India. As IPRs contribute very much towards the economic development of the nation,

<sup>33</sup> Section 18 Geographical Indication of Goods (Registration and Protection) Act 1999

<sup>34</sup> Latin term which means of its own kind <<https://www.merriam-webster.com/dictionary/sui%20generis>> accessed 23 October 2021

<sup>35</sup> The object of the PPV& FR Act is to ensure proper system to encourage farmers and breeders, which consists of 97 sections in total.

<sup>36</sup> Reddy (n 3) 396

<sup>37</sup> Information relating to business, technical or scientific matter which has commercial value and known only to persons in the circle and not to others. <[https://www.wto.org/english/thewto\\_e/acc\\_e/cgr\\_e/wtaccgr27a2\\_leg\\_1.pdf](https://www.wto.org/english/thewto_e/acc_e/cgr_e/wtaccgr27a2_leg_1.pdf)> accessed 21 October 2021

<sup>38</sup> Section 10 (4) (D) Patents Act

<sup>39</sup> 9(1)(b) & (c) of Trademarks Act

<sup>40</sup> Section 4 of Designs Act



it has to be properly treated. But at the same time, IPRs are confronted with various concerns relating to public health, biological diversity, research in biotechnology and human rights (NS, 2017). Some of the concerns are discussed below.

### **Human Rights and IPRs**

Human rights are available to every human being. When IPRs were granted to owners providing them economic rights excluding all others, human rights confer equal status to everyone without excluding any one and there comes a conflict between human rights and IPRs. So in that perspective, the principle of exclusivity in IPRs are being pointed out as violation of human rights which is equally available to all.

### **Genetic Research and IPRs**

Genetic research in human being is criticised on ethical principles. Only through research, the medicines for genetic and hereditary diseases can be found out. When research involves human materials like cells, genes and DNA, there arises the questions of ethics and arguments for human rights.<sup>41</sup> Embryo research<sup>42</sup> raises serious ethical concerns and various NGOs and Human Rights Forums are criticising this. Taking of tissues and materials from human body is alleged to be affecting human dignity and fundamental right under Article 21<sup>43</sup> of the Constitution.

### **Bio Piracy, Traditional Knowledge and IPRs**

Traditional communities have developed their own knowledge over many years and generations through their continuous interaction, observations and experimentations with their surrounding environment.<sup>44</sup> Companies which loot this knowledge neither ask the permission of these communities nor even share the huge profit with the community who own these knowledge (S.K.Tripathi, 2003). There are people who claim monopoly over traditional knowledge forgetting the traditional communities (C.B.Raju, 2007). Biological materials extracted from biologically rich countries are exploited for scientific and commercial sectors (Mohop, 2007). There comes the issues of bio piracy. It can be very difficult to identify the origin of traditional knowledge since the ancient knowledge cannot be traced according to present legal or political boundaries (Apte, 2006).

### **IPRs and Access to Medicine**

Right to health is an essential and integral part of right to life under Article 21 of the Indian Constitution. Right to health can be guaranteed only if all the people have equal access to medicine.<sup>45</sup> In a country like India, where the majority is struggling to attain their daily meals, affordability of medicines poses a serious human right as well as social justice question. When giant pharmaceutical companies manufacture medicines for life threatening diseases and obtain patent

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<sup>41</sup> Ibid 20

<sup>42</sup> Research is conducted using material from embryo for studying about genetic deficiencies, abnormal growth <[https://www.fertstert.org/article/S0015-0282\(19\)32482-3/fulltext](https://www.fertstert.org/article/S0015-0282(19)32482-3/fulltext)> accessed 27 October 2021

<sup>43</sup> Article 21 of the Constitution guarantees to all persons right to life and personal liberty in India.

<sup>44</sup> P.Pushpangadan and K. Narayan Nair, Value addition and Commercialisation of Bio Diversity and Associated Traditional Knowledge in the Context of the IPR Regime, *Journal of Intellectual Property Rights*, September 2005, 442

<sup>45</sup> *Bandhua Mukti Morcha v. Union of India* (AIR 1984 SC 802), *Paschim Bengal Khet Mazdoor Samity v. State of West Bengal* (AIR 1996 SC 2426)

and fix prices for the same in an exorbitant manner, the large section of the people will not be in a position to afford the medicine.

These are some of the controversies associated with IPRs. Even though there are some human rights and human dignity issues, granting of IPRs is essential for economic development as well as for encouraging more and more research.

### **Revocation of IPR- Basmati Rice Controversy**

In 1997, American based Rice Tec Inc. Company got patent from United States America Patent and Trademark Office (USPTO) for Basmati type of rice. US Patent Office granted this patent<sup>46</sup> without considering prior art<sup>47</sup> that existed in India. On March 4th, 1998 steps were taken by RFSTE (Research Foundation for Science, Technology and Ecology) by filing a petition before the Supreme Court for directing the Government for taking steps for revoking the patent. On 27th April 2000, Government of India filed petition before USPTO for re-examining the patent. CFTRI (Centre for Food Technology Research Institute of CSIR) could establish prior art of basmati rice prior to granting of patent by USPTO (Vandana Siva, 2002). Finally after strong legal battle, USPTO struck down

the patent on the ground of lack of novelty and inventive step.<sup>48</sup>

### **Turmeric Patent issue**

Two US based Indian researchers at the University of Mississippi, USA, namely Suman K Das and Hari Har P Colly got patent on wound healing properties of Turmeric (Klemm.S.Cottier, 2006). They claimed the use of turmeric also to inflammatory issues.<sup>49</sup> Patent<sup>50</sup> was objected in 1996 by CSIR as turmeric was being used in India for thousands of years for wound healing and medical use and CSIR produced documents including ancient texts. The USPTO revoked this patent also on the ground of lack of novelty.<sup>51</sup>

### **Neem Patent Controversy**

Neem is a medicinal tree and its oil is used for treatment of cold and flu and for relief from Malaria and various skin diseases (Connor, 2007). One agricultural business Corporation based in US and Department of Agriculture in US filed patent application on neem in 1995 before European Patent Office (EPO) for the method of controlling fungi on plants using extract of neem oil and the patent was granted.<sup>52</sup> This was challenged by Magda Aelvat inn 1995 for Green Group

<sup>46</sup> US Patent number 5663484 <<https://patents.google.com/patent/US5663484A/en>> accessed 27 October 2021

<sup>47</sup> It is an evidence that the invention is not new, but already known to someone. What is Prior Art? <<https://www.epo.org/learning/materials/inventors-handbook/novelty/prior-art.html#:~:text=Prior%20art%20is%20any%20evidence,very%20similar%20to%20your%20invention>> accessed 27 October 2021

<sup>48</sup> Charles Goldfinger, The story of the Basmati Rice patent battle, 20 May 2007, <<https://sciencebusiness.net/news/72228/The-story-of-the-basmati-rice-patent-battle>> accessed 28 October 2021

<sup>49</sup> Kok Peng Khor, Martin Khor, Intellectual Property, Biodiversity and Sustainable Development : Resolving the Difficult Issues (2002 edn, UK Zed Books Ltd, UK) 28

<sup>50</sup> US Patent number 5401504 <<https://patents.google.com/patent/US5401504A/en>> accessed 27 October 2021

<sup>51</sup> Barbara A Johnston & Ginger Webb, Turmeric Patent Overturned in Legal Victory, Issue 41, 11 <<https://www.herbalgram.org/resources/herbalgram/issues/41/table-of-contents/article1242>> accessed 28 October 2021

in European Parliament and Dr. Vandana Siva, on behalf of Research Foundation for Scientific, Technical and Natural Resource Policy, New Delhi along with NGOs. They submitted evidence showing that neem seeds were already in use in Ayurvedic medicines and agricultural practices in India. In May 2000, EPO revoked patent on the ground of lack of novelty and inventive step.<sup>53</sup>

## Conclusion

For the development of the mankind, intellectual properties need to be protected and the innovators and researchers are to be encouraged. But at the same time, protection of human rights is essential for civilisation. The government has to intervene where the human rights aspects are violated. For example when access to medicine is adversely affected, the government can invoke the provisions of compulsory licensing under the Patents Act to make the medicines accessible to all at affordable prices. Government can make alternative arrangements like the use of generic drugs also for resolving this issue. Regarding embryo research also, proper guidelines can be framed without affecting the human life. The major drawback of our traditional knowledge is that our knowledge systems are mostly transferred orally or even if written, mostly it is written in Sanskrit or Hindi language which could not be accessed by patent examiners from abroad. For resolving the issues, the appropriate authorities may make arrangements of translating the available traditional knowledge into English and make it available and accessible from any part of the world. Biotechnological inventions are also being challenged on

ethical grounds and changing the natural ecosystems. Genetically modified plants and animals are helpful to human beings for any industrial as well as medicinal purposes, but it is not useful for other species which depends on these.

Regarding protection of plant variety and farmers rights, there is a law, but the proper implementation is also essential for ensuring food security. Another criticism levelled against IPRs is that it is in contradiction with Competition law. The aim of Competition law is to regulate markets by curbing monopoly and IPR is a reward rather than monopoly and hence IPR is not anti-competitive. Both IPR and competition are necessary for the development of a country. As a conclusion it can be stated that intellectual property rights are essential for the development of a nation and an asset for industrial growth and public health.<sup>54</sup>

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<sup>54</sup>[https://www.google.com/search?q=proper+implementation+of+ipr++india&rlz=1C1RLNS\\_enIN721IN721&xsxr](https://www.google.com/search?q=proper+implementation+of+ipr++india&rlz=1C1RLNS_enIN721IN721&xsxr)

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# Organic Food Products: Determinants Influencing Buying Behaviour

Biju S K <sup>(1)</sup>

## *Abstract*

Organic is the order of the day. Consumers show high inclination towards organic food products now a days. In this scenario, a study to analyse the level of influence of factors affecting the buying decisions of organic food products seems to be vital. This study is aimed at identifying and analysing the influence of various factors on the purchase intention of consumers towards organic food products. This research empirically examined the determinants influencing consumers of organic food products by analysing the selection of 100 buyers from Kerala, which is the most literate state of India. Findings of the study reveal that better quality of products that provide the comprehensive wholesomeness and premium price are the most influencing determinants for purchasing organic food products.

**Key words:** Organic Food, Quality, Brand, Promotion, Price, Buying Behaviour

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## **Introduction**

The rampant degradation of environment and the resultant health issues due to unscrupulous use of pesticides and harmful methods of agriculture practices, forced the modern society in search of new arenas which culminated to go for organic food products. Today negative impacts of agricultural practices are widely criticized by eco sensitive consumers and society. In the modern society people are more eco sensitive and their attitude, perception, preferences and buying patterns tend to shift towards organic products. Beyond profit making, concerns of environmentalism is an essential factor in the marketplace these days. Consumers favor organic products and sustainable agricultural practices that share a positive future vision about the existence of the very earth. Modern society respects responsible consumers in lieu of their sustainable patterns of

consumption and lifestyles. Now, safety attributes of food, convenience, place, and hygienic manner of production, including environmental concern etc... are valued by consumers, which significantly influence their perception towards the food they consume. In the case of health attributes, even though the customers are not in a position to check it directly such attributes are crucial to them. Globalization, growing incomes, fluctuating relative prices, urbanization and migration of consumers are factors that leads to high value for agricultural products in most of the developed as well as developing countries. The modern educated consumer wants food with more nutritious values with fewer additives and they prefer natural methods of production. Such consumers may prefer to buy organic products. In relation to consumer organic purchasing behavior, the characteristics of consumer environment protection orientation and

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health orientation result in consumers adopting a solution (i.e., organic purchases) to the problem of frequent food safety incidents. Hill and Lynchehaun (2002) argued that consumers with health and environment orientations believe that organic food can improve their health, because they tend to regard organic food as being more nutritious than non-organic food. Consumption of organic food is also thought by organic consumers to form a healthier diet. Organic food is oriented towards health and environmental protection (Zanoli and Naspetti, 2002; Baker et al., 2004; Essoussi and Zahaf, 2008; Bauer et al., 2013), with the result that the organic market has experienced huge growth (Kareklas et al., 2014).

### **Review of Literature:**

As the education and income increases, people are giving more importance to health for long living. So the consumers give preference to health factor while buying food products. (Brijesh Sivathanu, 2020). Consumers perceive organic as a healthier alternative to conventional food in that they contain more nutrients. (PinoPeluso and Guido, 2013) But majority of consumers have a lack of knowledge on organic food and they will not buy unless they are educated about its real benefits. (Chryssochodis, 2000). This highlights the need to understand the conviction of buyers about the utility of organic food. In order to maintain health, consumers accept Organic food product as a nutritional food and also highlights that the short supply and premium price of organic products adversely affect the growth of its consumption rate. (Renugadevi, K. and Ramya M, 2017). In addition, the present customers are even more aware of the seriousness resulting more ecologically consciousness and desire to purchase organic products and services, favouring businesses that prefer

environmental practice. (Ibid). We can group the reasons of buying according to general and commodity – specific concerns which include food safety, human health and environmental safety whereas commodity attributes include taste, freshness, and packaging. (Yiridoe, et.al 2018). Though these are the factors the consideration of price as the first criterion that plays a significant role in buying organic products. (Schleenbecker & Hamm, 2013). The amount that consumers were willing to pay for organic foods seems to depend on few variables such as the type of food, the relative cost of a comparable conventionally produced item and the absolute price of the item. (Jones and Hiller, 2019). The consumers' behaviour consists of ideas, feelings, experiences, and actions, along with additional environmental factors like advertisement and price. (Krystallis and Chryssochodis, 2005). But Thompson and Kidwell (2018) stated that age, gender, and having a college degree just had little impact on a shopper's decision to buy organic food. In this juncture it is important to find out the factors that affect the behaviour of consumers in connection with the consumption of organic food.

### **Research Problem and Objectives**

The state of Kerala is a model to other states in India in terms of many achievements like cent percent literacy, local governance, health sector initiatives, women empowerment initiatives like Kudumbasree mission, public distribution system etc. Since the literacy rate is high, (ie 96.2% as per NSO report 2018) the consumers in Kerala are expected to be aware about the harmful consequences of using pesticides and chemicals in agricultural farms. They are expected to advocate sustainable agriculture practices naturally and prefer to consume organic food products as a necessity not just for the benefit of their generation but for

the future generations too. In Kerala, government has been adopting several steps to bring a transformation in the agriculture sector by supporting organic farming and trading of agro products. Though organic farming is theoretically perfect, practically it faces serious dilemmas. Inclination of consumers towards buying organic products is still in an infancy stage, as it needs an attitudinal change in their mindset. While buying organic food products, several factors may influence the buyer. With regard to purchase of organic food products the level of influence of various factors may be different. In this backdrop, it is relevant to analyze determinants influencing customers of organic food products both in the academic context and the business context. Hence, the present study is attempted with the following objectives.

- 1) To analyze the demographic profile of customers of organic food products.
- 2) To Identify the determinants influencing customers of organic food products.

### **Data & Methodology**

The scope of the study is to analyse the buying behaviour of consumers of organic food products in Kerala. The present study consists of a sample survey based on the customers visiting organic outlets situated in two major cities of Kerala namely Thiruvananthapuram and Thrissur during the month of December 2019. Population of the study consists

of people buying food products from organic shops in the geographical area. The Sample size was arbitrarily fixed as 100 consumers. For collecting primary data, four organic outlets were selected on a convenience basis. A survey among the respondents was conducted using a semi structured survey schedule. The data were analyzed by using descriptive tools such as percentage and mean as well as inferential tools namely binomial test and Kruskal Wallis test.

### **Results and Discussion**

This section consists of an objective wise analysis of empirical data collected from the respondents. In order to make a structured discussion, the analysis is divided into two parts. While the first part deals with the profile of respondents, the second part deals with the analysis of determinants influencing the respondents on buying organic food products.

#### **Profile of Sample Customers**

The profile of sample respondents of the study depicted in table No 1 shows that the majority of consumers are male (58%), middle aged (53%) and hails from the urban area (54%). While 79 percent of them belongs to salaried or waged class, 63 percent are graduates and 77 percent possess an income of Rs 30000 per month. While considering the most preferred item of products, customers have ranked vegetables and fruits as their top prioritized items followed by pulses & spices and cereals.

**Table 1**  
Profile of Sample Customers of Organic Food Products

S.LNo	Variable	Group	Frequency & %
1	Gender	Male	58
		Female	42
2	Area of Residence	Rural	46
		Urban	54
3	Age	Below 30	24
		30-60	53
		60 and above	23
4	Education	Less than Graduation	37
		Graduate or above	63
		Agriculturists	12
5	Occupation	Salaried employees	46
		Wage earners	33
		Entrepreneurs	09
		Less than 30000	23
6	Monthly Income (Rs)	30000-60000	37
		60000-90000	26
			14
			Rank
7	Preference of Organic food Product	Fruits &vegetables	1
		Pulses& spices	2
		Cereals	3

Source: Primary data

**Determinants Influencing Customers of Organic Food Products**

The major objective of the study is to identify and analyze the level of determinants influencing customers of organic food products. For this purpose, 20 attributes have been identified by reviewing literature and on the basis of discussion with experts in the academic and practical fields of agricultural marketing. The respondents' ratings on

the attributes selected for the study have been collected on a five-point scale and further their rating on expectations have been introduced to an exploratory factor analysis by administering 'principal component analysis' as the method of extraction and 'Varimax as the rotation' method. While identifying the factors, only the attributes which satisfied the standard minimum levels of Eigen value greater than one (Kaiser 1960) and the Factor Loading



greater than 0.4 (Hair et.al.1998) have been included. The constructs of factors derived through the factor analysis have also been found satisfied with reliability standard of Cronbach Alpha Greater than 0.7 (Nunnally 1970).The four groups of attributes derived on administering the factor analysis have been labeled as

“Product quality factor”(four attributes), “Brand popularity factor”(five attributes), “Effective Promotion factor”(two attributes) and “Price favour factor”(two attributes), which altogether explain a total variance of 74.19 per cent on the total attributes of food consumed from organic shops analysed under the study.

**Table 2**  
Results of Factor Analysis of Determinants Influencing Customers of Organic Food Products

S.LNo	Product Attributes	Factor Loading			
		Product quality	Brand Popularity	Effective Promotion	Price favour
1	Freshness	0.831			
2	Nutritious Value	0.848			
3	Taste	0.903			
4	Health protection	0.758			
5	Product Variety		0.591		
6	Product Certification		0.920		
7	Product Branding		0.914		
8	Door to door selling		0.603		
9	Availability of quantity demanded		0.516		
10	Frequency of promotion			0.881	
11	Credence of Promotion			0.983	
12	Affordable price				0.937
	Thin price difference in relation to Nonorganic items				0.932
	Cronbach Alpha	0.87	0.74	0.92	0.89
	Variance Explained (%)	24.43	16.23	17.31	16.22

Source: Compiled data

The descriptive statistics of attributes under each factor influencing the consumers of organic food products are depicted in table 3. It is imperative that, of the various attributes considered in the study the customers rate health and freshness as the dominant elements influencing with mean scores of 4.46 and 4.34 respectively. While making a factor wise comparison, the factor, ‘product

quality’ with a mean of 4.31 followed by the factor ‘price favour’ (Mean 4). Though the mean values in respect of factors ‘brand popularity’ (Mean 3.23) and ‘effective promotion’ (Mean 3.30) are found to be comparatively less, they also stand above moderate level on the rating scale. The variation in opinion is found to be comparatively more (1.03) in respect of effective promotion factor (Table 3.)

**Table 3**  
Mean Score of Factors Influencing Customers of Organic Food Products

Sl.No	Attributes	Mean			
		Product quality	Brand Popularity	Effective Promotion	Price favour
1	Freshness	4.34			
2	Nutritious Value	4.14			
3	Taste	4.30			
4	Health protection	4.46			
5	Product Variety		3.74		
6	Product Certification		2.79		
7	Product Branding		2.84		
8	Door to door selling		3.54		
9	Availability quantity demanded		3.94		
10	Frequency of promotion			3.32	
11	Credence of promotion			3.28	
12	Affordable price				4.03
13	Thin price difference in relation to Nonorganic items				3.97
Overall Mean		4.31	3.23	3.30	4.00
Overall Standard Deviation		.362	.544	.562	1.03

Further, while making a factor wise inferential analysis of level of influence of each factor identified by applying Binomial test with 0.5 as the test proportion, it is found that in respect of all the cases, the observed proportions for the group 'high expectation' are found to be above 0.5 and the same are found statistically significant except in the case of 'promotion'. Thus, it

is logical to infer that the level of customer expectation in respect of all factors, except the factor 'promotion' of organic food products explained in the study is high. In the case of the factor 'promotion' the level of customer expectation can be logically inferred at moderate level as depicted in Table 4.

**Table 4**  
Influence Level of Factors on Customer of Organic Food Products  
Results of Binomial Test

Factor	Moderate or Low Influence <= 3	High Influence > 3	p value
Product Quality	2	98	0.001*
Brand popularity	36	64	0.0218*
Price Favour	18	82	0.001*
Effective Promotion	48	52	0.434

Source: Compiled data: \* Significant at 5 % level

Further, while making an inter factor analysis of influence on customers of organic food products by applying Kruskal Wallis test, the results indicate a statistically significant factor-wise difference in the level of influence among

the customers of organic food products. As revealed from the descriptive analysis, the customers have rated high influence in respect of 'product quality' factor than other three factors identified in the study as shown in Table 5.

**Table 5**

Inter Factor Comparison of Influence – Results of Kruskal Wallis test

	Expectation
Chi-Square	162.678
Degrees of freedom	3
P value	P<0.001

Source: Compiled data

## Conclusion

The empirical study covering sample respondents having different demographic profile highlights that, vegetables and fruits are the most preferred items of organic food products in retail market. It is also notable from the study that attributes derived on administering the factor analysis labeled as 'Product quality', 'Brand popularity', 'Effective promotion' and 'Price favour' differently affect the customers' buying decision on organic food products. Of these four factors explored in the study, the quality and price proved to be the top rated influencing determinants. The high level of influence of all these four factors, except the factor 'effective promotion' on customers of organic food products, is found statistically significant. Since the study reveals the high influence of quality, brand value and price in addition to the moderate influence of promotion in consumers' buying decision, all the stakeholders of the supply chain of organic food product marketing have to perform their role effectively. This will enable the availability of quality organic food products with brand certification and at a competitive price.

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# Disturbing Non-Performing Asset (NPA) in Priority Sector and Non-Priority Sector Lending (NPSL) Between Public Sector and Private Sector Bank

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## *Abstract*

The Indian banking industry faces an enormous issue in the form of Non-Performing Assets (NPA). Though NPAs are rampant in the Indian banking industry, particularly in Indian public sector banks, it is also the main reason for their obligatory lending to the priority sector. Banks have huge scope to extend credit to both the priority and non-priority sectors as the NPAs have not yet reached such magnitude that can seriously harm the efficiency of a bank. The problem of the NPAs is of great interest to academics and policymakers. The purpose of this paper is to check whether NPAs in Indian commercial banking has reached a critical stage.

**Key words:** Priority Sector Lending (PSL), Non Priority Sector Lending (NPSL), Non-Performing Asset (NPA)

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## **Introduction**

Priority Sector Lending is a target based loan scheme for the upliftment and improvement of the living standards of the backward class of the country. (Goyal et al., 2016). Reserve Bank of India introduced a new lending scheme for focusing special priority to weaker sections, agriculture, small scale industries, and others are called Priority Sector lending. The loan scheme is mainly focused on Agriculture, Micro and Small Enterprises, Export credit, social infrastructure, Renewable Energy, Education Loans, Housing Loans, and Others, PSL (Priority Sector Lending) target is 40% of Adjusted Net Bank Credit (ANBC) or Credit Equivalent Amount of Off-Balance Sheet Exposure (CEOBE), whichever is higher (Master Directions – Priority Sector Lending (PSL) – Targets

and Classification, 2021). Sector-wise lending is mainly divided into two, one is Priority sector lending and the other is Non-Priority Sector lending. (Desai, 2019). Non-Priority Sector lending refers to loans that do not fall within the scope of the Priority Sector. The RBI does not specify a specific loan target for non-priority sector lending (Ranjan Mohapatra & Gaur, 2019). NPA refers to loan arrears due to non-repayment of loans made by banks and delays in payment after a certain period. (Boyd and De Nicolo, 2005). The NPA is the biggest problem facing banks. It has adversely affected both the Priority Sector and the Non-priority Sector. (Rinaldi and Sanchis-Arellano, 2006). This study moreover examines the extent to which NPAs are concerned in priority sector lending and non-priority sector lending.

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## Review of Literature

Ahmed (2010) in an article on "Priority Sector Lending By Commercial Banks in India: A Case of Barak Valley" revealed that that significant aim of need area progresses was to have a legitimate and satisfactory help to denied area of the economy which was disregarded and didn't get legitimate help. This was further additionally benefited for the accomplishment of financial urgencies of government like the development of minuscule and limited scope enterprises, horticulture, and progress of in the reverse region and so forth Little and Micro venture was in every case shy of credit and request and further banks couldn't accomplish the given objective of PSL. Creators have considered auxiliary information from the Central Bank and Lead bank office of the review region. Creators have tried the degree of acknowledging channelization for connection grid investigation while straight development rate and build development rate examination have been utilized to survey the development of bank credit nearby under study. The study reasoned that negligence of horticulture, contracting portion of genuine need area, falling number of records across the various classifications of need area, advance recuperation component and so on are a portion of the significant issues which need quick consideration of the arrangement producers.

Arabi.U(2007) Keeping in view the alternative sources of finance and its role in economic development in India, the study aims at evaluating bank credit role and how it is channelled to the different sectors in India. The author has made an attempt to understand the effective performance of credit delivered to different development sectors. The paper also deliberated the analysis on the bank credit to the various sectors like agriculture, SSI, micro finance, housing finance, infrastructure lending,

Government. Finally the author concludes in their findings the need to further liberalise the interest rate structures to ensure efficiency in financing the credit to core sectors

Arora and Kanwar (2018) have analysed how the performance of commercial banks is getting impacted by NPAs, taking overall technical efficiency as the indicator of performance. The study concludes that bad loans of commercial banks have not reached a panic level where they can negatively affect the technical efficiency of banks. Thus, public sector banks, in particular, can continue lending to the priority sector, even though their NPAs in this sector are rising

Kesavan (2016) in their review named "A Study on the Non-Performing Assets of Banks in India" expressed that among all capacities, one of the significant obligations of the banks is progressing to different significant areas like lodging, agribusiness, and industry, yet lately banks are hesitant in loaning. Scientists revealed that preceding 31st March 2004 NPA for example Non-Performing Asset was named as in which interest or chief have stayed exceptional for explicit period, which was four quarters. Exploration concentrate on abs endeavor to cover NPAs of banks in India with the most noteworthy NPA and furthermore featuring the causes, factors influencing NPA depends on the applied foundation. Study inferred that a significant degree of NPA is a helpless pointer of bank execution and development in NPA hauls the benefit as arrangements must be done which impacts the benefit and over all investors esteem. Cautious strides by brokers like the choice of right borrowers, suitable financial action and checking precise end utilization of reserves, and ideal recuperation of credits are exceptionally fundamental and pre conditions for forestalling or dropping the event of new

NPAs which will additionally help in upgrading the dependability of the banks and accomplish the reason for the sound monetary construction for its reality

Naastepad (2001) in his study, has tried to analyse the impact of selective lending in India at the macroeconomic level. The study shows that a decrease in priority sector lending has spill over impact for non-priority sectors and government, and causes stagflation to rise in the economy. Thus, there will be a significant negative effect of reduction in directed credit over GDP growth. Emphasizing the significance of rural credit for magnifying the productivity of rural India

Rana (2016) in study on "Analysis of Non-Performing Assets of Public Sector Banks in India" emphasized that Non-performing Asset has become an important parameter in the analysis of financial performance of a bank and the problem of raising NPAs is mounting day by day affecting the profitability. According to author it is necessary to prevent NPAs so that financial health in the banking system can be improved. Paper is an attempt to understand the meaning, status and its trends of NPA in Indian public banks. For the purpose of analysis NPA's are further categorized and studied with respect to loan advances to priority and non-priority sectors. Analyzing the data for the period 2004-2014, study concludes that NPA's are continuously raising in the public sector banks in India and the amount and share of NPA of both banks in priority as well as non-priority sector are continuously increasing.

Ranjan and Dhal (2003) state that there isn't a significant difference in the proportion of total NPAs coming from Priority Sector and that of non-priority sector. Thus, banks should consider the financial and economic performance of the prospective borrowers before disbursal of loans. Also, exposure of banks' lending to

the priority sector is only as significant as terms of lending variables and credit culture, if not less.

Seema and Jyoti (2015) contributed an article on "A study on priority sector lending and its targets in India" with a goal to comprehend the method engaged with need area propels for borrowers for chose banks and to gain proficiency with the patterns of need area progresses by business banks for different classes and subclasses of recipients. Exploration work features different sorts of loaning under need area loaning and guidelines for the equivalent alongside sum dispensed for the area for the period 2007-2014. The investigation of the auxiliary information gathered from different sources recommends that there is a steady expansion in the credit hole and sort of appropriation, however, the development has been seen in this area. Creators prescribed that the loaning of PSL be created in such a way that the credit compasses to the end clients and the ideal segment of society and further the quantum of credit ought to likewise be satisfactory. To accomplish this, it is significant (a) to have a component to boost banks to meet these objectives (b) to have a periodical audit and up a degree of PSL targets and its casing work.

Sukhdev Singh (2006): The author had suggested the alternative measures for improvement in the banking industry. The study evaluated the performance of banks against benchmark and ratio analysis was employed as the tools. The analysis of the NPA observed the decline in post liberalisation period. The study insisted that the ideal level benchmark is less than 1 percent, the segments curtail the growth rate of NPAs and followed certain policy like counterparts who had not only arrested the NPA but reduced them

Uday S Bose (2005). The growing NPA and its implications on the banking system need no emphasis. While there have been



several schemes in the past to facilitate the recovery from NPAs, the success of such efforts in terms of NPA reduction has been far from satisfactory. SARFAESI Act greatly helps bank in their effort to reduce recovers money from NPAs. Attempts to provide a glimpse of the Act against this backdrop.

**Research Gap**

A review of the previous study report has revealed that studies have shown that banks have been able to achieve the annual PSL target and sub-target. There are very few studies that analyze between NPA and PSL. NPAs based on PSL and NPSL could not be found .Therefore, this study is conducted on the basis of this area.

**Statement of the Problem**

The NPA is the biggest problem facing Indian banks (Ranjan and Dhal 2003). For the economic growth of India, the NPA of banks is changing adversely (Sukhdev Singh 2006). It can be seen that the level

of NPA in sectoral lending is increasing every year(Goyal et al., 2016). The extent to which NPAs lend to banks and the fact that NPAs are a major problem in lending by private sector banks and public sector banks( Boyd and De Nicolo,2005)..

**Objectives**

1. Analyze how much NPA is alarming on loans by private sector banks and public sector banks.
2. Examine the NPA in the ground of Priority sector and Public sector lending

**Scope of the Study**

The main focus of the study is on how much NPA is generated in sector wise lending. Through this study we will be able to understand the NPA of the lenders as well as whether the public sector bank or the private sector bank has the highest NPA, by analyzing the banks and exploring solutions.

**Table 1**  
Percentage of NPA in Priority Sector Lending

SECTOR WISE	BANK	2016-17 PSL-NPA	2017-18 PSL-NPA	2018-19 PSL-NPA	2019-2020 PSL-NPA	2020-2021 PSL-NPA
PUBLIC SECTOR	SBI	6.32	10.21	8.72	10.74	9.37
	CANARA BANK	5.53	6.79	5.97	8.67	8.96
	BANK OF BARODA	11.89	9.98	8.44	9.27	8.6
	CENTRAL BANK OF INDIA	10.09	9.45	11.64	7.34	7.04
	PNB	9.88	12.71	13.96	16.96	18.76
PUBLIC SECTOR	HDFC	1.5	2.28	2.13	2.22	2.1
	ICICI	2.16	2.21	1.94	2.28	3.42
	AXIS BANK	2.26	3.07	2.92	2.89	2.98
	FEDERAL BANK	4.47	5.06	5.74	6.4	4.13
	DHANALEKSHMI BANK	3.41	6.82	7.02	7.45	10.33

Source: Annual Report of Bank from 2016 to 2021



Table 1 indicates Percentage of Non-Performing Asset in Priority sector Lending of financial from year 2016-2017 to 2020-2021, from the five banks in each Public sector and Private Sector Bank.

**Methodology**

This study is based on second data. Data is collected on the basis of Banks Annual Report. Total ten banks have

been selected. Five banks are from the public sector and five banks are from the private sector. SBI, Canara Bank, Bank of Baroda, Central Bank of India and Punjab National Bank from Public Sector Bank .But HDFC, ICICI AXIS Bank, Federal Bank and Dhanalekshmi Bank are selected from private sector banks .Data collected from Annual Report from 2016 to 2021.

**Table 2**  
Percentage of NPA in Non- Priority Sector Lending

SECTOR WISE	BANK	2016-17 NPSL-NPA	2017-18 NPSL-NPA	2018-19 NPSL-NPA	2019-2020 NPSL-NPA	2020-2021 NPSL-NPA
PUBLIC SECTOR	SBI	7.06	11.11	7.15	4.79	3.62
	CANARA BANK	12.99	16.2	11.88	8.21	8.9
	BANK OF BARODA	11.64	15.64	9.61	7.03	12.96
	CENTRAL BANK OF INDIA	32.24	32.02	26.82	22.69	19.02
	PNB	13.74	21.44	16.32	14.21	14.12
PRIVATE SECTOR	HDFC	0.85	0.92	1.06	0.92	1.08
	ICICI	10.64	11.53	9.46	7.54	6.05
	AXIS BANK	6.18	7.84	6.05	5.05	3.54
	FEDERAL BANK	1.51	2.18	1.84	1.66	3.14
	DHANALEKSHMI BANK	5.77	7.78	7.79	4.85	8.49

Source: Annual Report of Bank from 2016 to 2021

Table 2 indicates Percentage of Non-Performing Asset in Non -Priority sector lending of financial from year 2016-2017 to 2020-2021, from the five banks in each Public sector and Private Sector Bank.

**Table 3**  
NPA In Priority Sector Lending –CGRA (From 2016-2021)

PUBLIC SECTOR BANK	CGRA	PRIVATE SECTOR BANK	CGRA
SBI	10.35%	HDFC	8.78%
CANARA BANK	12.82%	ICICI	12.17%
BANK OF BARODA	-7.78%	AXIS BANK	7.16%
CENTRAL BANK OF INDIA	-8.61%	FEDERAL BANK	-1.96%
PNB	17.39%	DHANALEKSHMI BANK	31.93%
	TCGRA		TCGRA
	24.17%		58.08%
	WCGRA		WCGRA
	4.83%		11.62%

Source: Author’s calculation

**Figure 1 :** NPA in Priority Sector Lending –CGRA (from 2016-2021)

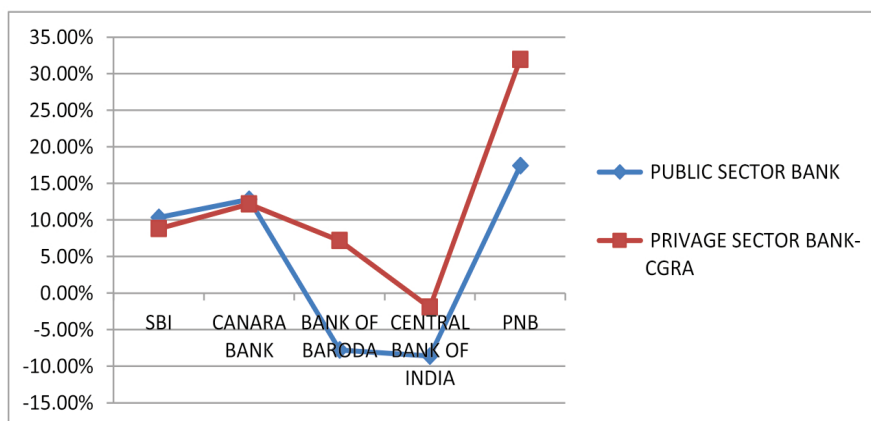


Table: 3 and Figure: 1 represent Compound Growth Rate Average (CGPA) of Non-Performing Asset in Priority Sector Lending from the financial year 2016-17 to 2020-21. Punjab National Bank Percentage of CGRA -NPA is higher than all other public sector Bank. Central Bank of India CGPRA-NPA is lower than all

other Public sector Bank. Dhanalakshmi Bank Percentage of CGRA -NPA is higher than all other private sector Bank. Federal Bank CGPRA-NPA is lower than all other Private sector Bank. On the basis of Sector-wise Bank, Private sector Bank NPA of Priority sector lending is higher than public sector bank.

**Table 4**

NPA In Non- Priority Sector Lending - CGRA (From 2016-2021)

PUBLIC SECTOR BANK	CGRA	PRIVATE SECTOR BANK	CGRA
SBI	-15.38%	HDFC	6.17%
CANARA BANK	-9.02%	ICICI	-13.16%
BANK OF BARODA	2.72%	AXIS BANK	-13.00%
CENTRAL BANK OF INDIA	-12.36%	FEDERAL BANK	20.08%
PNB	0.68%	DHANALEKSHMI BANK	10.14%
	TCGRA		TCGRA
	-33.35%		10.23%
	WCGRA		WCGRA
	-6.67%		2.05%

Source: Author’s calculation

**Figure 2 : NPA in Non- Priority Sector Lending-CGRA (From 2016-2021)**

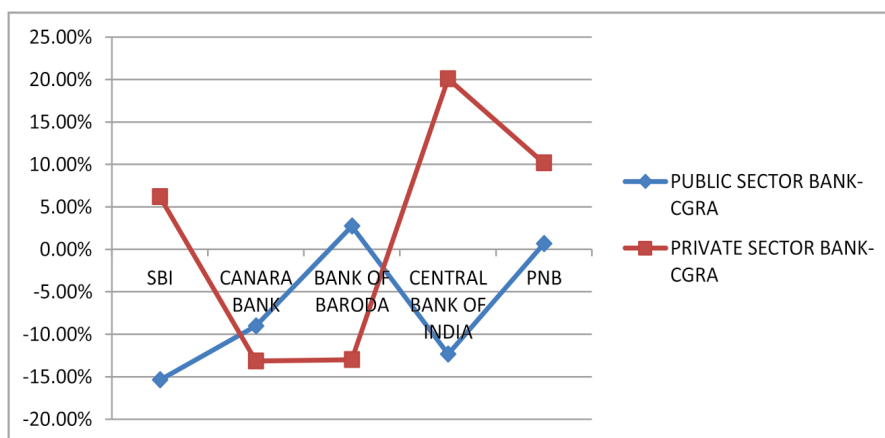


Table 4 and Figure 2 represent Compound Growth Rate Average (CGRA) of Non-Performing Asset in Non-Priority Sector Lending from the financial year 2016-17 to 2020-21. Bank of Baroda Percentage of CGRA -NPA is higher than all other public sector Bank. State Bank of India CGPRA-NPA is lower than all

other Public sector Bank. Federal Bank Percentage of CGRA -NPA is higher than all other private sector Bank. ICICI Bank CGPRA-NPA is lower than all other Private sector Bank. On the basis of Sector-wise Bank, Private sector Bank NPA of Non-Priority sector lending is higher than public sector bank.

**Table 5**

**NPA in Priority and Non- Priority Sector Lending-CGRA (From 2016-2021)**

SECTOR WISE	BANK	PSL	NPSL
PUBLIC SECTOR	SBI	10.35%	-15.38%
	CANARA BANK	12.82%	-9.02%
	BANK OF BARODA	-7.78%	2.72%
	CENTRAL BANK OF INDIA	-8.61%	-12.36%
	PNB	17.39%	0.68%
PRIVATE SECTOR	HDFC	8.78%	6.17%
	ICICI	12.17%	-13.16%
	AXIS BANK	7.16%	-13.00%
	FEDERAL BANK	-1.96%	20.08%
	DHANALEKSHMI BANK	31.93%	10.14%
	TCGRA	82.25%	-23.13%
	WCGRA	8.23%	-2.31%

Source: Author's calculation

**Figure 3 : NPA in Priority and Non- Priority Sector Lending- CGRA (From 2016-2021)**

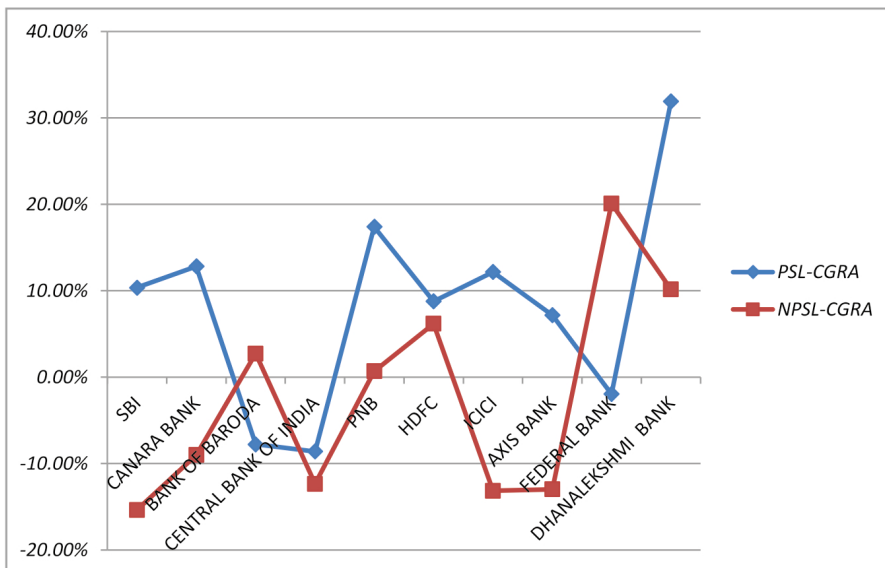


Table 5 and Figure 3 represent Compound Growth Rare Average (CGPA) of Non-Performing Asset in Priority and Non-Priority Sector Lending from the financial year 2016-17 to 2020-21. On the basis of Priority sector lending, Dhanalakshmi Bank Percentage of CGRA -NPA is higher than all other public and Private sector Bank. Central Bank of India CGPRA-NPA is lower than all other Public and Private sector Bank. On the basis of Non Priority sector lending Federal Bank Percentage of CGRA -NPA is higher than all other private and Public sector Bank. State Bank of India CGPRA-NPA is lower than all other Private and public sector Bank. On the basis of Sector wise lending, Priority sector lending, growth rate of NPA is higher than Non Priority Sector Lending.

**Major Findings**

1. NPA Growth rate of Priority Sector Lending, Private Sector bank is higher than Public sector banks.
2. NPA Growth rate of Non Priority Sector Lending, Private Sector bank is

- higher than Public sector banks.
3. Growth rate of Priority Sector Lending, Punjab National Bank (PNB) is higher than that of other Public Sector Banks
4. Growth rate of NPA in Priority Sector Lending, Central Bank of India is lower than that of other Public Sector Banks
5. Growth rate of Priority Sector Lending, Federal Bank is higher than that of other Private Sector Banks
6. Growth rate of NPA in Priority Sector Lending, ICICI Bank is lower than that of other Private Sector Banks
7. Growth rate of Non Priority Sector Lending, Bank of Baroda is higher than that of other Public Sector Banks
8. Growth rate of NPA in Non-Priority Sector Lending, State Bank of India is lower than that of other Public Sector Banks
9. Growth rate of Non-Priority Sector Lending, Federal Bank is higher than that of other Private Sector Banks

10. Growth rate of NPA in Priority Sector Lending, ICICI Bank is lower than that of other Private Sector Banks

### Recommendations

1. RBI should setup special monitoring cell for watching priority sector lending.
2. Constitute Bank-wise service cell for evaluating sector lending.
3. RBI, should start a special initiative to implement District wise Lead bank in Priority sector lending.
4. Setup bank-wise advisory body including local self-government.
5. Bank-wise effectively monitor after service related with Priority sector lending.

### Conclusion

Banks provide loans to meet the target set by the RBI, but the NPA is a major problem. From this study it can be seen that even though banks provide loans to a certain extent, the rate of NPA is increasing uncontrollably. If this situation continues, the banking sector will have very bad consequences in the days to come. If the RBI sets up a special cell to monitor the implementation of the schemes required for its regulation and its proper implementation in the banks and the committees required to regulate it are set up at the bank level to control this, the consequences of the NPA can be controlled to a degree. RBI will set up a special cell to monitor this properly.

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# A Study on the Effectiveness of Training Programmes in the Promotion of Inland Fisheries in Kerala

Anitha. S<sup>(1)</sup> Manikantan. G<sup>(2)</sup>

## *Abstract*

The yield from marine capture fisheries is showing a declining trend year after year. Therefore, the Inland fisheries have to play an important role in providing rich food for poor people. The expansion of inland fish production will depend upon many factors like development of necessary infrastructure and marketing facilities and easy availability of required inputs. But the most important factor is the need for a system of information transfer from the research and development centres to the farming households. A gap exists between the plans and projects of concerned authorities and the implementation of these by the farmers in the production and marketing practices. This problem can be solved to a great extent, by arranging training programmes to the farmers. But the studies for measuring the effectiveness of training programmes are very few in number. Here, this study propose to analyse the effectiveness of training programmes in the adoption of production and marketing practices of fresh water and brackish water farmers in Kerala. The results of the study reveals that effectiveness of training programmes is more in brackishwater farmers and recommends to the authorities that special efforts should be taken to strengthen its effectiveness in fresh water farming.

**Keywords:** Inland Fisheries, Fisheries training programmes, Marketing Practices, Production Practices

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Aquaculture extension is an important link connecting research systems and farmers. It is an instrument to bring about social and technological change by playing the dual role of disseminating technology to the farmers in the field and conveying back their problems to the research system. Sustainable fisheries should be rich in technology and information with less intensive energy uses. The success of any extension activity depends on two processes, diffusion and adoption. The diffusion process refers to the spread of new ideas from the original source to the ultimate users. In the case of aquaculture, it

is the process by which new farm practices or innovations are communicated from sources of origin. Certain guidelines should be prepared and communicated for implementation to ensure sustainable utilization and management of inland fisheries resources. The adoption process is a mental process through which an individual passes from first hearing about a new idea to its final adoption. There are five stages in the adoption process like awareness stage, interest stage, evaluation stage, trial stage and adoption stage. In the awareness stage, a farmers gets information about a new method. In

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the second stage he becomes interested in that method due to any of its advantage. Then he evaluates all its aspects and tries to make a trial. When he becomes satisfied with the results, he enters the adoption stage. There should be efficient training programmes for the smooth fulfillment of these processes.

### Literature Review

1. Srivastava,UK (1999) in the study 'Fresh water aquaculture in India' made an attempt to evaluate the functions of Fish Farmers Development Agency and found that majority of the farmers are still unaware of sophisticated production methods.
2. Sultan (2000) in his study made an attempt to study the impact of the programmes of FFDA's and opined that the agency is not doing well in the marketing of fisheries products.
3. Daisy C Kappen (2006) in her study revealed that majority of the fresh water and brackish water farmers have only medium level knowledge about production practices.
4. Vinayagram (2017) in his study reports that extension activity should be strengthened to reduce environmental pollution.

The literature reviewed for the study shows that training programmes are important for attaining the targets in the production and marketing of inland fisheries products. Majority of the farmers have a medium level of knowledge about sophisticated techniques and methods and the training programs need to be strengthened for promoting sustainable farming practices.

### Statement of the Problem

Kerala is rich in inland water resources. It has fresh water resources like private

ponds, panchayat ponds, quarry ponds, holy ponds, irrigation tanks, private sector fresh water farms, public sector fresh water farms, fresh water springs, fresh water lakes, water falls, rivers, reservoirs, check dams and bunds. Its brackish water resources include backwaters, prawn filtration fields, public and private sector brackish water farms, estuaries and mangrove area. Seven percent of the total inland water resources is in Kerala. But the contribution of the inland fisheries production is only 24 per cent of the total fish production as against the national contribution of 71 per cent (Economic Review, 2019). The reason is lack of awareness and implementation of farmers about modern practices of inland fisheries production and marketing. Only through providing adequate training programmes, this problem can be solved.

### Significance of the Study

Literature Review recommends the need for strengthening the inland fisheries extension programmes by providing new information, technology transfer and research and development in the aquaculture sector. Therefore, the government of Kerala, through the Department of Fisheries and allied institutions has taken steps for increasing inland fish production stage by stage. In all Five year plans, the allocation for inland fisheries sector shows an increasing trend and a large number of diversified schemes and projects are organized for ensuring the adequate extension programmes. A significant amount of extension work is being carried out in the form of training programmes to farmers. Therefore, it is very essential to analyse to what extent these training programmes contribute towards application of modern and scientific production, harvesting and marketing practices.



### Methodology

The primary data were collected from 150 freshwater farmers from the district of Palaghat and 150 brackishwater farmers from the district of Kollam randomly selected using simple random sampling technique from the register of Matsyasaamrudhi project of Department of Fisheries using a structured interview schedule. ANOVA is used for studying the level of influence of training programmes in the application of production and marketing practices both in fresh water and brackish water resources. The secondary data were collected from the Fisheries Global Information System (FIGIS) of FAO, publications of the Department of Animal Husbandry and Dairying, National Fisheries Development Board, Department of Fisheries, Government of Kerala and State Planning Board.

### Objectives of the study

The main objective of the study is to find out the effectiveness of training programmes in the application of sustainable production and marketing practices in fresh water and brackish water resources.

### Results and Discussions

*Effectiveness of Training programmes in the application of production practices*

Inland fishermen have to follow a systematic method while locating the site, preparing the pond, determining the type of culture, preparation of project report etc. They have to obtain right quantity and quality of seed, feed, fertilizers, etc. They should find out qualified personnel. Above all they should be aware about the cheap and reliable sources of finance also. Lack of knowledge about all these factors may be the reason which drag young people from the idea of starting aquaculture. The plans and projects of concerned authorities should be timely communicated to the farmers. This is possible through organizing training programmes. Therefore, the Department of Fisheries and its allied agencies are organizing a number of training programmes for attracting more and more people towards this field by rendering them necessary help in each and every stage of farming

Here an attempt is made to evaluate the effectiveness of Training programmes in the production of aquaculture products. The level of influence of training programmes on 15 activities connected with production for fresh and brackish water farmers is analysed and the result is shown in the form of mean.

**Table 1**

Effectiveness of training programmes in the application of production practices

Particulars	Type of Water body	N	Mean	T value	Significance
Participating training	Brackish water	210	4.7381	17.87	0.000
	Fresh water	140	3.4857		
Survey of pond	Brackish water	210	3.8714	4.512	0.000
	Fresh water	140	3.3000		
Type of culture	Brackish water	210	3.4190	5.838	0.000
	Fresh water	140	2.6857		

Project preparation	Brackish water	210	3.2190	3.952	0.000
	Fresh water	140	2.7643		
Pond preparation	Brackish water	210	3.2524	12.765	0.000
	Fresh water	140	1.9929		
Anti -weeding	Brackish water	210	3.2143	-7.613	0.000
	Fresh water	140	4.0000		
Supply of seeds	Brackish water	210	4.5095	21.907	0.000
	Fresh water	140	2.5357		
Supply of feeds	Brackish water	210	2.3476	21.992	0.000
	Fresh water	140	1.2071		
Supply of manure	Brackish water	210	1.9571	-974	0.000
	Fresh water	140	2.0000		
Management of diseases	Brackish water	210	2.5238	-9.121	0.000
	Fresh water	140	3.4071		
Supply of finance	Brackish water	210	1.2810	3.017	0.000
	Fresh water	140	1.1500		
Periodic assessment	Brackish water	210	1.9810	-2.784	0.000
	Fresh water	140	2.1500		
Regulations for sustainable growth	Brackish water	210	3.0524	-1.650	0.000
	Fresh water	140	3.1786		
Fish farmers clubs	Brackish water	210	3.8857	.788	0.000
	Fresh water	140	3.8571		
Insurance coverage	Brackish water	210	2.1095	-2.381	0.000
	Fresh water	140	2.3286		

Source :Compiled through research

The table 1 shows that the training programmes are more effective in brackish water (higher Mean score value) than that of fresh water in motivating farmers to attend the training . Mean score value shows that in surveying pond, determining type of culture, preparing project report etc, training has more influence in brackish water. Training helps brackish water farmers to prepare the pond, for collection of seed, feed, fertilizer, finance etc to a level better than fresh water farmers. The brackish water

farmers are more benefitted out of training programmes through the regulations. They check periodically the growth and mass of products. Training equips them in organizing fish farmers clubs and for getting their products insured.

In the activities connected with production like supply of manures, management of diseases, periodic assessment of growth etc ,the influence of training is more effective in fresh water (higher mean score value). The t values are satisfactory in all the cases and p values <0.05.

*Effectiveness of Training Programmes in the application of harvesting and marketing practices*

Just like production practices, scientific methods and techniques should be used for harvesting to improve the volume of output. Cropping or harvesting of fish pond is undertaken when the fish stock or part of it has attained market size. The market size is determined by customer acceptance or preference. Generally majority of fish species are harvested by 6 to 9 months. 75 to 100 kilograms of fish can be harvested from 500 square meter pond. It is better to advertise 3 or 5 days before harvest in identified markets. In order to reduce loss, steps should be taken to make maximum sales at farm itself. Fish should be sorted based on species or size. Before fixing price, the total cost and local prices should be considered. Proper records should be maintained for recording pond details, stock details, feed details, harvest details, credit information, sales details etc. The farmers have to select a suitable harvesting method which is economical in terms of output and quality. Effective handling is another area where maximum

care should be given. There are chances of different type of losses in connection with defective handling. After sorting the products based on type, size, quality etc, steps should be taken for the preservation of products. Generally the farmers use icing and smoking for the preservation. Lack of transportation and preservation facilities and due to low demand, farmers may prepare value added products like fish pickles, dry fish etc. Utmost care should be given for the package of the product. In all these areas, improved practices are developed by extension agencies. They organize training programmes for imparting knowledge to farmers in all these aspects.

Here an attempt is made to see the effectiveness of these training programmes on the harvesting and marketing practices of the sample respondents. For this purpose, 14 harvesting and marketing practices are selected and the effectiveness of training practices on each and every practice is analysed in both fresh and brackish water and the result is shown in the form of mean and standard deviation.

**Table 2**  
Effectiveness of Training Programmes in the application of Harvesting and Marketing practices

Harvesting and marketing practices	Type of water body	Mean	Standard Deviation	t value	Sig.
Preparation of harvest schedule	Brackish water	3.5667	1.28957	13.974	.000
	Fresh water	2.1714	.053567		
Selection of method of harvesting	Brackish water	3.0714	1.12800	5.339	.000
	Fresh water	2.5000	.86914		
Preservation of products	Brackish water	2.3429	.61603	3.858	.000
	Fresh water	2.1429	.35118		
Preparation of value added products	Brackish water	1.4381	.60181	2.169	.031
	Fresh water	1.2857	.70237		

Canning and packing	Brackish water	3.1333	.99344	10.496	.000
	Fresh water	2.0214	.95562		
Determining prices	Brackish water	2.9429	.98144	2.249	.025
	Fresh water	3.1786	.94654		
Controlling middlemen	Brackish water	2.1429	.78781	2.969	.003
	Fresh water	2.4000	.80287		
Promoting export trade	Brackish water	3.6905	.66664	6.229	.000
	Fresh water	3.1786	.86721		
Organising demonstrations and exhibitions	Brackish water	4.0048	.75456	8.169	.000
	Fresh water	3.2929	.86079		
Selecting channels of distribution	Brackish water	2.2000	9.6741	4.620	.000
	Fresh water	1.6214	1.3753		
Providing transportation facility	Brackish water	1.5667	.63233	2.401	.017
	Fresh water	1.4214	.49556		
Providing cold storage facility	Brackish water	1.7048	.45724	3.126	.002
	Fresh water	1.5429	.49995		
Checking weight and quality of products	Brackish water	2.0000	.0000	11.798	.000
	Fresh water	1.6000	.49166		

Source: Compiled through research

The table 2 shows that training programme shave more influence in brackish water aquaculture in adoption of the practices like preparation of harvest schedule, selection of method of harvesting, preservation of products, preparation of value added products, canning and packing, promoting export trade, organizing demonstrations and exhibitions, selecting channels of distribution, providing cold storage facility, providing transportation facility and checking weight and quality of products ( higher mean score ). The p value shows that the variations in all the cases is significant also. The influence of training programmes is a little high in fresh water aquaculture (higher mean score ) in practices like price determination and

control of middlemen.

### Conclusion

The main objective of the study titled A Study On The Effectiveness of Training Programmes in the Promotion of Inland Fisheries in Kerala is to find out the effectiveness of training programmes in the application of sustainable production and marketing practices in fresh water and brackish water resources. In order to assess the effectiveness of training programmes on the production practices, 15 production practices are listed. The primary data were collected from 150 freshwater farmers from district of Palaghat and 150 brackishwater farmers from district of Kollam randomly selected

using simple random sampling technique from the register of Matsyasaamrudhi project of Department of Fisheries using a structured interview schedule. ANOVA is used for studying the level of influence of training programmes in the application of production and marketing practices both in fresh water and brackish water resources.

The study reveals that in production practices like in surveying pond, determining type of culture, preparing project report etc, training has more influence in brackish water. Training helps brackish water farmers to prepare the pond, for collection of seed, feed, fertilizer, finance etc to a level better than fresh water farmers. The brackish water farmers are more benefitted out of training programmes through the regulations. They check periodically the growth and mass of products. Training equips them in organizing fish farmers clubs and for getting their products insured.

14 harvesting and marketing practices are selected and the effectiveness of training practices on each and every practice is analysed in both fresh and brackish water and the result shows that training programmes have more influence in brackish water aquaculture in the adoption of practices like preparation of harvest schedule, selection of method of harvesting, preservation of products, preparation of value added products,

canning and packing, promoting export trade, organizing demonstrations and exhibitions, selecting channels of distribution, providing cold storage facility, providing transportation facility and checking weight and quality of products. The influence of training programmes is a little high in fresh water aquaculture in practices like price determination and control of middlemen.

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# Multi-Layer Analysis on Constraints of Budding Women Investors in Share Trading: A Comparative Study of Women Investors Pertaining to Professional and Non-Professional Fields

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## *Abstract*

As half the population of the world is constituted by women, their role in economic development is something inevitable. Though they have marked their progress and valuable contributions in all walks of life, their presence in stock market is very much limited. Past researches show that there is a wide gender gap in share trading especially in a developing nation like India. The root cause is that, women undoubtedly face various constraints related to share trading. Therefore, it is imperative to study the influence of these constraints faced by women in share trading, on the resultant outcomes and find possible solutions to it, to improve women participation in this arena. The major intention of the present study is to identify the extent of influence the constraints are causing on the outcomes or the results, and to identify whether there is any difference in its impact on women investors from professional and non-professional working backgrounds in share trading using multi-layer analysis. Primary data was collected using a structured questionnaire which was distributed among women investors in the district of Ernakulam, who are having professional work background as well as non-professional work background. The study concludes on the note that the constraints influence the outcomes or results significantly, and the most affected are the women investors with non-professional work background. The study offers possible solutions to overcome the issues.

**Keywords:** Women investors, Share trading, Multi-layer analysis, Constraints.

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## **Introduction:**

In order to enhance the economic development of a nation, women's role and contribution is inevitable. Their participation in the arenas of commerce and finance has gradually advanced over these years especially in equity markets.

Despite this fact, the number of women investors in the country is nowhere near to that of men investors. The brokerage concern Sharekhan's director, Shankar Vailaya, proclaimed that out of the active traders in the country, the women investors constitute around 20% (Bhatt,

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S., 2021). According to the reports of the Upstox (a reputed brokerage house), there have been a 32% growth in share-trading account openings by women investors from the time period of April to June in the year 2020 in contrast to the previous months and out of which almost 70% of them are recognized to be first time in this domain (Oberoi, R.,2020). But unfortunately, it is noted that, in spite of the fact that in this era, women can be spotted in all walks of life, such a huge gap is witnessed between the proportion of women investors and men investors in share trading which is pointing fingers at gender equality in a country like India (Bucher-Koenen, et.al.,2021). Why is this happening? This paper intends to answer this question and suggest possible solutions.

### **Significance of the Study**

It is an undoubtful fact that, women have produced a lot of advancements in almost all spheres of life. But their presence is not much evident as that of men in stock market as they face so many constraints compared to men (Bucher-Koenen.et.al.,2021). If these constraints are identified and solved, it not only instills confidence in the budding women investors, but also aids the potential women investors to come out of their cocoons and fly high.

### **Objective of the Study**

To ascertain the relationship of the constraints faced by women investors in share trading who are engaged in professional areas of work and non-professional areas of work, with the outcomes resulting from such constraints.

### **Hypothesis of the Study**

HO: There is no linear relationship between the constraints of women investors with the outcome which are the resultant problems faced by them.

### **Research Methodology**

For the present study data was collected from 50 women investors who are having a professional work background pertaining to Info Park, Ernakulam and 50 women investors from non-professional work background that is, in Government services and private sectors in the district, using structured questionnaire designed using google form. The sampling technique relied was convenient sampling on the assumption that a fairly larger sample will automatically reflect the peculiar feature of the population. In the present study a total of 100 respondents were selected with an assumption that it will ascertain the relationship of the constraints faced by women investors in share trading who are engaged in professional areas of work and non-professional areas of work, with the outcomes resulting from such constraints. The employees were identified and selected from the personal contact and contact with the peer group members. The data collected was analyzed using Multi-Layer analysis. Multilayer perceptron is often applied to supervised learning problems: they train on a set of input-output pairs and learn to model the correlation (or dependencies) between those inputs and outputs. The Multilayer Perceptron (MLP) procedure produces a predictive model for one or more dependent (target) variables based on the values of the predictor variables.



**Results and Discussion**

**Table 1**  
Network Information

		1	Category
Input Layer	Factors	1	Inadequate financial support
		2	Lack of knowledge in online trading
		3	Less time to devote in online trading
		4	Poor internet connection
		5	Lack of confidence
		6	Socially influenced decision making
	Covariates	7	Lack of proper technology
		8	Lack of professional management
		9	Lack of advices from brokers
		10	Security issues
		11	Lack of share market knowledge
		12	Non-familiarity with the website design
Hidden Layer(s)	Number of Units <sup>a</sup>	14	
	Rescaling Method for Covariates		Standardized
	Number of Hidden Layers		1
	Number of Units in Hidden Layer 1 <sup>a</sup>		7
	Activation Function		Hyperbolic tangent
Output Layer	Dependent Variables	1	Mental strain and pressure
		2	Debt on trading
		3	Monetary loss
	Number of Units		3
	Rescaling Method for Scale Dependents		Standardized
	Activation Function		Identity
Error Function		Sum of Squares	

a. Excluding the bias unit

*Source: Primary data*

Here the category includes non-professional women investors and professional women investors. In the present study, the independent variables are Inadequate financial support, Lack of knowledge in online trading, Less time to devote in online trading, Poor internet connection, Lack of confidence, Socially

influenced decision making, Lack of proper technology, Lack of professional management, Lack of advices from brokers, Security issues, Lack of share market knowledge, Non-familiarity with the website design and the Dependent variables are Mental strain and pressure, Debt on trading and Monetary loss.

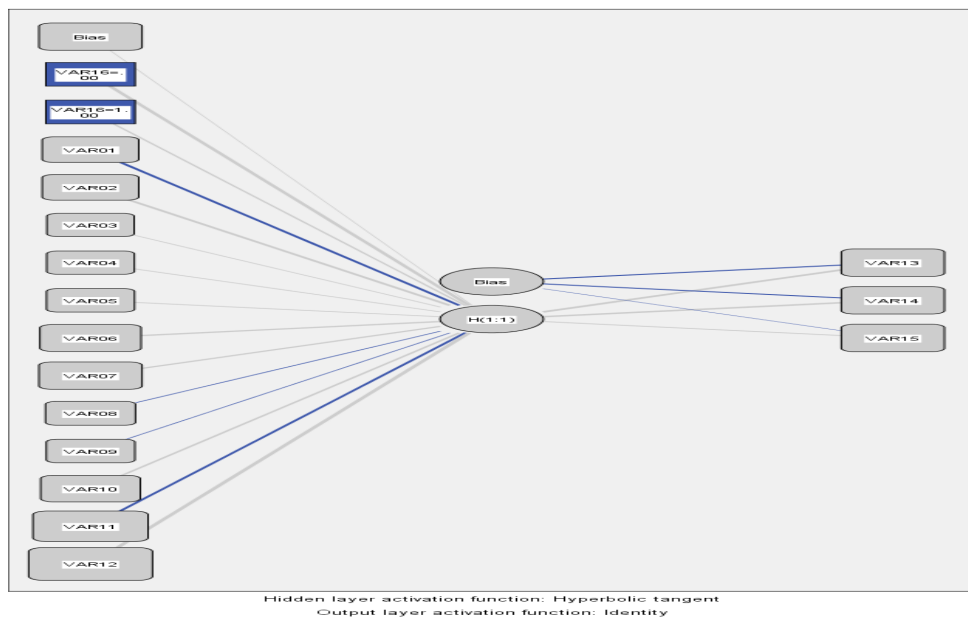


Fig 1: Influence of problems confronted by the women investors on the effect in share trading. Source: Primary data

**Table 2**  
Parameter Estimates

Predictor	Hidden Layer 1	Predicted		
		VAR13	VAR14	VAR15
Education (Bias)	H (1:1)	.044		
Non-professional women investors		.525		
Professional women investors		.155		
Inadequate financial support		-.298		
Lack of knowledge in online trading		.299		
Less time to devote in online trading		.095		

	Poor internet connection	.100		
	Lack of confidence	.105		
	Socially influenced decision making	.298		
	Lack of proper technology	.290		
	Lack of professional management	-.087		
	Lack of advices from brokers	-.063		
	Security issues	.184		
	Lack of share market knowledge	-.292		
	Non-familiarity with the website design	.740		
Hidden Layer	(Bias)		-.165	-.161
1	H (1:1)		.606	.482
				-.017
				.152

Source: Primary data

The constraints faced by non-professional women investors is comparatively having high positive influence on the resultant effects than professional women investors, the former having an influence of 52.5% (high) and the latter with 15.5%. Before training, the highest positive influence by the constraints on the dependent variable is caused by the variables ‘Non-familiarity

with the website design’ (74%), ‘Lack of knowledge in online trading’ (29.9%) ‘Lack of proper technology’ (29%) etc: The highest negative influence on the dependent variable is caused by the variables ‘Inadequate financial support’ (29.8%), ‘Lack of share market knowledge’ (29.2%), ‘Lack of professional management’ (8.7%) etc:

**Table 3**  
Independent Variable Importance

Particulars	Importance	Normalized Importance
Category (category of women investors as per the study: professional and non-professional)	.034	16.1%
Inadequate financial support	.072	34.0%
Lack of knowledge in online trading	.072	33.9%
Less time to devote in online trading	.024	11.2%
Poor internet connection	.026	12.1%
Lack of confidence	.029	13.5%
Socially influenced decision making	.097	45.5%
Lack of proper technology	.106	49.6%
Lack of professional management	.038	18.0%

Lack of advices from brokers	.031	14.7%
Security issues	.088	41.2%
Lack of share market knowledge	.169	79.2%
Non-familiarity with the website design	.213	100.0%

Source: Primary data

The above results were based on the standardized regression after the training level based on the normalized importance. From the table it is clear that the categories (i.e., non-professional women investors and professional women investors) influence the effects by 16.1%. The highest influence is caused by the variable ‘Non-familiarity with the website design’ on

the effects (100%) followed by ‘Lack of share market knowledge’ (79.2%), ‘Lack of proper technology’ (49%), ‘Socially influenced decision making’ (45.5%) etc: The least influence is caused by the variables ‘Less time to devote in online trading’ (11.2%) followed by ‘Poor internet connection’ (12.1%), ‘Lack of confidence’ (13.5%) etc:

**Table 4**  
Model Summary

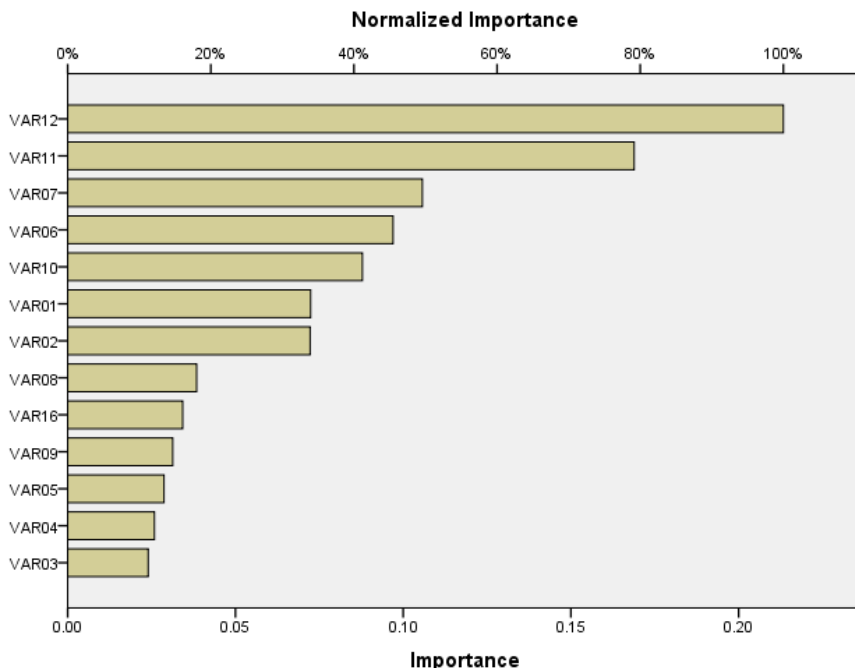
	Sum of Squares Error		260.904
	Average Overall Relative Error		.920
Training	Relative Error for Scale Dependents	Mental strain and pressure	.868
		Debt on trading	.905
		Monetary loss	.988
	Stopping Rule Used	1 consecutive step(s) with no decrease in errora	
	Training Time		0:00:00.06
	Sum of Squares Error		101.468
	Average Overall Relative Error		.932
Testing	Relative Error for Scale Dependents	Mental strain and pressure	.898
		Debt on trading	.853
		Monetary loss	1.054

a. Error computations are based on the testing sample.

Source: Primary data

The above table shows the influenced capacity of the constraints on the resultant effects caused on the investors after training. The constraints faced by women investors have high influence on the outcomes. If the constraints are

not curbed, it is noted that the highest influence is with regard to the ‘Monetary loss’ which has a possibility to occur 1.054 times, followed by ‘Mental strain and pressure’ (.898 times) and ‘Debt on trading’ (.853 times).



Graph1: The graph depicts the influenced capacity of individual variables.  
Source: Primary data

**Conclusion**

Despite of making all the advancements in various spheres of life, stock market is still; an untouched and untrodden area by many women in the country. It can be noted from the interpretation part that the women investors who are having a non-professional background related to their work are facing more constraints than the ones who are having a professional work background. The main reasons for this are, non-familiarity with the website design, lack of share market knowledge, lack of proper technology, socially influenced decision making, lack of confidence etc: An educational programme regarding the investment opportunities available, online share trading related classes, tutorials to get oriented with the websites, professional advices to clear their ambiguities and queries while trading etc: can be provided to budding women investors as well as the existing ones. Besides in order to

instil confidence in them and encourage them to take share trading related decisions independently, expert advices and counselling can be provided to them through these educational programmes. Above all, the societal support especially the family’s support should be given to women who come forward and take decisions in online trading, so that women do not feel alienated and criticized for the financial decisions taken by them.

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# Motivational Factors to Join SHGs among the Fisher Folk Community of Kerala

Aswani.S.P<sup>1</sup>

## *Abstract*

Microfinance is a financial model specially designed for serving the poor. Microfinance programs provide tiny loans to poor people for self-employment projects. The conception of microfinance is as an income-producing tool rather than a consumption aid, thereby, it is an appropriate way of bringing social changes and transforming the society into a progressive one. Irregular income and social and economic backwardness are the main reason for the lack of sustainable development of fisherfolk. SHGs have played a crucial role in the intervention of microcredit given to the fisherfolk communities. Therefore, the researcher intended to study the motivational factors to join the SHGs among the fisherfolk community of Kerala. The study was experimental. The study found that members of the SHGs joined intending to obtain credit and meet their domestic expenses. Hence, they are not considering the objective of micro finance while utilizing the fund. They have used their micro-credit amount for meeting their expenses.

**Keywords:** Fisher Folk, Micro Credit, Microfinance

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## **Introduction**

“Microfinance is a provision of thrift, credit and other financial services and products of very small amounts provided to the poor in rural areas, semi-urban areas and urban areas for enabling them to raise their income levels and improve their living standards” (RBI, 2011). Microfinance is a financial model specially designed for serving the poor. Microfinance programs provide tiny loans to poor people for self-employment projects. The conception of microfinance is as an income-producing tool rather than a consumption aid, thereby, it is an appropriate way of bringing social changes and transforming the society into a progressive one. Irregular income and Social and Economic backwardness is the

main reason for the lack of sustainable development of Marine fisher folk.

## **Need and Relevance of the Study**

Each program or scheme has a set of objectives while implementing the program. The main intention of Micro Finance is to provide means for poverty alleviation through providing small advances towards income-generating purposes without any collateral security. Micro Credit is an important component of Micro Finance, which is given only to the members of the SHG group. There are many factors as to join the SHG, which are very essential for analyzing the future growth of Micro Finance such as to obtain credit, Meeting unexpected and urgent expenses, Meeting domestic

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expenses, Compulsion from social workers, For promoting savings, Socio-economic empowerment, For employment Opportunities, For collectivist, Benefit from LSGs, Compulsion from neighbor or peer, Bandwagon Effect. This study focused on the analysis of motivational factors to joining SHGs of respondents.

### Review of Literature

PrathapSangeetha,K.,(2011), in her doctoral thesis, evaluates the status of Financial Inclusion among fisher households in Kerala and also estimates the factors influencing informal borrowings of the household. The study has found that one-third of the households in the marine fisheries sector have no access to basic financial services including that of Micro Finance. Micro Finance has played a significant role in the Financial Inclusion of fisher households in Kerala, with a higher level of financial inclusion being associated with SHG membership. The factors influencing informal borrowing of households are Socioeconomic variables like occupation patterns, social cohesion, asset base, expenditure, and education.

Davamani,P.(2006) in his doctoral thesis, examines the performance of the SHGs, to identify the influencing factors of effective functioning of SHGs and to measure the impact of socio-economic upliftment of women and their empowerment through SHGs in his sample area, i.e., Viruthanagar district in Tamilnadu. The study finds that adequate training, attendance of members, regular meetings, and decisions on financial transactions have been the major contributing factors for the good performance of the group. Further reveals that there is positive empowerment of the members in Social, political, and Economical aspects after joining the SHGs.

Singh Gurmeet(2010), also admits

that, although micro-enterprises are not a panacea for the complex problems of chronic unemployment and poverty, the promotion of micro-enterprises is a viable and effective strategy for achieving significant gains in income and assets for poor and marginalized people. SHG is being promoted as a part of the microfinance interventions aimed at helping the poor to obtain easy financial services like savings, credit, and insurance.

There are several studies in the fields of microfinance and the fisherfolk communities, both linking them and individually, both internationally as well as in India. But there is a serious research gap in the field of factors influencing to join SHGs of the fisherfolk communities through microcredit, especially in Kerala State. Hence, the present study will attempt to fill this gap.

**Scope of the study:** The present study covers the coastal areas of Kerala. Broadly the term fisher folk refer to both inland and marine fishing communities. This study has taken only marine fisher folk in the scope of the study.

**Objectives:** To study factors that motivated the marine fisher folk to join SHG.

**Null Hypothesis:** There is no significant difference between the Target and the Control Group regarding motivational factors.

### Database and Methodology

The study was experimental. Both secondary and primary data were used for the study. Primary data was collected from the beneficiaries of Micro Credit. A structured interview was scheduled for collecting the primary data. Secondary data was collected through Matsyafed annual reports, Working Papers of Institute of Rural Management, Published reports of Reserve Bank of India, Journals like Indian Journal of Finance, Indian Management,



Journal of Microfinance, XIMB Journal of Management, Kurukshetra, and other sources like Newspapers, online journals like JSTOR, INFLIBNET, etc. and other official websites.

**Sampling**

The total population of the study was 1,72,313. Out of this population, the sample size was 307. Multi-stage sampling was used for the study. Nine coastal districts of Kerala were divided into north, central, and southern coasts on the geographical basis such as Thiruvananthapuram, Kollam, Alappuzha from the Southern part, Ernakulam and Thrissur from the Central part, and Malappuram, Kozhikode, Kannur, and Kasaragod from the Northern part. In the first stage, among the districts of this region, one from each is purposefully selected for the study. Selection depended on the criteria of the highest fishermen population in each region. Thiruvananthapuram, Ernakulam and Kozhikode, were selected from southern, central, and northern regions respectively on this basis. In the second stage, out of 222 marine fishing villages, three were drawn randomly from each

Marine district we have selected. They are Puthenthopu, Puthiyathura and Vizhinjam South from Thiruvananthapuram, Malappuram, Elankunnapuzha and Njarakkal from Ernakulam and Elathoor, Kannankadavu, and Edakadavu from Kozhikode. For analysis purposes, the researcher has collected samples from the Target and the Control group in the ratio of 4:1 (Panda.K.Debadutta., 2010). In the third stage, 34 SHG members from the Target and 9 from the control group were randomly selected using the above-said ratio from primary level welfare co-operatives societies, which are registered under Matsyafed. The Target group denotes beneficiaries and the Control group means those who have a member in SHG but are not availed of Micro Credit.

**Analysis and Interpretation**

Independent samples T-Test was used to study any association or relationship between two groups i.e., Target and Control group in motivational factors for joining the SHG. The motivational factors to join SHGs are discussed below with Independent samples T-Test.

**Table 1**  
Group-wise classification of opinion about motivational factors to join SHGs

Factors	Groups	Mean	SD	F	Sig.	Accept/Reject																																				
To obtain credit	TG	3.78	1.275	0.006	0.939	<b>Accept</b>																																				
	CG	3.83	1.292				To meet unexpected and urgent expenses	TV	2.75	0.996	0.262	0.609	<b>Accept</b>	ER	2.65	0.943	To meet domestic expenses	TV	3.21	1.054	0.443	0.506	<b>Accept</b>	ER	3.19	1.113	Compulsion from social workers	TV	2.56	0.963	1.415	0.235	<b>Accept</b>	ER	2.62	1.052	For promoting savings	TV	2.88	1.152	0.456	0.500
To meet unexpected and urgent expenses	TV	2.75	0.996	0.262	0.609	<b>Accept</b>																																				
	ER	2.65	0.943				To meet domestic expenses	TV	3.21	1.054	0.443	0.506	<b>Accept</b>	ER	3.19	1.113	Compulsion from social workers	TV	2.56	0.963	1.415	0.235	<b>Accept</b>	ER	2.62	1.052	For promoting savings	TV	2.88	1.152	0.456	0.500	<b>Accept</b>	ER	2.79	1.104						
To meet domestic expenses	TV	3.21	1.054	0.443	0.506	<b>Accept</b>																																				
	ER	3.19	1.113				Compulsion from social workers	TV	2.56	0.963	1.415	0.235	<b>Accept</b>	ER	2.62	1.052	For promoting savings	TV	2.88	1.152	0.456	0.500	<b>Accept</b>	ER	2.79	1.104																
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	ER	2.79	1.104																																							

Socio-economic empowerment	TV	2.63	1.075	4.945	0.027	<b>Reject</b>
	ER	2.73	1.242			
For employment Opportunities	TV	2.8	1.049	1.242	0.266	<b>Accept</b>
	ER	2.53	0.996			
For collectivist	TV	2.61	0.88	3.112	0.079	<b>Accept</b>
	ER	2.61	1.002			
Benefit from LSGs	TV	2.81	1.116	0.042	0.838	<b>Accept</b>
	ER	2.71	1.122			
Compulsion from neighbor or peer	TV	2.42	0.83	9.066	0.003	<b>Reject</b>
	ER	2.57	1.044			
Bandwagon Effect	TV	2.31	0.859	17.727	0.000	<b>Reject</b>
		2.56	1.094			

Source: Primary data

The main attraction of Microfinance is about availing credit without any collateral security. An individual can start availing advances within six months of joining an SHG in normal circumstances. Because of this facility, SHGs are a very popular and convenient way to obtain credit in an easy and shackle-free manner. The mean value of the Target Group and the Control Group is 3.78 and 3.83 respectively. This result shows that a large part of the respondents joined SHG to obtain credit from SHG. The significance level is 0.939, which is higher than the p-value. Hence the study accepts the null hypothesis. This shows that both the Target and the Control group have no significant difference regarding motivational factor 'to obtain credit' to join SHGs.

Unexpected expenses denote the expenses that are not expected while planning for one's future expenses. From the financial point of view, the future is uncertain and is technically called Risk. Fisherfolk community always lives near or on the coast and therefore faces a lot of unexpected situations and calamities like tsunami, floods, cyclones, and torrential rains, tidal erosions, etc. Their habitat is

at higher risk due to these and often in need of repair or reconstruction. Hence unexpected expense arises out of these circumstances is also a motivational factor to join SHG. The mean value of the Target and the control is 2.75 and 2.65 respectively. This result shows that the fisher folk community is not bothered about their future. Here the significance value, 0.609 is higher than the p-value, 0.05, thereby accepting the null hypothesis. This shows that there is no significant difference between the Target and the Control Group when it comes to the motivational factor of joining the SHG as a resort in meeting unexpected expenses. This survey result also indicates that respondents in both the group have lived without any planning of their future expenses, which also supports the fact that this community is often mired in debt and end up paying high interest to money lenders.

Domestic expenses are otherwise called household expenses. It means all expenses related to the day to day basis running of the house. It mainly includes the expenses on food, electricity, etc. A person who is a rational thinker is concerned about

meeting their household expenses. So meeting the domestic expenses is also taken as a motivational factor behind joining SHG. The mean value of the Target and the Control groups are 3.21 and 3.19 respectively. This result shows that most of the respondents join SHG to benefit through micro credit and utilize it to meet their domestic expenses. The significance level is 0.506, which is higher than the p-value. Hence, the study accepts the null hypothesis. That means, both the Target and the Control group have shown no significant differences among themselves regarding 'to meet domestic expenses' as a motivational factor to join SHG.

Social workers here denote those who have engaged the Social activities. Area Development Officer (ADS), Community Development Officer (CDS), Local Politicians, Officials of Matsyafed, Priest, etc. are included in this category. CDS and ADS among other things work to achieve the goals of the SHG movement as envisioned by the government. And these social workers help in luring individuals to join SHG through pressure or assurances. The mean score of the Target and the Control group are 2.56 and 2.62 respectively. This result shows that compulsion from the social workers played a very minimal role in canvassing the respondents to join the SHG group. The significance value is 0.235 and is higher than the P-value, thereby accepting the null hypothesis. That means there is no significant difference between the Target group and the Control Group in the motivational factor of 'compulsion from the Social Workers'.

The promotion of savings and credit facilities in microfinance are two sides of the same coin. Savings is one important benefit of Micro Finance. By the term Micro Savings, we mean the savings in small amounts by the SHG members in their group on a weekly or monthly basis. It will be distributed in the future or they

can take a loan from that collective saving on a very minimal interest rate. The mean value of the Target and the control is 2.88 and 2.79 respectively. This result shows that the promotion of savings did not affect the decision of the respondents to join SHGs in a big way. The significance value is 0.500, which is higher than the P-value, thereby leading to accept the null hypothesis. That means there is no significant difference between the Target group and the Control Group in the motivational factor of promoting savings. Both the groups have no intention of promoting savings. This result also supports the finding that the fisher folk community is not concerned about their savings and not taking any serious measures to improve their savings.

Socio-Economic empowerment means empowerment on social and economical standards of living. This can be measured using different factors such as the type of house one lives in, access to medical care, education, nutritious meals, etc., and ability to speak for the rights of themselves. It means gaining confidence and potential in social and economic matters. The mean value of the Target and the Control are 2.63 and 2.73 respectively. This result highlights that the motivational factor of socio-economic empowerment has not been a major deciding factor for the members in joining SHGs. This finding of the study indirectly speaks for the lack of conscious understanding among the fishermen community about their social and economic vulnerability. They lack awareness or serious disinterest in avenues at which they can explore means to improve their social and economic status. The significance value is 0.027 and is less than the P-value, thereby rejecting the null hypothesis. That means there is a significant difference between the Target group and the Control Group regarding the motivational factor, that is, Socio-Economic empowerment.

The majority of the SHG members misunderstand that SHG is one of the government employment programs and after few years, SHG members will get employed by the government. Hence, employment opportunity is taken as one of the motivational factors to join SHG. The mean value of the Target and the control group is 2.80 and 2.53 respectively. This result shows that the respondents did not join the SHG to get employed through this. The significance level is 0.266, which is higher than the p-value. Hence, the study accepts the null hypothesis. That means, there is no significant difference between the Target and the Control group, regarding the motivational factor of 'for employment opportunities'. The study further supports the notion that the fisherfolk community is self-reliant and they like to engage in their traditional livelihood activities which are closely associated with the coast and its resources. They do not aspire to indulge in other occupations in a normal scenario.

The sense of a collective or community is very important for the social empowerment of any society. SHG is also given a collective group that gives priority to each of the members and functions like a community aiding each other. Hence forming a Collective is also taken as a motivational factor to join SHGs. The mean value of the Target and the control group are 2.61 and 2.61 respectively. This result shows that the fisher folk community is not bothered about the opportunity for collective action, the SHG platform provides. Here the significance value, that is, 0.079, is higher than the p-value, that is, 0.05. Thereby, we are accepting the null hypothesis. Data also shows that there are no significant differences between the Target and the Control Group regarding the motivational factor of forming a collective.

Local Self Governments are the three tied decentralized wings of governing

mechanism at both rural and urban levels. In rural areas, it is at the Panchayath, block, and district level and municipalities and corporations constitute urban local governance in Kerala. There is a notion among the SHG members that through SHGs they get higher accessibility and become desirable for the benefit from different schemes that are being distributed through LSGs. Therefore we can consider, benefit from the LSGs as a motivational factor to join SHG, for our study. The mean value of the Target and the control is 2.81 and 2.71 respectively. This result suggests that benefit from LSGs was not determining factor in joining SHG for the respondents. Here the significance value, 0.838, is higher than the p-value, that is, 0.05. Thereby the study accepts the null hypothesis, that is, there is no significant difference between the Target and the Control Group regarding the motivational factor viz, benefit from LSGs.

Neighbors are essential as well as are an influential factor in our lives as a community of households. We associate with our neighbors and depend on each other in crucial and difficult situations. Hence, compulsion from a neighbor is taken as a motivational factor for joining SHG. The mean value of Target and Control are 2.42 and 2.57. This result highlight that compulsion from the neighbor is not affected to join their SHGs. The significance value is 0.00s3 is less than the P-value, so rejecting the null hypothesis. That means there is a significant difference between the Target group and Control Group regarding the motivational factor that is, compulsion from the neighbor.

By bandwagon Effect researcher meant the attitude of 'All have joined so do I'. It is a psychological aspect of human beings to imitate others and the activities they do. Individuals join SHG simply because they see other people joining, which might not have any other particular rationale behind

it. Therefore, Bandwagon Effect is taken as a motivational factor in joining SHG. The mean score of the Target and the Control group are 2.31 and 2.56 respectively. This result shows that Bandwagon Effect has not influenced the respondents in a big way to drive them in joining the SHG group. The significance value is 0.000 is less than the P-value, thereby, rejecting the null hypothesis. That means there is a significant difference between the Target group and the Control Group concerning the Bandwagon Effect.

### Conclusion

For the study, motivational factors which led to joining SHGs by the respondents of the study are discussed with the help of eleven variables. Out of those eleven variables, variables except "To obtain credit" and "To meet domestic expenses" have not registered much impact on respondents' readiness to join an SHG. This result shows that members of the SHGs joined intending to obtain credit and meet their domestic expenses. Hence, they are not considering the objective of Micro Finance while utilizing the fund. They have used their micro-credit amount for meeting their expenses. And one point to note is that these two variables did not show any significant difference between the Target and the Control group. It is also to be highlighted that, not only beneficiaries' but also non-beneficiaries' motive to join SHG are of the same kind. Variable viz, "compulsion from a neighbor" and 'Bandwagon Effect' have shown a significant difference between the Target and the Control group.

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# Role of ESAF Small Finance Bank in Leveraging Financial Services in Rural Area with Special Reference to Thiruvananthapuram District

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## Abstract

ESAF small finance bank is a new generation bank which is headquartered at Thrissur Kerala. As a new bank it is aimed at widening financial inclusion and promoting sector wise financial assistance across India. ESAF small finance bank provides a wide variety of financial services such as deposits, funding, insurance and several beneficial programs to the society. The present paper is focused on the role of ESAF small finance bank in leveraging financial inclusion in rural areas by providing various facilities to meet their various needs. The paper is aimed at analysing various financial assistance by ESAF small finance bank mainly for launching small business units and also the paper analyses the relevance of various schemes of ESAF.

**Keywords :** Financial inclusion, Small Finance Bank, Financial Services.

## Introduction

Financial inclusion means delivering financial services to unserved area, or the under developed sector in the main stream of the economy. ESAF small finance bank started its operation as a strategy for financial inclusion. Currently ESAF small finance have branches across India, ESAF aimed at financial inclusion

and makes contributions in development of micro, small enterprises. ESAF small finance banks covers priority sector lending. As per the annual report of ESAF small finance bank more than 50% of total advances of ESAF was provided for agricultural and allied activities followed by trade and services, industries sector and other personal loans.

**Table 1**

Sector-wise distribution of loans and advances by ESAF small finance bank till 2020 March

Loans and advances by ESAF small finance bank

Sl. No	Industry	Amount in crores	Percentage
1	Agriculture and Allied Activities	3,352.82	50.75%
2	Industries Sector	1,121.05	16.97%
3	Trade & Services	1,160.75	17.57%
4	Personal Loans and other Retail	971.89	14.71%
	Total	6,606.51	100.00%

Source: Annual Report of ESAF small finance bank 2019-2020

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### Small Finance Bank and Financial Inclusion

Small Finance Banks aims at expanded financial inclusion using technology. Before the introduction of small finance bank, Jan Dhan Yojana has created the basic foundation for a digital financial inclusion. Small Finance Banks will help to bring a revolutionary change in the Indian banking system. It will help in making banking more competitive and more inclusive for both borrowers and depositors, ensuring banking services more affordable to the common man. RBI also allowed small finance banks to open accounts without a signature, relying completely on digital signatures and electronic verification, making on-boarding of customers easier for geographically distant places where opening a physical branch may not be feasible.

### Methodology

The present study is both descriptive and analytical. Both secondary and primary data were used for the study. Primary data was collected from the ESAF small finance bank customers in Thiruvananthapuram district, secondary data were collected from magazines, journals and websites. Thiruvananthapuram district have fifteen branches of ESAF small finance bank. Out of these branches Kattakkada branch was randomly selected for data collection.

**List of ESAF Small finance bank in Trivandrum, Kerala**

Sl. No	Industry
1	Attingal-Avanavancherry
2	Kattakkada
3	Kazhakkootam- Thiruvananthapuram
4	Mannanthala – Thiruvananthapuram
5	Parassala
6	Poovar
7	Pozhiyoor - Kulathoor

8	Thiruvananthapuram- Sangumugham
9	Thiruvananthapuram -Bakery Junction
10	Thiruvananthapuram -Ulloor
11	Vanchiyoor
12	Varkala
13	Vattiyoorkavu
14	Venjaramoodu
15	Vizhinjam

*Source: Data provided by ESAF small finance bank*

### Significance of the Study

ESAF small finance bank provides financial assistance to weaker sections of the economy. The present study was intended to find out the role of ESAF small finance bank in promoting livelihood activities of rural poor. In the present context, ESAF small finance have more significance in shaping rural economy. The present study is important, as it tries to analyse the role of ESAF in financial inclusion of rural areas.

### Objectives of the Study

1. To find out the various types of financial assistance provided by ESAF small finance bank.
2. To examine the role of ESAF small finance bank in formation of new business enterprises.
3. To analyse the level of satisfaction of customers on services of ESAF small finance bank

### Scope of the Study

The present study was concentrated on the provision of financial assistance of ESAF small finance bank to form new business concerns. ESAF small finance bank is aimed at rural development, it helps to increase infrastructure facilities in rural areas and also helps in the upliftment of standard of livings of rural poor by providing various types of financial assistance.

**Review of Literature**

1. Sandhya (2019) analysed the role of ESAF in the present context. ESAF a social bank, tries to achieve its social goals by providing ideal solutions to prevailing social issues. Moreover, while delivering financial services, ESAF adopted a social approach for economic growth. The paper highlighted the relation of ESAF with its customers. Unlike any other financial institutions, ESAF covers both social and economic needs of clients. The paper ultimately deals with the social impact of ESAF, it does not contain the impact of ESAF small finance bank in sector wise.
2. (Jansen, 2010) examined the financial inclusion strategies and define financial inclusion as a system of ensuring all financial services to unbanked areas and stated that India have second position in financial exclusion among other Asian countries. India needs a stable system to deepen financial inclusion. The paper highlighted the need for a special banking structure, the paper pointed to the relevance of small finance bank.
3. (Pankaj Kumar, 2009) made an attempt to explore the importance of SHGs in rural economic and social development. After the nationalisation of commercial banks,

Indian banking has undergone to many transformations. But decline of bank branches in rural areas is always a challenge for Indian banking system. The emergence of SHGs ensured a better way for financial inclusion.

**Analysis and Discussion**

**Satisfaction on Business Loan Availed**

Satisfaction of the customers regarding various aspects of loan is an important aspect of this study. Satisfaction was measured on five-point scale for the variables loan amount, interest rate, repayment schedule and processing. The result shows that 80% (40) of the respondents are highly satisfied with loan amount and 20% are satisfied with the same. With respect to interest rate 60% of the sample responded that they are highly satisfied with interest rate at the same time 40% of the respondents are satisfied with interest rate, 70% (35) of the sample respondents are highly satisfied with repayment schedule at the same time 30% are satisfied with the same, 28% of the respondents are highly satisfied with processing time and 60% are satisfied, 6% respondents are unsatisfied with processing time and 6% of the sample respondents were highly unsatisfied with processing time for loan of ESAF small finance bank.

**Table 2**  
Satisfaction on Various Factors Regarding Loan

Features of loan	HS	S	N	US	HUS	Total
Loan amount	40(80%)	10(20%)	0	0	0	50
Interest rate	30(60%)	20(40%)	0	0	0	50
Repayment schedule	35(70)	15(30%)				50
Processing time	14(28%)	30(60%)		3(6%)	3(6%)	50

Source: Primary Data

(S= Satisfied, HS= Highly Satisfied, N=Neutral, US= Unsatisfied, HUS+ highly unsatisfied)

**Amount Taken**

Amount of loan taken by ESAF customers have greater importance in this study, the amount of loan was grouped as RS 50000-Rs 100000. Rs100000-150000, Rs.150000-200000 and above Rs.200000. From the result it can be shown that 98% of the sample respondents have availed the loan amount of minimum Rs 50000 and maximum of Rs.one lakh, only 2% of the sample respondents availed loan amount more than two lakh. No one have availed the loan amount of Rs.100000-Rs 150000 and Rs 150000- Rs 200000.

**Table 3**  
Amount Taken for Setting Business

Amount	Frequency	Percentage
Rs.50000-Rs.100000	49	98%
Rs.100000-Rs.150000	0	
Rs.150000-Rs.200000	0	
Above Rs 200000	1	2%
Total	50	100%

Source : Primary Data

**Purpose for Loan**

The present study mainly focused on the financial assistance made by ESAF small finance bank for setting small scale business in rural areas. The purpose of loans availed were classified as for launching garments unit, food processing unit, farming, agricultural activities, stationary shop, for starting other services and for personal use. The result shows that 30% of the sample respondents used their fund (loan amount) for starting garments unit,8% of the respondents replied that they used the amount for food processing units, 16% of the respondents engaged in farming with the fund of ESAF, 6% of the sample respondents started small stationary shops, none of them used the fund for agricultural activities and 40% of the sample respondents used the fund for their personal needs.

**Table 4**  
Nature of Business Enterprises

Purpose for Loan	Frequency	Percentage
Garments unit	15	30%
Food processing unit	4	8%
Farming	8	16%
Agriculture	0	0
Stationary shop	3	6%
Other service centres	0	
Personal use	20	40%
Total	50	100%

Source: Primary Data

**Major Findings of the Study**

1. Majority of the respondents belong to the age group of 30 years -35 years followed by 35 years-40years (40%),8% of the sample respondents belong to the age group of 25 years -30 years, only 4% of the sample respondents belong to the age group of 40 years -45 years.
2. Majority (70%) of the sample respondents are women customers and all (100%) respondents are from rural area.
3. The poverty line status of the customers shows that majority (96%) of the sample respondents belong to BPL category and only 4% belongs to APL category.
4. Majority (84%) of the sample respondents have own house and 16% have rental houses.
5. Satisfaction of customers towards loan availed from ESAF small finance bank is one of the main factors in this study. The satisfaction of customers towards various features on loan was considered, it was measured on five-point scale on the factors loan

amount interest rate, repayment schedule, processing time. The result shows that 80% of the sample respondents were satisfied with loan amount and 20% were satisfied with loan amount, 60% of the sample respondents were highly satisfied with interest rate and 40% are satisfied with interest rate. In the case of repayment schedule 70% of the respondents are highly satisfied and 30% are satisfied. With regard to satisfaction regarding processing time, 60% were satisfied. 28% were highly satisfied. 6% were unsatisfied and 6% were highly unsatisfied. Generally, ESAF small finance bank customers are satisfied with various features of loan provided by ESAF.

6. Majority (98%) of the sample respondents took loan amount of Rs 50000-Rs 100000, only 2% of the sample respondents availed the loan amount more than Rupees two lakh. ESAF small finance bank generally provides credit for a short-term period, that will be helpful to low-income customers for repayment.
7. Majority of the respondents used the loan amount for their personal needs, 30% of the sample respondents used the fund for starting garments unit, at the same time 8% of the respondents used the amount for food processing units.
8. From the analysis it can be inferred that ESAF small finance bank possess immense role in rural area.

### Suggestions

1. ESAF Small finance bank shall concentrate on rural upliftment.
2. ESAF should deliver social impact programs.

### Conclusion

From the study, it can be concluded that ESAF Small finance bank have immense role in redesigning rural economy, ESAF customers are highly influenced by the financial assistance of ESAF small finance bank. Mainly women customers started business using fund of ESAF, majority of customers used the fund mainly for personal use followed by garments unit, farming, food processing and stationary shops. The present study pointed that ESAF small finance bank influenced in the formation of new business ventures in rural area. To achieve financial inclusion, ESAF Small finance bank have to follow low-cost operations using latest technological tools. Financial literacy programs of ESAF helps the rural people to invest their money into productive sources. ESAF acts as a special bank for rural women, especially middle-aged women. By providing financial assistance to rural women, ESAF opens a door for rural development.

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