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BUSINESS INTERVENTION & TECHNOLOGY

JOURNAL: PIBM MANAGEMENT JOURNAL

Volume: V | EISSN No: 2455-8796

PIBM - Journal of Management

Pune Institute of Business Management Review is the flagship journal of PIBM. It commenced publication in March 2016. It is a double-blind refereed journal. The journal provides an international forum for discussion of advancements in management including accounting, marketing, finance, organizational behavior, human resource management, MIS, quantitative methods, operations management, economics, entrepreneurship, business ethics, strategy, etc. It aims at highlighting and encouraging pioneering works in the field of Management. It aims at providing information about the various new studies in the area of Management. The journal is published on quarterly basis.

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Pune Institute of Business Management

Journal of Management, EISSN: 2455-8796

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Segmenting Learners in e-learning Environments for Semi-Urban Markets of India by using Cluster Analysis

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Abstract

The Education system is experiencing the revolution. Everyone is realizing that there is a need to take education as a lifelong learning viewpoint. (www1) People have started to take their learning into their control as per their convenience. This results into, a new phase of education has emerged termed as; “e-Learning”. The main objective of E-learning is to facilitate learning and improve performance by creating, using, and managing appropriate technological processes and resources. (www1) The Indian online education market was valued at INR 39 billion in Financial year 2018 and by 2024 it is expected to reach INR 360.3 billion, with the growth of a CAGR of 43.85% during the 2019-2024 period. (www2)

Keywords: E-learning, Segmentation, Semi-urban, Cluster Analysis, online Education, Internet Penetration, Competitors, Learners, Characteristics, upskilling.

Introduction

In the industry a few prominent players like; BYJU's, Udemy, Coursera, Upgrade and Duolingo are serving to the requirements of different target audiences. Because of the COVID-19 Lockdown situation in the country is one of the major driver force which is boosting the E-learning growth in India. In urban Market already there is a presence of E-learning but in the Semi-urban and Rural market there is less penetration. This makes important to divide the Semi-urban and Rural market in the various segments in order to serve them better. Objectives of the study is to Identify the Learner Segment for E-learning platform in the semi-urban areas in India. To study the characteristics of each of the identified learner segments and their perception towards E-learning.

Data was collected from a well-defined sample of 334 respondents from semi-urban areas who had an active internet usage rate and have involvement in education or employment. SPSS statistical tool is used for the analysis in that software K-Means cluster analysis was used to extract learner segment. Also the factor analysis was conducted to identify which are the factors can affect E-learning Adoption. After analyzing the collected data came up with four learner segments which can be formed are; Progressive learners, Multifarious Learners, Unaffiliated Learners and Customary learners. Each of the segments have different characteristics and have different needs.

In 21st century there are lot of changes and transformations in the learning pattern. People opt the mode and way of learning according to their time and place constraints. E-learning is the convenient mode the people are shifting upon.

E-learning or electronic learning is the training, learning or education delivered online through computer or any digital devices connected to the internet such as Computers, Tablets, smartphones etc. E-learning is not a new thing we come across, but it was not so much incorporated in our lives before the pandemic. The factors that make the e-learning trending not e-learning only but the whole digital segment is because of the convenience, cost saving, time saving, internet penetration, smartphones usage which is increasing and becoming need. As said by our honorable Prime minister Mr. Narendra Modi "Digital India", India is growing and accepting the digitalization for everything today either it is study, payment, OTT etc.

This pandemic brings lot of pessimism as we can't move out for work, studies etc. and many people also lost their job, but as said Every dark cloud has the silver lining similarly E-learning is like a blessing in disguise for all of us. Many things stopped even it seemed like life has been tucked at one place but one thing that continues is our growth and that was made possible only because of the e-learning. This pandemic situation helps us to grow personally, emotionally and mentally, similarly E-learning facilitates us to be skillful so that we can grow in life.

In urban areas most of the people are aware of the technologies, different websites or platforms used and also, they have the leverage to use it. But, the challenge is to take this in all parts of India specially in semi-urban or rural areas where people are not much aware about the e-learning and the platforms used. So, it is very important to properly segment the market of semi-urban or rural areas to get the deeper insights of the market potential, consumer behavior, consumer perspective about e-learning in the particular segment.

The study is conducted with the objective to recommend services, approaches, and access methods appropriate to each group, in this way it become easier for the companies to take the administrative, academic and support service-related decision and facilitates in designing of services with respect to the characteristics of these group. It is thought that this study will help in determining the needs, behavior and perspective of individuals more broadly.

Literature Review

In all business sectors E-learning has an important role to play. It can provide some important advantage of using e-learning like; cost effectiveness, flexibility, convenience, its wide reach, its accessibility, its consistency and its repeatability. (Angappa Gunasekaran, April 2002) The quality of teaching process and the effectiveness of online access will help to fulfill the objectives of E-learning. (Angappa Gunasekaran, April 2002)

Through an integrative review, relying on both a literature review and an empirical study, this paper identified multiple ways to define effectiveness, with 'learning outcome' as the most prominent definition. (Signe Schack Noesgaard) The authors highlighted the benefits of reflection on and clarification of the way in which these definitions are used in research and practice. The paper discovered that the research is largely applying quantitative and comparative methodologies. In this regard, this paper suggests that applying purely quantitative measures to fulfil predefined learning objectives does not allow researchers and practitioners to discover unexpected and unintended transfers to practice and presents potential sources of error. (Signe Schack Noesgaard)

The study conducted by (Long Pham, 2019) is emphases only on factors that constitute overall e-learning service quality, the relationship between overall e-learning service quality and e-learning student satisfaction, and the relationship between e-learning student satisfaction and e-learning student loyalty. There might be other factors affecting e-learning student satisfaction and loyalty. For example,

future studies can examine the moderating roles of university's reputation and perceived value from e-learning on the relationship between e-learning service quality and students' satisfaction and loyalty. Cultural difference among countries can be Another factor that might affect e-learning student satisfaction and e-learning student loyalty. (www1) (Long Pham, 2019)

The process of teaching and learning by using electronic media is known as E-Learning. In E-learning, Networking and Communications technology is implemented in teaching and learning methods. Generally E-Learning is meant for remote learning or distance learning, but can also be used in face-to-face mode. (Rimini Anand, June 2012) Author studied about the awareness and impact of E-Learning in selected rural areas in India, the providers and learners ratio and an analysis on the collected data has been made to find the advantages of E-Learning resources and their effect on social and mental development of the individuals belonging to rural areas. (Rimini Anand, June 2012)

An important catalyst for the growth of e-learning is the rapid increase in internet connectivity. A robust internet ecosystem, with a multitude of local and global players, will help online learning make further inroads. (Arun Gaikwad, 2015) E-learning helped to increase the level of education, literacy and economic development in underdeveloped and developing countries. If the E-learning will implement in the agricultural industry, it will defiantly result in increase of the growth rate. Proper investigate and plan of action can develop E- Learning and E-commerce in better sense. It is proved that the developing wave of adaptive learning will help higher education, women, government. (Arun Gaikwad, 2015) E-learning is driver in the growth of the percentage of literate population in the total population of India. E-learning plays an important role in educational development as a wheel of growth in education sector. It is expected that if India and developing countries proceed as joint venture and work mutually on the issue of e-learning, it will be beneficial for the development of educational sector. E- learning can also help to capture lot of opportunities and also the speedy development will possible. It is projected that if India and Malaysia work as joint venture together work out on this problem for development, it will be beneficial for educational sector. (Arun Gaikwad, 2015)

Problem Statement

The year 2020 is very difficult for every country but, if it brings Disruptions then on the other hand it brings opportunities too. COVID-19 made a drastic change in consumer behavior, which may hamper many businesses. Due to the lockdown conditions in the whole country, every business and school college remains closed but education need not to be stopped. E-learning is the solution for this and E-learning is the booming sector because of this COVID-19. It was earlier there in existence before Pandemic but it was growing at a moderate pace. But during COVID-19 substantial growth had happened in this segment and it is expected to grow in the future. The urban market can be segmented easily but it is difficult to segment the Semi-urban and rural market for the same. But it's important to segment the unsegmented Semi-urban and rural market in order to tap the untapped market and expand the business. Segmentation can help companies to serve their segmented market better according to the needs and behavior of the segmented market. For bridging this gap in this study Semi-urban market is segmented.

Objectives

To study the expectation of learners from e-learning platforms.

To study the perception of learners about e-learning platforms in the semi-urban market of India.

To divide the semi-urban market into the learner segments for e-learning platforms.

To study the impact of the pandemic on e-learning marketing in the semi-urban market of India.

Hypothesis:

H0: E-learning adoption is not significantly impacted by Pandemic.

H1: E-learning adoption is significantly impacted by Pandemic.

H0: E-learning adoption is not significantly impacted by Digital Infrastructure.

H1: E-learning adoption is significantly impacted by Digital Infrastructure.

Methodology

The study is conducted by using the Descriptive research method. In which data was collected from 334 respondents who are the students of graduation or post-graduation in any stream from semi-urban area. The questionnaire was circulated among the sample of 334 respondents and data was collected. Data was analyzed on SPSS and cluster analysis is used for the segmentation process. With the 1% significance level. Chi-square test with 5% Significance level was used for hypothesis testing and also K-means cluster analysis was conducted for analysis of collected data.

Sampling method

Under Non-Probability Sampling, The Convenience sampling method was used for the study. Sample elements are the students of graduation or post-graduation in any stream from semi-urban area.

Sample size:

The sample size is 334 respondents.

Methods of Data Collection:

Primary data:

Questionnaire which includes Both dichotomous and Likert scale-based questions is used for Primary data collection. This questionnaire was circulated among those 334 respondents for data collection.

Secondary data:

Sources for collection of secondary data are as follows:

Company Websites

Articles.

Research papers.

Data Analysis Tools:

SPSS (Cluster analysis)

Excel (Data cleaning)

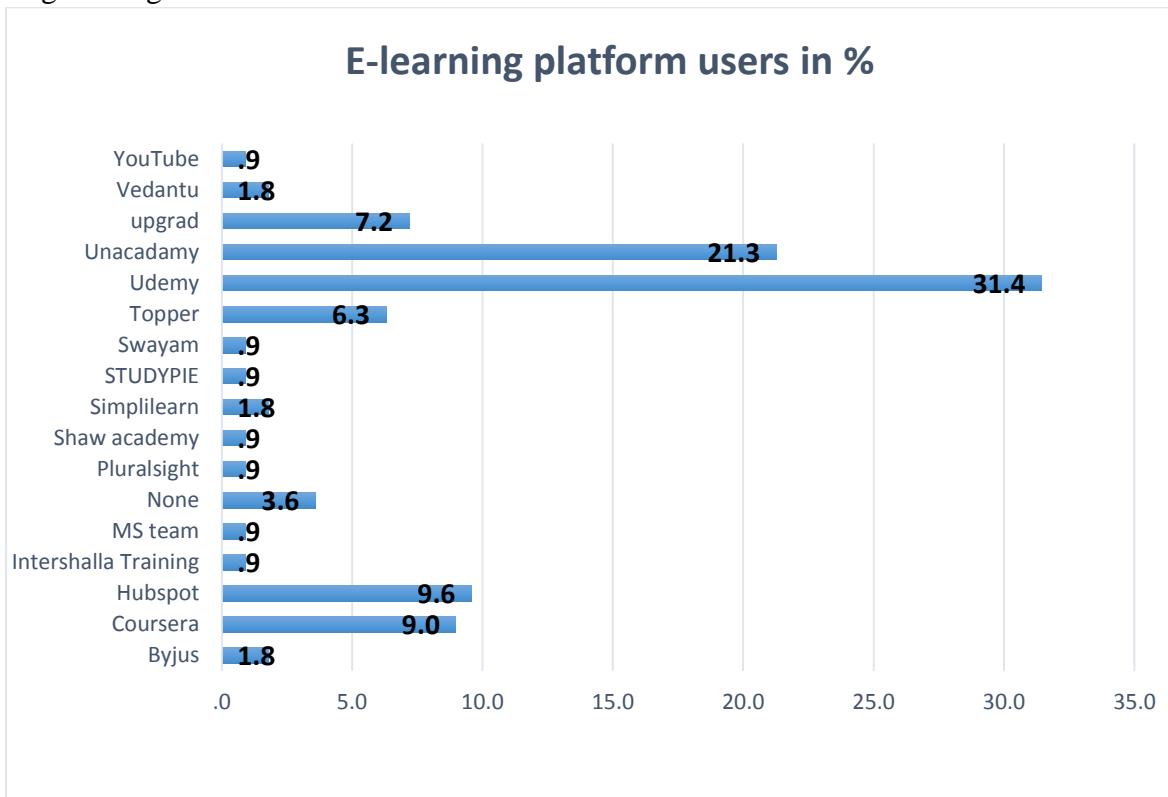
Data Analysis

Do you use any E-learning Platform * Which course/program you are in? Cross tabulation											
			course/program								Total
E-learnin	No	Cou nt	BBA	BCo m	BS C	BTec h	MB A	MBB S	MCo m	MTec h	
			27	0	3	3	27	3	0	0	66
% Of		8.1%	0.0%	.9%	.9%	8.1%	.9%	0.0%	0.0%	.9%	19.8 %

E-learning Platform User		Total												
Year	Count	45	3	6	29	131	3	6	9	36	268			
		% of Total	13.5 %	.9%	1.8 %	8.7%	39.2 %	.9%	1.8%	2.7%	10.8 %	80.2 %		
Total		Count	72	3	9	32	158	6	6	9	39	334		
		% of Total	21.6 %	.9%	2.7 %	9.6%	47.3 %	1.8%	1.8%	2.7%	11.7 %	100.0 %		

(Source: SPSS output table)

Above table helps to interpret that out of total respondents 80.2% are the users of E-learning platform and 19.8% are the non-users of E-learning platform. Majority of users are Management and Engineering students.



From the above data it can be concluded that Udemy and Unacademy are more popular among the learners from semi urban area and have 31.4% and 21.3% users respectively. After that Coursera and Hubspot have 9% and 9.6% of users respectively where upgrad have 7.2% and topper have 6.3% users in semi urban area. Byjus, Simplilearn, Vedantu have 1.8% users each, and other platforms that are Internshala Training, MS Teams, Pluralsight, Shaw Academy, Swayam, and YouTube have 0.9% users each. Out of total respondents 3.6% learners doesn't use any online medium for Study.

Hypothesis Testing

In this study there are two hypotheses both of them have dependent variable is “E-Learning Platform Adoption”.

The first Hypothesis is;

H0: E-learning adoption is not significantly impacted by Pandemic.

H1: E-learning adoption is significantly impacted by Pandemic.

It can be analyzed that there is not much difference in the expected count and observed count in both the cases out of the 334 responses.

Chi-Square Tests							
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)		
Pearson Chi-Square	.389 ^a	1	.533				
Continuity Correction ^b	.191	1	.662				
Likelihood Ratio	.402	1	.526				
Fisher's Exact Test				.709		.339	
Linear-by-Linear Association	.388	1	.534				
N of Valid Cases	334						

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.67.
b. Computed only for a 2x2 table

(Source: SPSS output table)

With the 5% significance level and 95% confidence level, after analyzing the collected data from the sample size of 334 respondents the Pearson Chi-Square value is 0.389 alpha. The significance value is 0.533 alpha with the 1 degree of freedom which is greater than our level of significance ($0.533 > 0.5$). Which means the output is not statistically significant which results in acceptance of Null hypothesis and rejection of Alternate hypothesis. which is H0: E-learning adoption is not significantly impacted by Pandemic. It means E-learning Platform adoption is Independent from Pandemic situation.

II) The second Hypothesis consist of Independent variable as Digital Infrastructure and Dependent variable as E-learning Adoption.

H0: E-learning adoption is not significantly impacted by Digital Infrastructure.

H1: E-learning adoption is significantly impacted by Digital Infrastructure.

It can be analyzed that there is some difference in the expected count and observed count in both the cases out of the 334 responses.

Chi-Square Tests							
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)		

Pearson Chi-Square	5.651 ^a	1	.017		
Continuity Correction ^b	5.004	1	.025		
Likelihood Ratio	5.872	1	.015		
Fisher's Exact Test				.018	
Linear-by-Linear Association	5.634	1	.018		.012
N of Valid Cases	334				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 26.48.
b. Computed only for a 2x2 table

(Source: SPSS output table)

With the 5% significance level and 95% confidence level, after analyzing the collected data from the sample size of 334 respondents the Pearson Chi-Square value is 5.651^a. The significance level of this value is 0.017 alpha with the 1 degree of freedom which is less than our level of significance (0.017 < 0.5). Which means the result is statistically significant which resulted in rejection of Null hypothesis and Acceptance of Alternate hypothesis. which is H1: E-learning adoption is significantly impacted by Digital Infrastructure. It means E-learning Platform adoption is dependent on Digital Infrastructure.

Cluster Analysis

For the segmentation of the learner's market initially Hierarchical Cluster Analysis method was used in the SPSS on the data collected from 334 learners from semi-urban market. After running the analysis, agglomeration schedule is obtained as an output table in which distance of each member from the other is given. From that table based on the distance 4 clusters are divided as given in the following table;

Obtained from Agglomeration Schedule	
Stages	Coefficients
Stage 1	0-1902.569
Stage 2	1967.159-3991.121
Stage 3	4123.622 -5942.348
Stage 4	6289.848-12023.183

Also the Dendrogram using Ward Linkage is obtained from the analysis. Also by analyzing the Dendrogram 4 clusters can be identified. Based on the analysis obtained from the first method i.e. Hierarchical Cluster Analysis method its output contains of agglomeration schedule and Dendrogram using those two outputs help to identify possible number of clusters based on the distance of each members from the correspondent member. Which give 4 clusters to this study.

After getting those 4 possible clusters the next step is to perform the K-means clustering method in order to get the cluster membership and identify the behavior of each clusters by using the variable wise score of each cluster on 1-5 scale. The analysis of the K-means clustering is as follows.

Cluster analysis is used for the segmentation of the market in this analysis K-Means clustering technique is used for analysis.

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
I prefer adopting new technologies.	99.773	3	.591	330	168.759	.000
I prefer Remote Learnings.	57.012	3	.643	330	88.672	.000
I am very much comfortable with changing technology.	68.686	3	.601	330	114.254	.000
I feel one must adopt latest trends in education.	56.290	3	.661	330	85.192	.000
I prefer learning through books only.	34.562	3	1.118	330	30.913	.000
I prefer learning method which save time.	71.499	3	.472	330	151.435	.000
I prefer online content for study.	75.432	3	.664	330	113.648	.000
I am aware with benefits of E-learning.	71.240	3	.478	330	149.094	.000
I don't prefer to go out to take classes.	57.348	3	.882	330	65.018	.000
I prefer studying from online open universities.	59.829	3	.733	330	81.677	.000
I believe E-learning is the best alternative for traditional Learning.	75.039	3	.687	330	109.166	.000
I prefer classroom discussion with faculty.	119.009	3	.442	330	269.253	.000
I prefer online plus face to face discussion with faculty.	100.603	3	.621	330	162.086	.000
I prefer Online discussion with faculty.	80.743	3	.665	330	121.483	.000
I prefer team work.	74.812	3	.521	330	143.510	.000
I prefer group study in physical classroom only.	64.527	3	.950	330	67.949	.000
I believe Video lectures helps in better understanding.	43.449	3	.802	330	54.186	.000
One must do certifications to upskill themselves.	86.497	3	.521	330	165.950	.000
I believe E-Learning is the best way to learn nowadays.	67.538	3	.630	330	107.164	.000

My Family income allow me to invest in E-learning.	85.226	3	.558	330	152.774	.000
I prefer Flexible learning environment.	78.217	3	.589	330	132.718	.000
I prefer E-learning due to influence of my family/friends.	30.669	3	.955	330	32.108	.000
I have my own smartphone.	150.583	3	.407	330	370.399	.000
I have good internet connection.	93.470	3	.534	330	175.067	.000
Government policies promoting Digital Infrastructure in my area.	43.895	3	.932	330	47.084	.000
I prefer e-learning because of health concern.	57.198	3	.985	330	58.089	.000
I prefer e-Learning to maintain social distancing in pandemic.	84.442	3	.724	330	116.666	.000

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

(Source: SPSS output table)

After collected data from 334 respondents who are involved in education (students) from semi-urban area. K-means cluster analysis is conducted with 99% confidence level and 1% of significance level. It gives the output in which 27 factors which have significance level 0.00% it means 100% confidence level. Those 27 factors can be considered while segmenting the learners market. Based on these 27 parameters following four segments are created. Semi urban market for E-learning platform can be divided into 4 segments and the behavior of members of each segment are explained as follows:

Cluster Membership								
Case Number	Cluster	Distance	Case Number	Cluster	Distance	Case Number	Cluster	Distance
1	1	1.755	41	1	5.147	81	3	5.277
2	1	2.866	42	1	4.500	82	4	3.848
3	3	1.830	43	1	5.184	83	1	3.069
4	1	4.212	44	2	3.841	84	1	1.755
5	1	5.184	45	2	4.894	85	3	1.830
6	2	3.432	46	2	6.359	86	1	5.387
7	3	3.981	47	1	3.317	87	4	3.493
8	2	4.216	48	3	4.342	88	1	6.005
9	1	3.457	49	3	4.342	89	3	1.830
10	1	4.697	50	2	6.887	90	2	3.866
11	4	4.458	51	4	2.491	91	2	3.212
12	2	5.222	52	3	1.830	92	4	3.787
13	1	5.459	53	4	2.864	93	4	4.251
14	3	4.153	54	4	2.491	94	2	3.327
15	1	3.548	55	3	5.153	95	1	2.654

16	2	4.242	56	4	5.184	96	2	4.445
17	1	5.438	57	3	4.201	97	3	3.681
18	3	4.853	58	1	5.982	98	2	4.491
19	1	4.901	59	2	4.483	99	3	3.025
20	2	4.030	60	2	5.378	100	2	4.572
21	2	7.003	61	2	5.742	101	1	2.416
22	1	1.755	62	2	4.521	102	2	4.389
23	1	5.184	63	4	3.277	103	4	1.733
24	1	5.171	64	3	3.384	104	2	3.767
25	3	1.830	65	2	3.327	105	1	4.190
26	3	3.775	66	2	5.104	106	2	5.969
27	2	3.174	67	2	3.432	107	1	1.978
28	2	4.242	68	4	5.453	108	2	3.960
29	2	4.693	69	1	2.552	109	2	3.212
30	2	6.511	70	4	5.184	110	2	4.356
31	1	4.661	71	2	4.558	111	1	4.082
32	1	5.382	72	2	3.748	112	1	3.169
33	2	3.662	73	1	3.323	113	1	1.755
34	1	5.415	74	3	5.679	114	1	2.866
35	3	3.058	75	1	3.446	115	3	1.830
36	2	5.437	76	1	3.622	116	1	4.212
37	2	3.696	77	1	3.717	117	1	5.184
38	2	3.537	78	3	5.084	118	2	3.432
39	2	5.600	79	4	3.078	119	3	3.981
40	2	4.693	80	4	2.517	120	2	4.216

(Source: SPSS output table)

Cluster Membership								
Case Number	Cluster	Distance	Case Number	Cluster	Distance	Case Number	Cluster	Distance
121	1	3.457	161	3	4.342	201	3	1.830
122	1	4.697	162	2	6.887	202	2	3.866
123	4	4.458	163	4	2.491	203	2	3.212
124	2	5.222	164	3	1.830	204	4	3.787
125	1	5.459	165	4	2.864	205	4	4.251
126	3	4.153	166	4	2.491	206	2	3.327
127	1	3.548	167	3	5.153	207	1	2.654
128	2	4.242	168	4	5.184	208	2	4.445
129	1	5.438	169	3	4.201	209	3	3.681
130	3	4.853	170	1	5.982	210	2	4.491
131	1	4.901	171	2	4.483	211	3	3.025
132	2	4.030	172	2	5.378	212	2	4.572
133	2	7.003	173	2	5.742	213	1	2.416

134	1	1.755	174	2	4.521	214	2	4.389
135	1	5.184	175	4	3.277	215	4	1.733
136	1	5.171	176	3	3.384	216	2	3.767
137	3	1.830	177	2	3.327	217	1	4.190
138	3	3.775	178	2	5.104	218	2	5.969
139	2	3.174	179	2	3.432	219	1	1.978
140	2	4.242	180	4	5.453	220	2	3.960
141	2	4.693	181	1	2.552	221	2	3.212
142	2	6.511	182	4	5.184	222	2	4.356
143	1	4.661	183	2	4.558	223	1	4.082
144	1	5.382	184	2	3.748	224	1	3.169
145	2	3.662	185	1	3.323	225	1	1.755
146	1	5.415	186	3	5.679	226	1	2.866
147	3	3.058	187	1	3.446	227	3	1.830
148	2	5.437	188	1	3.622	228	1	4.212
149	2	3.696	189	1	3.717	229	1	5.184
150	2	3.537	190	3	5.084	230	2	3.432
151	2	5.600	191	4	3.078	231	3	3.981
152	2	4.693	192	4	2.517	232	2	4.216
153	1	5.147	193	3	5.277	233	1	3.457
154	1	4.500	194	4	3.848	234	1	4.697
155	1	5.184	195	1	3.069	235	4	4.458
156	2	3.841	196	1	1.755	236	2	5.222
157	2	4.894	197	3	1.830	237	1	5.459
158	2	6.359	198	1	5.387	238	3	4.153
159	1	3.317	199	4	3.493	239	1	3.548
160	3	4.342	200	1	6.005	240	2	4.242

(Source: SPSS output table)

Cluster Membership

Case Number	Cluste r	Distanc e	Case Number	Cluste r	Distanc e	Case Number	Cluste r	Distance
241	1	5.438	281	3	4.201	320	2	4.445
242	3	4.853	282	1	5.982	321	3	3.681
243	1	4.901	283	2	4.483	322	2	4.491
244	2	4.030	284	2	5.378	323	3	3.025
245	2	7.003	285	2	5.742	324	2	4.572
246	1	1.755	286	2	4.521	325	1	2.416
247	1	5.184	287	4	3.277	326	2	4.389
248	1	5.171	288	3	3.384	327	4	1.733
249	3	1.830	289	2	3.327	328	2	3.767
250	3	3.775	290	2	5.104	329	1	4.190
251	2	3.174	291	2	3.432	330	2	5.969
252	2	4.242	292	4	5.453	331	1	1.978

253	2	4.693	293	1	2.552	332	2	3.960
254	2	6.511	294	4	5.184	333	2	3.212
255	1	4.661	295	2	4.558	334	2	4.356
256	1	5.382	296	2	3.748			
257	2	3.662	297	1	3.323			
258	1	5.415	298	3	5.679			
259	3	3.058	299	1	3.446			
260	2	5.437	300	1	3.622			
261	2	3.696	301	1	3.717			
262	2	3.537	302	3	5.084			
263	2	5.600	303	4	3.078			
264	2	4.693	304	4	2.517			
265	1	5.147	305	3	5.277			
266	1	4.500	306	4	3.848			
267	1	5.184	307	1	3.069			
268	2	3.841	308	1	1.755			
269	2	4.894	309	3	1.830			
270	2	6.359	310	1	5.387			
271	1	3.317	311	4	3.493			
272	3	4.342	312	1	6.005			
273	3	4.342	313	3	1.830			
274	2	6.887	314	2	3.866			
275	4	2.491	315	2	3.212			
276	3	1.830	316	4	3.787			
277	4	2.864	317	4	4.251			
278	4	2.491	318	2	3.327			
279	3	5.153	319	1	2.654			
280	4	5.184	320	2	4.445			

(Source: SPSS output table)

Above table shows out of 334 members which member belongs to which cluster out of 4 possible clusters and its distance from the corresponding member is also mentioned in the table.

Now we would go for customer segment profiles for each cluster based on their scores on the distinguishing variables. For this Final cluster centers table from output was considered for interpretation. The score of each variable with respect to each cluster is given in the following table:

Final Cluster Centers	Cluster			
	1	2	3	4
I prefer adopting new technologies.	4	4	3	1
I prefer Remote Learnings.	4	3	3	2
I am very much comfortable with changing technology.	4	3	3	1
I feel one must adopt latest trends in education.	4	4	3	2
I prefer learning through books only.	3	3	3	2
I prefer learning method which save time.	4	4	3	2

I prefer online content for study.	4	3	3	2
I am aware with benefits of E-learning.	4	4	3	2
I don't prefer to go out to take classes.	4	2	3	2
I prefer studying from online open universities.	4	2	3	2
I believe E-learning is the best alternative for traditional Learning.	4	2	3	2
I prefer classroom discussion with faculty.	4	4	3	2
I prefer online plus face to face discussion with faculty.	4	4	3	2
I prefer Online discussion with faculty.	4	3	3	2
I prefer team work.	4	4	3	2
I prefer group study in physical classroom only.	4	4	3	2
I believe Video lectures helps in better understanding.	4	3	3	2
One must do certifications to upskill themselves.	4	4	3	2
I believe E-Learning is the best way to learn nowadays.	4	3	3	2
My Family income allow me to invest in E-learning.	4	4	2	2
I prefer Flexible learning environment.	4	4	3	2
I prefer E-learning due to influence of my family/friends.	3	3	3	2
I have my own smartphone.	5	4	3	2
I have good internet connection.	4	4	3	2
Government policies promoting Digital Infrastructure in my area.	4	3	2	2
I prefer e-learning because of health concern.	4	3	3	1
I prefer e-Learning to maintain social distancing in pandemic.	4	4	3	2

(Source SPSS output Table)

From the above output table of final cluster center each variable are written based on its score in each cluster which shows the behavior of each cluster what the member of each cluster think about particular variables. Those clusters are as follows:

Number of Cases in each Cluster		
Cluster	Modern and Tech-Savvy	106.000
	Composite Learners	123.000
	Unbiased Learners	60.000
	Traditional or Orthodox Learners	45.000
Valid		334.000
Missing		0.000

(Source: SPSS Output Table)

Progressive learners	Multifarious learners
Who prefer adopting New Technologies	Who prefer adopting New Technologies
who prefer remote learning	who are neutral about the remote learning
who are comfortable with the changing technology	who are neutral about the comfort with the changing technology
who adopt latest trends in education	who adopt latest trends in education

who are neutral about the learning preference through books only	who are neutral about the learning preference through books only
who prefer the learning method which saves time	who prefer the learning method which saves time
who prefer the online content for study	who are neutral to prefer the online content for study
who are aware with benefits of e-learning	who are aware with benefits of e-learning
who does not prefer to go out to take classes	who doesn't prefer go out to take class
who prefer study from online open universities	who doesn't prefer studying from online open universities
who believe E-learning is the best alternative to the traditional learning	Who believe E-learning is not the best alternative to the traditional learning
who prefer classroom discussion with faculty	who prefer classroom discussion with faculty
who prefer online plus face to face discussion with faculty	who prefer online plus face to face discussion with faculty
who prefer the online discussion with faculty	who are Neutral to prefer the online discussion with faculty
who prefer team work	who prefer team work
who prefer group study in physical classroom only.	who prefer group study in physical classroom only.
who believe Video lectures helps in better understanding	who are Neutral to believe Video lectures helps in better understanding
who think one must do certifications to upskill themselves	who believe one must do certifications to upskill themselves
who believes E-Learning is the best way to learn nowadays	who are neutral to believe E-Learning is the best way to learn nowadays
Who's Family income allow them to invest in E-learning	Who's Family income allow me to invest in E-learning
who prefer the flexible learning environment	who prefer the flexible learning environment
who are neutral to prefer E-learning due to influence of my family/friends	who are neutral to prefer E-learning due to influence of my family/friends
Who have their own smartphones	Who have their own smartphones
Who have good internet connection	who have good internet connection
Government policies promoting Digital Infrastructure in their area	who are neutral to Government policies promoting Digital Infrastructure in their area
who prefer e-learning because of health concern	who prefer e-learning because of health concern
who prefer e-Learning to maintain social distancing in pandemic	who prefer e-Learning to maintain social distancing in pandemic

Unaffiliated learners	Customary learners
They are Neutral About adopting New Technologies	They doesn't prefer to adopt new technologies

who are neutral about the remote learning	who disagree to prefer the remote learning
who are neutral about the comfort with the changing technology	who ae strongly disagree to be comfortable with the changing technology
who are neutral about to adopt the latest trends in education	who doesn't adopt the latest trends in education.
who are neutral about the learning preference through books only	who does not prefer learning through books only
who are neutral about the learning method which saves time.	who doesn't prefer the learning method which saves time
who are neutral to prefer the online content for study	who doesn't prefer the online content for study
who are neutral about the benefits of e-Learning	who are not aware about the benefits of E-learning
who are neutral about to prefer to go out to take classes	who doesn't prefer go out to take class
who are neutral about to prefer studying online open universities	who doesn't prefer studying from online open universities
who are neutral to believe E-learning is the best alternative to the traditional learning	Who believe E-learning is not the best alternative to the traditional learning
who are Neutral to prefer classroom discussion with faculty	who does not prefer classroom discussion with faculty
who are Neutral to prefer online plus face-to-face discussion with faculty	who does not prefer online plus face-to-face discussion with faculty
who are Neutral to prefer the online discussion with faculty	who doesn't prefer the online discussion with faculty
who are neutral to prefer team work	who doesn't prefer team work
who are Neutral to prefer group study in physical classroom only.	who doesn't prefer group study in physical classroom only.
who are Neutral to believe Video lectures helps in better understanding	who believe Video lectures does not help in better understanding
who are Neutral to must do certifications to upskill themselves	who does not think one must do certifications to upskill themselves
who are neutral to believe E-Learning is the best way to learn nowadays	who doesn't believe E-Learning is the best way to learn nowadays
Whose Family income allow them to invest in E-learning	Whose Family income allow them to invest in E-learning
who are neutral to prefer the flexible learning environment	Who does not prefer the flexible learning environment
who are neutral to prefer E-learning due to influence of my family/friends	who prefer E-learning but not due to influence of my family/friends
who have their own smartphones	who does not have their own smartphones
who have good internet connection	who does not have good internet connection

Government policies are not promoting Digital Infrastructure in their area	Government policies does not promote Digital Infrastructure in their area
who are Neutral to prefer e-learning because of health concern	who prefer e-learning not because of health concern
who are Neutral to prefer e-Learning to maintain social distancing in pandemic	who prefer e-Learning not for maintaining social distancing in pandemic

Progressive Learners:

Learners from this segment are more Tech-friendly and adopt new technologies in learning methods and prefer time saving methods of learning. Also prefer online study material. conscious about their health and keep themselves updated with changing technologies. Having good financial condition with good technological infrastructure in their area. Prefer remote learning with flexible environment for individual studies and also prefer physical classroom for group studies. All these factors shows that they are more inclined towards progress in their career.

Multifarious Learners:

Members of this segment are tech-friendly but does not have special opinion about remote learning. They adopt new trends in learning and prefer online plus face-to-face interaction with faculties. They enjoy group studies and prefer team work at physical classrooms they also have good financial status with good connectivity in their area. More habitual to the traditional learning methods but can adopt e-learning for health concern. Their opinions are more composite due to that the cluster is named as Multifarious learners.

Unaffiliated Learners:

Members from this segment do not have any special opinion about traditional learning and E-learning methods. They are neutral about technologies and trends in learning methods but they have their own smartphone and good connectivity. Also, their financial situation is good they can afford E-learning they might incline towards any one side which they feel beneficial to them. Their opinions are more independent and they might change it based on the situation because of that they are named as Unaffiliated learners.

Customary learners:

There are the learners who are not very much familiar to technology and not willing to adopt new technology. They do not prefer online interaction and online study material and prefer traditional way of learning because of under developed technological infrastructure in their area. They are more traditional type by their opinion so they are named as Customary Learners.

Distribution of members out of 334 respondents divided in each created segments is given in the following table:

Factor Analysis:

For the E-learning platform, in order to identify which are the factors which can affect the customer buying behavior of E-learning subscription factor analysis was conducted in this study by using the data which was collected from the 334 respondents.

After analyzing the collected data, the KMO value of the factor analysis is 0.890 which is the valid percentage as it is greater than 0.8 that shows the analysis is reliable. The output getting from this Data is reliable up to 89%. Reliability of any analysis is an important factor and it provide assurance for further analysis.

The study can find four factors based on the analysis which can explain behavior up to 70.919% of the total respondents, which is obtained from the Total Variance Explained output table by using Principal Component Analysis. From the analysis it can be concluded that out of the total variables considered for data collection that can be explained with the use of four factors all those factors can be covered under these 4 factors.

Rotated Component Matrix				
	Component			
	Requisites	Auxiliaries	Peripheral	Estimable
low-cost alternative convenient new trend. technology adoption Time saving Online content Benefits Online Discussion Video lecture Family Income Flexible environment influence of family/friends own smartphone internet connection Government policies health concern social distancing	.260	.280	-.073	.736
	-.011	.154	.336	.689
	-.034	.075	.730	.325
	.352	.760	.135	.180
	.421	.780	.093	.044
	.094	.782	.307	.276
	.427	.769	.027	.169
	.615	.311	.520	.008
	.546	.312	.379	-.209
	.803	.278	.200	.075
	.765	.322	.186	.061
	.317	.130	.737	-.005
	.823	.403	-.077	.097
	.792	.315	-.006	.106
	.639	.164	.327	-.106
	.681	.017	.134	.409
	.769	.208	.056	.220
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

(Source: SPSS output table)

From the above output table, it is found that only 4 factors can cover those factors which can impact the customer buying behavior of the customers of E-learning platform out of total 17 variables which were considered for the data collection. Only variables which have the value more than 0.7 can be taken into consideration that they have impact on the customer behavior. While studying the impact of factor it can be studied with the use of those four factors i.e., Requisites, Auxiliaries, Peripheral, Estimable. Requisite's factor covers/include variables like Family Income, Flexible Environment, Own Smartphone, Internet Connection and Social distancing for which customer might be looking for while buying any E-learning subscription. And under the factor named as Auxiliaries covers variables like

Technology adoption, Time saving, Online Content and Benefits of the services. Peripheral covers variables like recent Trends and Influence of family/Friends. And the fourth factor named as Estimable which is related with the monetary value of the service provided by E-learning platform which is low cost. Majority of customers are looking for low price subscription.

Findings

Out of the total 334 total respondents 106 Learners are more Tech-friendly and adopt new technologies in learning methods and prefer time saving methods of learning. Also prefer online study material. conscious about their health and keep themselves updated with changing technologies. 123 learners are composite who do not have any special opinion for the remote learning and they are more convenient in the physical classrooms as far as health is a concern.

60 learners are unbiased as they are neutral about technologies and trends in learning methods but they have their own smartphone and good connectivity. they do not have any special opinion about the traditional and E-learning, 45 learners are not very much familiar to technology and not willing to adopt new technology. They do not prefer online interaction and online study material and prefer traditional way of learning because of under developed technological infrastructure in their area. Based on this the learner market from semi-urban area can be divided into Four Segments namely; Progressive learners, Multifarious Learners, Unaffiliated Learners and Customary learners.

Also, the factors identified that impact the E-learning are Requisites, Auxiliaries, Peripheral, Estimable. And it is also found that mainly Management and Engineering Students prefer E-learning platform for their studies.

From the hypothesis it is found the E-learning Adoption is not significantly impacted by Pandemic situation but E-learning adoption is dependent of the Digital Infrastructure available in the area.

Managerial Implications

The analysis is conducted to give the direction to the Edu-Tech players that how can they segment their learners market from semi-urban area. As there is moderately developed Digital Infrastructure, many learners prefer the traditional learning method some have neutral opinion about the E-learning methods but with the availability of the essential factors they can adopt e-learning for enhanced learning. Companies must take this into consideration while offering their services to the learners from semi-urban areas.

And majority of learners shown their interest towards flexibility of the learning Environment so companies can work on this factor so they can serve them better. The main focus of the Companies must be on Management and Engineering students as they are more inclined towards technological adoption and have many courses and certifications that can be done through E-learning platform. This study helps in getting broader view of the behavior and perception of the customer of particular segment towards E-learning and this will help the Edu-tech companies to take the decision accordingly to tap the untapped market and further making changes in the strategies of already tapped market.

The study will help E-learning players to identify their target market and serve them with the best suitable product or service. And also help companies to develop their marketing and positioning strategies for individual learner segments.

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A Research paper on Sustainable Development in Agriculture

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Abstract

Agribusiness is the significant financial area that prompts the general monetary development of country. In this paper the idea of reasonable advancement is being utilized to have a site determination on the coordinated arrangement of plant and creature creation rehearses. The investigation inspects the issues looked in the rural area. The essential examination has been done with the farmers of various states to consider the correlation for an enormous scope premise. The issue apparent primarily was the debasements of common assets. We have anticipated that soil is the region, other than others that requires an earnest examination. The features of the examination will be “development of agribusiness in India”, “food security in India”, “development in business and portion of horticulture in India’s exchange”. This exploration has likewise considered the “trimming design and agrarian effectiveness” of various region that accompanies to agriculture. This paper likewise will show that with the assistance of checking and computerization procedures today we can create Internet of Thing System that can uphold feasible advancement through brilliant agribusiness.

Keywords: sustainable development, capital intensive, trimming pattern, shrewd agriculture, food security.

Introduction

Rural area over world has encountered a remarkable development since the mid-20th century. The development in the area has made a huge difference on total flexibility of food grains guaranteeing food security to the increasing population. The phase of development faces a genuine test as far as the concern of manageability. The phase of development faces a genuine test as far as supportability. Some highlighted are maintainability of the assets utilized and abuse of synthetic information sources. One of the significant perspectives which is left unconsidered is the impact of climate variability. Frequent change in atmosphere and its consequences for agribusiness are questionable and to initiate greatest yield and to improve the quality of agriculture there is a requirement of precise figure and information. Thus, because of this the reliance of farming area on rainstorm relates precise climate gauge with appeal. These issues have prompted expanding mindfulness and a felt need for moving ceaselessly for the info escalated horticulture scrutinized during the green revolution stage to feasible cultivating in various pieces of world.

India can securely be described as agricultural country despite of recent growth in the area of manufacturing and service sectors with the diminishing share of agriculture in the national income, since dominant part of its labor force are yet occupied with farming and associated exercises. It has been the best calling of India since the days of yore and has been done on a need premise. Henceforth, this has caused natural degradation and environmental contamination. Despite the fact that no further extension and desire for development of agrarian land endeavors has been made to upgrade the creation of food grains utilizing high yielding assortment of seeds, manure and water system alongside cutting edge range type of gears. Normally much work is expected to inspire the agriculture to a level where it is least influenced by changing storms and needs little from outside the homestead that is alluded to lesser reliance on synthetic compost and water. The restricted achievement of green transformation has been a mishmash in that it has offered ascend to new arrangement of issues: abuse of water and manures. Unreasonable utilization of water brings about water logging and salinization while overabundance of manures and pesticides causes contamination of water bodies pollution of ground waters. India has a biggest region of watered place that is known for which around 33% land is as of now debased and 7 million hectares have been surrendered. In such circumstance an inexhaustible and enduring other option, reasonable agribusiness needs to arise for fruitful rural unrest.

Why is sustainability required?

Sustainable agriculture has been characterized differently. It is typically considered as an advancement that meets the need of current circumstance without bargaining the adaptability of group of people yet to come satisfy their own necessities. It credits to advancement which is earth non-corrupting, actually proper, financially reasonable and socially worthy. Manageable advancement has been broadly acknowledged as a thought that must fundamental for human undertakings. AS obvious from the above definition this thought exemplifies two essential capacities: monetary turn of events and natural manageability. The two thoughts must be taken care of decidedly for any practical improvement to occur. Any horticulture improvement venture or program is really a feasible that keeps on controlling effectively even after withdrawal of financial and specialized help to the task without corrupting the

climate in light of the fact that the issue of agrarian advancement is in-situ and counterfeit the individuals of the locale hold the key for its powerful administration.

Anyways there is the issue emerges after human commitment what are the innovations which will be generally suitable to arrive at this target of economical turn of events. The Internet of Thing advancement has perceived the sharp wearables, related devices, robotized machines and driverless vehicles. Nonetheless, in farming the IoT innovation will have most noteworthy effect. In recent years we have likewise observed a portion of the gainful effects of IoT. Progressing bits of knowledge reveals that the overall people will show at 9.6 billion by 2050. Furthermore, to care of this enormous populace, the horticulture business is limited to embrace the Internet of Things. Among, the troubles like silly atmosphere conditions, atmosphere changes, normal impact, IoT is destroying these challenges and assisting us with fulfilling the requirement for food. In the current paper the requirement of practical horticulture has been underscored. Strategies for practical agribusiness and natural cultivating and conceivable move that could be made in India are talked about in the paper.

Purpose

Mahatma Gandhi said "India lives in village and agriculture is the spirit of Indian economy". Prior to green revolution, we needed to import food grains to take care of our populace from different nation. Farming area is the biggest work giving area. The principal reason behind this investigation was to encourage the substance of natural cultivating to spare the exhaustion of characteristics assets and to expand the familiarity with headway of innovation in the field of agribusiness that would quicken the development of cultivating exercises and would add to feasible turn of events. Insufficient consideration has been paid to common assets in setting of agrarian turn of events.

The prime worry that would legitimize the pertinence of this examination is to present the techniques for cultivating and soil usage that will help with water maintenance of soil. Towards the finish of paper, we have likewise shown the observing of yield and expansion in profitability with the assistance of shrewd agribusiness. Consequently, the fundamental reason concocted would be the help to Indian economy with the reinforcing of the backbone(agriculture) in the current situation.

Objective

The essential target to complete this investigation was to examine the horticulture area of India as it is the prime advancement factor in the improvement of country. Under the developing worth and changing horticultural situation, the upliftment is the fundamental medication. The horticultural advances need an extraordinary move from creation situated to benefit arranged reasonable cultivating. Feasible farming coordinates three primary objectives that is natural wellbeing, monetary productivity and social and financial value. It lays on the standard that we should address the issues of the present without compromising the limit of gathering of individuals yet to come to address their own issues. Accordingly, to the investigation, in September 2015 the UN improvement Agenda containing certain practical advancement in horticulture. These eager and optimistic objectives call for critical reexamining being developed cycle over the world. They additionally call for critical assets to be devoted and put resources into need territories of farming. Government is all investing their amount of energy to meet the requirement of developing populace yet they are confronting sure common difficulties.

Henceforth we have planned the paper featuring the goals, for example:

End hunger, accomplish food security and improve nourishment with maintainable turn of events.

Monetary requirements for the improvement in agriculture.

Assessment of framing development in India in contrast with other areas of economy.

To break down the adequacy and attention to brilliant farming in various conditions of India.

The way to support sustainable development is the limit of ranchers and all different entertainers in horticultural advancement just as more extensive society to learn, try, adjust and coordinate in a successful way. To close the little ranch, the executives to improve efficiency, benefit and maintainability of the cultivating framework will go far to guarantee the inside and out supportability.

Literature review and Research gap

Maintainable cultivating adds to reasonability along its key three sections changing money related, natural and social presentations and is affected by their components. A fantasy for viable agribusiness reliant on five mourns and a couple of exercises has been proposed for changing world food and cultivating zone to achieve the united countries practical improvement objectives and handle the 2030 plan's vision of plausible unforeseen development.

What made us to do investigation on this specific point is the absence of arrangements in the past examination papers. In each examination the conversation was only just on the mechanical progressions or the advancements that has occurred in the field of horticultural however not about the selection of that innovation. Farmers need to get right schooling with appropriate preparing of the usage of trend setting innovation. On having chatted with the ranchers we went to that they are absolutely unaware about the progressions that are occurring in the area of agribusiness. They are needed to be very much familiar that brilliant cultivating depends on the IoT innovations which empowers cultivators and ranchers to decrease waste and upgrade profitability going from the nature of compost used to the quantity of excursions the homestead vehicles have made and empowering productive use of the framework that is worked for observing the yield field with the assistance of sensors and mechanism of the water system framework. Essentially farmers can screen the field conditions from any place.

Research methodology

This study must be viewed as the beginning stage in the process that is unquestionably more mind boggling and needs top to bottom examination. The examination has adopted the strategy of taking a gander at the patterns that is being continued in the creation increment methods, consumption at standard, comprehension and familiarity with advancement accessible in India to infer evaluations of manageable necessities. The examination is being acted to bring the issues and issues looked by our ranchers into everybody's information. The accompanying outcomes and ends are being drawn from the essential examination performed with the ranchers of different states just as the auxiliary exploration. Information will be gathered from the farmers receiving certain methods for example depth interview and detailed exploration will be carried out based upon questionnaires.

Sources of data:

Primary data- Depth Interview, Questionnaires.

Secondary data- Relevant books, journals, agricultural sites.

Limitation of the study

Incorporating economical horticulture on a more extensive scale isn't restricted by one express impediment or a specific requirement. The impediment is more a subsequent of a few issues that connect and are cast-explicit. The snags and the impediments can be concentrated under for headings for example:

Hypothetical obstructions for example questionable definition and missing adaption, connection among science and practice.

Methodological obstruction for example, disregarding prerequisites(tools) and low appropriateness in information or direction.

Individual obstacles for example, missing information, abilities and capacities, conduct and choices, singular recognition and hazard avoidance.

Pragmatic obstacles for example, vulnerability or danger, endeavors, cost acknowledgement, absence of help and directions.

Individuals don't really go about true to form or in their own wellbeing. AS a rule, the disparity between information, accessible information or discoveries not being utilized and not trying information is broadly perceived. Individuals in India are exceptionally prohibitive to change because of which exactness of versatility is extremely low expanding in confining the development of sustainability. Adding to this, manageable agriculture is, as effectively underscored not a reasonable and very much characterized idea that is easy to apply accurately. Every entertainer has their own express or certain comprehension of reasonable farming. The equivocalness with the definition is isn't obviously perceived by the farmers. On the off chance that evaluation technique is contemplated, at that point it includes variety of definition with various points. An appraisal ought to give point by point data to the ranchers that can be utilized in the homestead and for controlling choices. In any case, the impediment is in the event that the evaluation is being led, at the point it might acquire cost which will make unsettling influence on the monetary soundness. Food security is affected by various elements including the individuals who decide food accessibility to the limit of import including the appropriation of food among different portions of expanding populace. The monetary necessity of India to meet its expense for food security is INR 46 lakh crores from 2015-24. This expense incorporates the monetary necessities for giving admittance to protected and nutritious nourishment for all. It likewise remembers speculation of water system, soil and water preservation, no man's land recovery and downpour taken care of cultivating. Of the funds needed for the guaranteeing food security, the monetary hold that India is assessed to confront is of the request for INR 18.5 lakh crores for access and dispersion expenses of food and for financing economical rural creation framework. This hold is probably going to ascend on account of creation, which will require immense venture for a general progress of the nation to supportable rural practices.

As we examined the utilization of keen agribusiness that is, bringing the utilization of Internet of things to down to earth in the area of farming would expand the yields with least use of assets for example, water, compost, seeds and so on, it accompanies certain impediments for example:

The savvy horticulture needs the accessibility of web consistently. Some portion of India doesn't satisfy this necessity in numerous states. Besides, web association is slower.

The keen cultivating-based types of gear expects rancher to comprehend and gain proficiency with the utilization of innovation. This is significant testing in embracing keen agribusiness cultivating everywhere scale over the nation.

Findings

Horticulture being the prime advancement factor, the inescapable worry for corruption and exhaustion of the normal assets base during the time spent development in farming has incited numerous to communicate question about the supportability of development. Individuals discussed the extreme exhaustion of regular assets of water and soil and has altogether heightened the instance of manufactured synthetic information sources and pesticides.

Farmers referenced that unimportant consideration has been paid to normal assets in setting of horticultural turn of event, which has brought about harvest framework with significantly diminished variety and adaptability.

Under the light of current scenario:

Overuse of Land:

The accessible cultivable land is by and by abused primarily because of discontinuity for example almost 50% of the populace is cultivating networks own solitary 0.01-0.04 ha of land. This land has been abused through escalated agribusiness presented during green transformation time. Editing framework with monoculture got prevalent as it supplanted the convention frameworks of intercropping, blended trimming, crop turns and made the dirt fruitless. Despite the fact that dirt fruitfulness diminished indeed, ranch inputs are not applied in required amount and at appropriate phase of plant development common cataclysms where are incessant. Subsequently, crop creation remains stop. The normal efficiency of significant yields is underneath worldwide normal even subsequent to putting some no man's land under development with water system offices.

Economic Maintainability:

For the maintainability to win it requires financial feasibility throughout an extensive stretch of time. Despite the fact that convectional farming includes more monetary danger. Cost of actualizing and scaling agrarian increase procedure, metropolitan agribusiness, agroforestry, and so forth additionally adds to the equivalent. Consistent contracting of land for horticulture because of land interest for businesses, frameworks and urban communities are expanding the expense of food security. Change to feasible farming is likewise adding to the expansion in food sponsorship bill of public authority because of plausible plunge in the food creation.

Smart Agriculture:

Mindfulness and arrangement of data on new/improved advances of harvest creation is poor among the ranchers. This emerges different requirements for actualizing IoT in Indian Farming System. For example, unpredictability, adaptability and reasonableness of the innovations, protection and security concern and low consciousness of IoT gadgets and frameworks among the ranchers just as buyers.

Analysis and implementation

Studies by FAO has demonstrated that little homesteads in non-industrial nations contribute around 30-35% to the absolute agribusiness yield. There is a need to improve profitability, create work and give type of revenue to the helpless fragments of populace. It has been additionally breaking down that the movement of reception of present day innovation in India is moderate and cultivating rehearses are excessively random and informal. Insufficient consideration has been paid to the characteristic assets in the setting of agrarian turn of events while it has brought about diminished variety and adaptability

of farming area. Henceforth soil is the region which requires the pressing examination. Execution that can be taken forward are:

Organic Farming:

High yielding development is more manure responsive which prompted irritation of vermin issue. This thus requires progressively gigantic measure of pesticide to battle bug issues that has arisen as the expected wellspring of threat to maintainability of climate. It stresses limiting the utilization of synthetic information sources depending more on incorporated methodology of yielding the board input. Expansion of natural excrements, reusing of natural squanders through fertilizing the soil and expansion of organic sources of info like vermicomposting.

Yield Rotation and Intercropping:

Harvest turn assumes a significant function in natural cultivating. Prudent determination of yields in harvest pivot helps in proficient usage of plant supplements from various profundity of soils. The act of intercropping additionally helps in limiting the danger of yield disappointment because of dubious precipitation and pervasion of irritation and illness.

Proper Connection of Advancement:

Another obstructing worry over the cultivating business is the moving culture of horticultural labor force. Therefore, reception of web availability arrangements in cultivating rehearses has been set off. The methodology of utilizing IoT innovation to guarantee ideal utilization of assets to accomplish high harvest yields and decrease operation expense is called exactness farming. IoT can possibly change agribusiness in numerous viewpoints for example, Information gathering by savvy horticultural sensor, agricultural robots, domesticated animals following and geo-fencing, brilliant green houses and prescient investigation for shrewd cultivating. Farmers are requested to recognize that IoT is primarily purpose for growing agrarian creation in a canny manner.

Suggestions and recommendations

Economical agribusiness relies on effective utilization of soil, water, domesticated animals and plant hereditary qualities. In spite of the fact that it very well may be accomplished by full usage of human resources. The specific advances that should be contemplated are: Improvement of existing creation framework for example, presenting natural and green excrement. Improving the assurance of regular assets, Introduction of regenerative parts of business for example, horticulture. Streamlining of post reap framework, Improvement of channels of dispersion, giving admittance to advance and other monetary administrations covering hazards. Instruction and limit working to recognize conceivable deficiency and to create improvement gauges, a precise assessment of existing instructive projects in manageable agribusiness with the emphasis on usage practically speaking, is required. On the other hand, for the IoT accommodation certain devices are needed to be set up. Subsequently the improvement of this framework is a thorough undertaking which needs work with capabilities of understanding the devices. Subsequently, framework like this will presumably possibly become reality if public help and government financing is accessible. Consequently, digitalization in horticulture is required. Governmental issues, support and Appreciation- society and purchasers can request reasonable agribusiness eventually, ranchers need to execute it. This suggests ranchers need to have characteristic inspiration to do as such. The execution can be mulled over with the accompanying focuses:

Foundation and advancement of exhaustive homestead supportability warning administrations and the improvement of warning apparatuses. Giving prepared and capability of supportability counsels, improving the schooling of ranchers and improving college courses and preparing program. Supporting projects, financing and dies down for individualized strategy to assist ranch with getting reasonable and taking care of necessary changes. Subsidizing the organization of foundation of fitting organization.

Conclusion

Because of focal significance of farming in India, this investigation was applicable to be considered for the improvement of nation overall. The examination of different components under this heading will provide us the insight about how the farming area can be created in the maintainable way. This examination dissected the potential obstructions that could prevent the usage of supportable agribusiness by and-by-and which alternatives exist to survive and limit these hindrances.

The objective of practical improvement will be to boost the net advantage that society gets from rural creation of food and fiber and from eco framework administration. This requires expanded harvest yields, expanded effectiveness of water use, environmentally based administration rehearses and estimated animal's creation change in certain practices.

Shrewd cultivating is capital escalated and hi-efficiency tech arrangement of developing food neatly and maintainable for the general population. It is the utilization of present day ICT (data and correspondence advances) into farming. Consequently, IoT based shrewd cultivating is profoundly productive when contracted and followed in a regular methodology.

The condition for advancement of feasible farming are getting increasingly ideal. New open doors are opening the eyes of ranchers, improvement laborers, strategy creators and analyst. They presently observe the potential and significance of these practices for their direct financial interest as well as the premise of additional escalation and environmental supportability.

To conclude with, a little ranch the executives to improve efficiency, productivity and maintainability of the cultivating framework will go far to guarantee the inside and out manageability.

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Adoption of e-learning during COVID-19 in India

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Abstract

Advancement in Technology has made the world global village. Digitalization has made positive impact on all the sectors including education. The AI (artificial intelligence) and machine learning based e-learning has broken the walls of traditional classroom-based learning. It is giving opportunity to learner to learn anywhere and anytime. India is in one of the leading IT service provider countries and has world class education infrastructures, but India has been slow when it comes to adoption of technology such as edtech over the years. Due to COVID-19 pandemic, India had to switch from traditional classroom learning to web based learning, which might be the biggest educational experiment India has done to date. This study aims at the teachers and student's perception towards unexpectedly switched e-learning mode. It also provides solutions and suggestions to eliminated challenges and current limitations faced by teachers and students. Convenience sampling method has been adopted in this study and the sample size is kept 51 in case of teachers and 204 for students. Findings reflects the impact of e-learning on teachers and students, and conclusion shows the inclination of students and teachers towards e-learning.

Keywords

Adoption, E-learning, Higher education, student, teacher, COVID-19

Introduction

E-learning is exploiting electronic technologies to fit education curriculum outside the traditional classroom. E-learning includes training and gaining knowledge online through computers, laptops or any other digital device. Since the COVID-19 pandemic has disrupted the normal lifestyle of people across the globe, the virtual world has come to the rescue. Amongst many institutions schools have also shifted their base to virtual platforms to conduct classes online.

Literature Survey

In this literature survey, several studies and government measures have addressed the adoption of e-learning in India during covid-19. To minimize the loss of studies and increasing stress of students, **The Ministry of Human Resource Development** started running learning platforms like e-pathshala, Diksha, NROER (National Repository of Open Educational Resources), NIOS (National Institute of Open Schooling) and other IT initiatives like FOSSEE (open source software for education), e-yantra (robotics education), virtual labs and learning programming (Spoken tutorial). SWAYAM (study webs of active learning for young aspiring minds), which offers about 1900 courses. **According to a report from NDTV Education**, approximately 50,000 people accessed SWAYAM in first week of lockdown. (ETGovernment, Lockdown Impact: Government's e-learning platforms witness surge in subscribers, 2020).

All India Council for Technical Education (AICTE) has made partnership with **Microsoft** to offer over 1500 course modules at free of cost through AICTE's e-learning portal ELIS (Enhancement in learning with improvement in skills). Technologies such as AI, IOT, data science, cloud computing and many more are included. Microsoft will host live webinars as well on next-generation technologies

for students of AICTE. (Network, 2020). **From the article, “COVID-19 Pandemic: Impact and strategies for the education sector in India”** published on 16th April on ETGovernment.com, tells us about the shut-down of schools and colleges with the uncertainty of them to reopen which is affecting the future of 285 million learners. One of the reasons for that uncertainty is the lack of access to e-learning solutions. And then it talks about a multi-pronged strategy to build a resilient Indian education system. (ETGovernment, COVID-19 Pandemic: Impact and strategies for education sector in India, 2020). **According to the article “How COVID-19 deepens the digital education divide in India”** published on 5th October 2020 on weforum.org, tells us about why students aren't able to continue with e-learning. Either it is because of the lack of electricity as 36% of Indian schools run without electricity or inaccessibility of gadgets. It also emphasizes that teachers are also struggling because they don't know, how to use technologies and interface. (Sushma Modi, 2020) **From the article “Online-learning and education for all during and after Covid-19 pandemic”**. The central government has recently launched the PM e-VIDYA platform with 12 new DTH channels for e-learning can be made available as per certain criteria so that resources are availed to all sects and niches. (Singh, 2020) **According to survey “the use of technology in teaching and learning in Indian higher education institutes”** conducted by ed-tech firm Schoolguru Eduserve – A TeamLease Company, nearly 50% university teachers still not comfortable with online teaching due to skill gap. (Desk, 2020) From an article called “To support online learning process online counselling sessions were conducted by the government to observe the perception and views of learners under IGNOU in these sessions it has been observed that people are attached to already existing pedagogies and practices making it difficult for them to adjust to innovations and upgrade existing ones”. **According to Business Insider Bureau**, Online classes also contains digital homework. Students feels fatigue and exhaustion after the classes. Lack of physical and social activity is taking a toll on mental as well as physical health. Most common problems are headaches, eye related problems, and back pain. **According to national wide survey** which was conducted by the **Ministry of Rural Development in 2017-18**, 16.3% households use electricity for 1 to 8 hours a day, 33.2% of households use 9 to 12 hours and only 47.1% of households use electricity for more than 12 hours a day. (Kundu P. , 2020) **According to 2017-2018** data released by the **Ministry of statistics and Planning and Implementation**, only 10.8% of Indians have computers. It would be easy to access online classes through smartphones but it's difficult to work on research and assignments, thus a computer is must. (Kundu P. , 2020) **According to 2017-18 National Sample Survey report on education**, 66% of India's population lives in rural area, and only 15% of rural households have access to internet services. For urban it is 42%. Only 8% households have both computers and internet access. (Das, 2020)

Significance of Study

The purpose of this study is to examine the challenges faced by the teachers and students in India and some plausible solutions to cope up with these challenges. After probing these challenges of e-learning we got to know what improvement we can formulate in the framework to tackle the problem.

Objectives

This paper concentrates on the education scenario and the application of e-learning, and future of e-learning in India.

To study highlights the major obstacles that make e-learning less accessible and less of a lean on option and insight to seek the remedy for the same.

It also helps to comprehend the viewpoint and challenges faced by teachers and students in online learning.

Methodology

In order to achieve above objectives, primary data is collected using online questionnaires and secondary data is studied. The questionnaires were shared through Google forms. They were simple and precise to get reliable and precise results. Teachers and students from universities and colleges were included. Observational and descriptive study was conducted and solutions are given according to that. Convenience sampling method was adopted in this study and sample size for teachers were 51, while 204 were for students.

In order to keep result easily understandable, survey data is presented in simple chart and tabular form, and simple statistical tools like percentage and scores are used.

Analysis and Interpretation

Analysis of Teacher's view

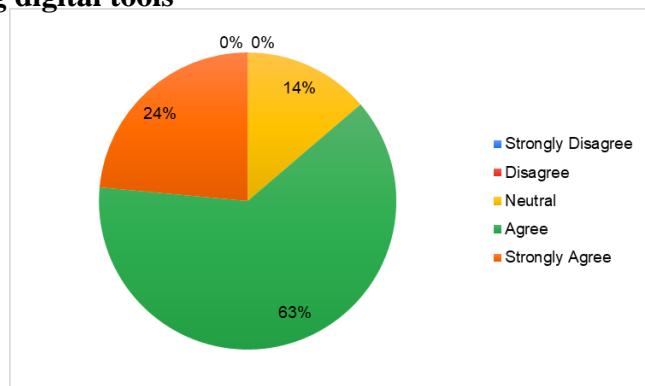
Ease of using digital tools

The revolution of information and technology has put major impact on conventional way of delivering education. Digital gadgets and tools plays major role here. To deliver hassle free teaching it is important to know, that a teacher must know how to use them. In this context, ease of using digital tools is presented in table-

1 and chart-1.

Ease of using digital tools

Scale	Frequency	% Frequency
Strongly Disagree	0	0%
Disagree	0	0%
Neutral	7	14%
Agree	32	63%
Strongly Agree	12	24%
Total	51	100%



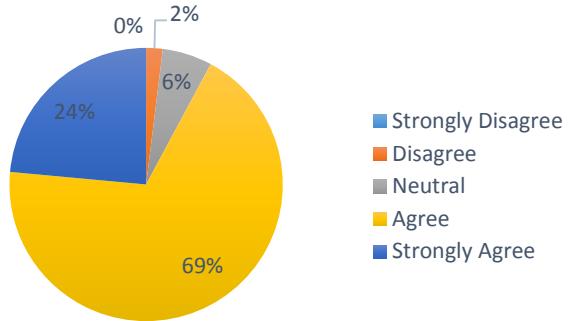
Among 51 respondents, 63% of them agreed that digital tools like Zoom, Google Meet, Microsoft Teams etc. are easy to use, while 24 % of them strongly agreed with ease of using digital tools. Only 14% of respondents were neutral about it. Over all we can see from the pie chart that majority of teachers thinks that digital tools are easy to use.

Frequent use of PPT/PDF/Word files to teach

As the method of teaching is changed it is also important know that from which sources teachers are teaching their students. Because e-learning isn't only the reading and writing from blackboard or computer screen where practicality is missing. It is crucial to teach students with practical activities. So in this context, frequent use of such sources by teachers are presented in table-2 and chart-2.

Frequent use of PPT/PDF/Word files to teach

Scale	Frequency	% Frequency
Strongly Disagree	0	0%
Disagree	1	2%
Neutral	3	6%
Agree	35	69%
Strongly Agree	12	24%
Total	51	100%



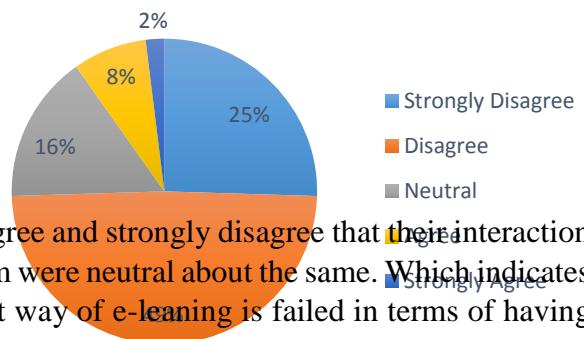
Among the 51 respondents 69% and 24% of them agreed and strongly agreed that they are frequently using PPT/PDF/Word files to teach their students. Which indicates majority of teachers uses content that is already made or taken and then it is taught through such sources.

Increased interaction with students

Another key aspect to look for is that if teachers are able to interact with students through e-learning or not. It is important for teachers to get in touch with each and every student for betterment of students. It is difficult to know whether students are paying attention or not, whether all of them are responding or not. In this context, Increased interaction with student data are presented in table-3 and chart-3.

Increased interaction with students

Scale	Frequency	% Frequency
Strongly Disagree	13	25%
Disagree	25	49%
Neutral	8	16%
Agree	4	8%
Strongly Agree	1	2%
Total	51	100%



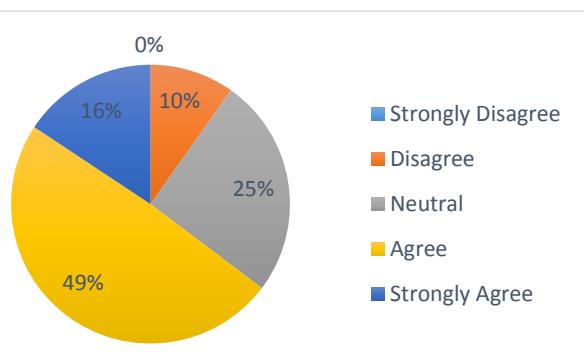
Among the 51 respondents, 51% and 100% of them disagree and strongly disagree that their interaction with students has not increased at all. While 16% of them were neutral about the same. Which indicates that interaction with students has decreased and current way of e-learning is failed in terms of having interaction with students.

The need of change in online course content

Currently the traditional physical class room course is being taught in online mode. But e-learning is much more than chalk and blackboard teaching. And according to that course content may need to change. In this context, the view on the need of change in online course content data is presented in table-4 and chart-4.

The need of change in online course content

Scale	Frequency	% Frequency
Strongly Disagree	0	0%
Disagree	5	10%
Neutral	13	25%
Agree	25	49%
Strongly Agree	8	16%
Total	51	100%



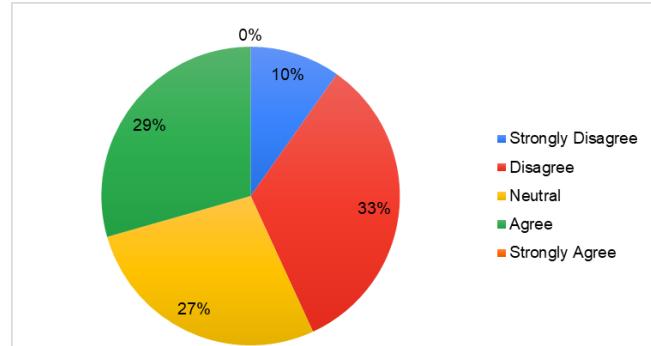
Among the 51 respondents, majority of them 49% agreed that there need be change in online course content while 16% of them were strongly agreed with the same. 25% of them were neutral about it and 10% of them were disagree which means probably those 10% are comfortable with teaching current course content and think that it doesn't require any further modification to deliver it in better way. It can be seen that maximum number of respondents are in favour of change in course content.

View on having improvised e-learning post COVID-19

It is necessary to know what teachers are feeling about future of education in this tech driven world. There will be difference between most experienced teachers and the ones who are in their 30s in terms of preference of teaching mode. It is important to know how they are seeing e-learning with current experience of online mode of teaching. In this context, the views on having improvised e-learning data is presented in table-5 and chart-5.

View on having improvised e-learning post COVID-19

Scale	Frequency	% Frequency
Strongly Disagree	5	10%
Disagree	17	33%
Neutral	14	27%
Agree	15	29%
Strongly Agree	0	0%
Total	51	100%



Among the 51 respondents, 29% understood the importance of e-learning and believes that improvised e-learning would be better than traditional classroom learning. While 27% of them were unsure about it. They might have seen some advantage in e-learning but comfortable with tradition way of teaching. 33% and 10% of them disagree and strongly disagree with the statement and prefers traditional classroom teaching over improvised e-learning. It is evident from table-5 and chart-5; teachers aren't sure whether e-learning is a good option for future or physical classroom is still better. But from numbers we can say that it is inclining towards the physical class room method.

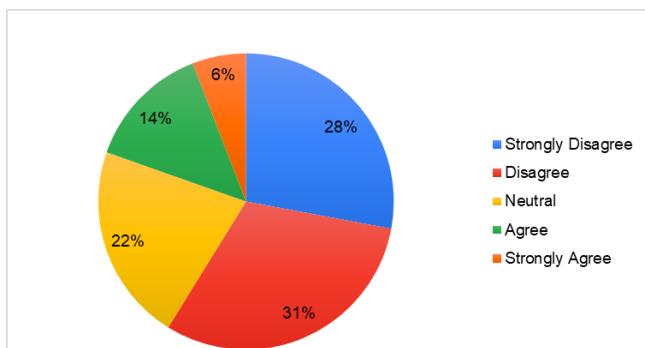
Analysis of Student's view

Ease of online learning over physical classroom learning

One of the key advantages of e-learning is the comfort and flexibility. The current mode of online teaching isn't fully fledged e-learning. Thus, it is necessary to understand how students are feeling towards the current mode of learning. In this context, ease of online learning over physical classroom learning data is presented in table-6 and chart-6.

Ease of online learning over physical classroom learning

Scale	Frequency	% Frequency
Strongly Disagree	57	28%
Disagree	63	31%
Neutral	44	22%
Agree	28	14%
Strongly Agree	12	6%
Total	204	100%



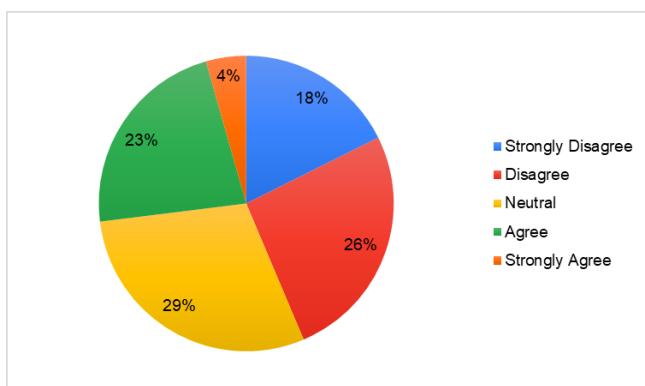
Among the 204 respondents, 28% and 31% respondents strongly disagree and disagree respectively with the statement and prefers physical classroom learning. While 22% of them were unsure, and 14% and 6% of them agreed and strongly agreed respectively, which indicates that they have adopted the e-learning and found it better than physical classroom learning. It is evident from the table-6 and chart-6 that majority of students found online learning difficult.

Student's satisfaction with online learning from their institution

Sudden change of teaching mode has caused problems to teachers as well as to students. In such short notice how institution have managed to change to online mode and what students are feeling towards it, is also important to know. In this context, student's satisfaction with online learning from their institution data is presented in table-7 and chart-7.

Student's satisfaction with online learning from their institution

Scale	Frequency	% Frequency
Strongly Disagree	36	18%
Disagree	53	26%
Neutral	60	29%
Agree	46	23%
Strongly Agree	9	4%
Total	204	100%



Among the 204 respondents, 18% and 26% were strongly disagreed and disagreed with the statement, which accounts for almost half of the respondents. Which shows that they are not satisfied with the online classes from their institution. While 29% of them were feeling neutral towards the statement, which indicates they are neither satisfied nor dissatisfied with their institution's adoption of e-learning. 23% and 4% of respondents were agreed and strongly agreed that they are satisfied with their institutions way of delivering online teaching. Which account for almost a quarter of respondents.

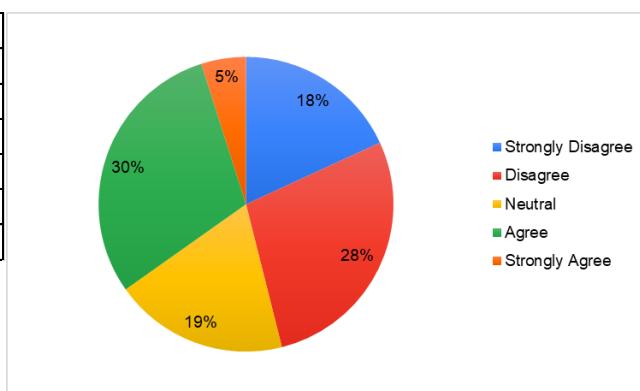
Table-7 and chart-7 indicates that majority of students are not satisfied with online classes from their institutions.

Co-curricular activities during/after online classes

One of the major advantage of e-learning is learning through activities. E-learning is about learning through practical practice. Many institutions have adopted the online mode but are they delivering the actual e-learning through various activities or not is also important to know. In this context, co-curricular activities during or after online class data is presented in table-8 and chart-8.

Co-curricular activities during/after online classes

Scale	Frequency	% Frequency
Strongly Disagree	37	18%
Disagree	57	28%
Neutral	39	19%
Agree	61	30%
Strongly Agree	10	5%
Total	204	100%



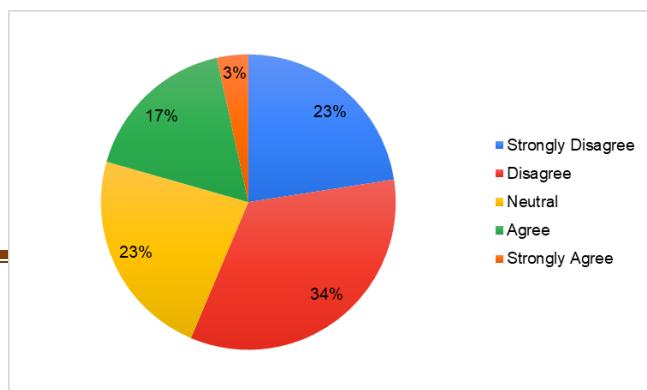
Among the 204 respondents, 18% and 28% of respondents strongly disagreed and disagreed respectively. Which indicates they are no co-curricular activities are done from their institutions. While 19% of them were neutral about the statement, means there are some activities going on. 30% and 5% of them agreed and strongly agreed respectively that there are co-curricular activities going on from their institutions with online classes. Table-8 and chart-8 indicates that almost half of the respondent's institutions are teaching without any activities, while another half of the respondent's institutes are providing more or less extra-curricular activities.

Satisfaction with Co-curricular activities

It is not only providing the co-curricular activities will make things better. The quality of such activities also matters when it comes to e-learning. Because e-learning is about learning through activities. So how students are feeling towards such activities, are they gaining anything or not is also necessary to know. In this context, satisfaction with co-curricular activities data is presented in table-9 and chart-9.

Satisfaction with Co-curricular activities

Scale	Frequency	% Frequency
Strongly Disagree	46	23%
Disagree	69	34%
Neutral	47	23%
Agree	35	17%
Total	204	100%



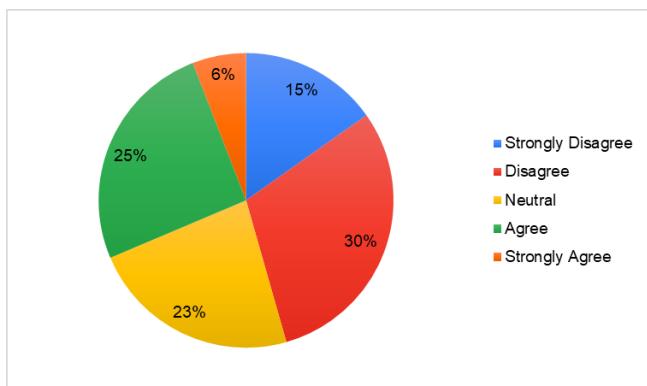
Among the 204 respondents, 23% and 34% strongly disagreed and disagreed, which indicates that either there are no co-curricular activities happening or if any activities are there then they are not satisfactory. 23% of them were feeling neutral about activities provided from their institutions. Which indicates that the activities are not up to the mark. 17% and 3% of them were happy with co-curricular activities. Which means their institutions have adopted proper e-learning methods to satisfy students need of gaining practical knowledge through various activities. From table-9 and chart-9, it is observed that majority of respondent's colleges who have adopted online mode of learning have failed to adopt the proper e-learning while some are doing just okay with e-learning and only few have adopted proper e-learning methods.

Ease of interaction with teachers

Even though e-learning is more about practical learning, one cannot think about learning without interacting with their teachers. Students clear their doubts, understand the concepts of subjects with proper interaction with teachers. But with sudden adoption of online learning it is necessary to know that, the interaction is still same or not. In that context, ease of interaction with teachers' data is presented in table-10 and chart-10

Ease of interaction with teachers

Scale	Frequency	% Frequency
Strongly Disagree	31	15%
Disagree	62	30%
Neutral	47	23%
Agree	52	25%
Strongly Agree	12	6%
Total	204	100%



Among the 204 respondents, 15% of them strongly disagreed while 30% of them disagreed that interaction have not increased. Which indicates that 45% students are having problem with interaction with teachers. 23% of respondents felt neutral. Which indicates that interaction is there but not satisfactory. 25% and 6% of respondents were feeling positive that the interaction has increased with teachers. From table-10 and chart-10 it can be observed that most number of respondents were not able to interact with teachers.

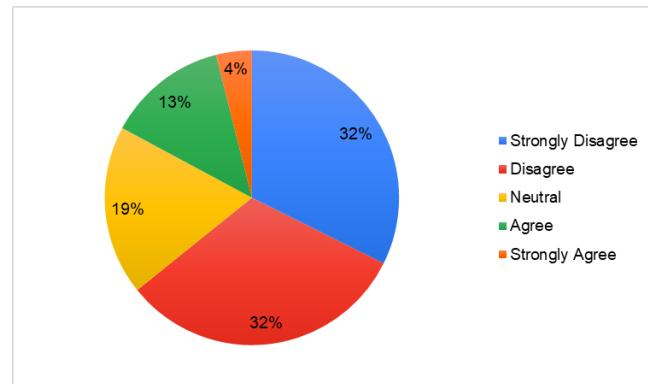
Ease of interaction with classmates

Interaction with peers in college is also one of the effective factor of learning. Social interaction plays crucial role here. Interaction with classmates assists to organize thoughts, understanding of concepts,

finding gaps in their reasoning, teamwork and so on. In this context, ease of interaction with classmates' data is presenting in table-11 and chart-11.

Ease of interaction with classmates

Scale	Frequency	% Frequency
Strongly Disagree	66	32%
Disagree	65	32%
Neutral	38	19%
Agree	27	13%
Strongly Agree	8	4%
Total	204	100%



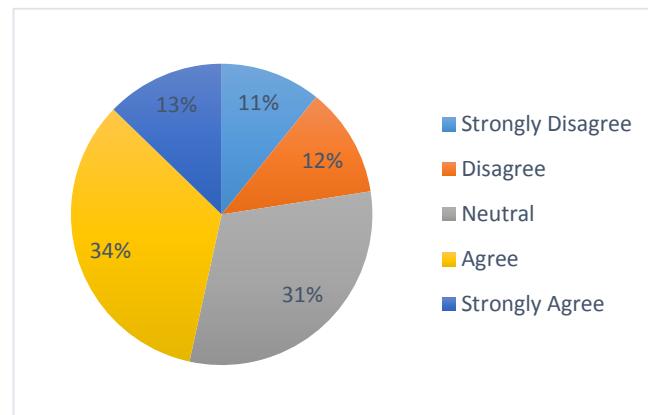
Among the 204 respondents, 32% of students were strongly disagreed and disagreed, which accounts 64% of respondents who felt that peer to peer interaction is missing. While 19% of respondents felt neutral. On the other hand, 13% and 4% of respondents agreed and strongly agreed that peer to peer interaction has increased. It is evident from table-11 and chart-11; majority of students are not able to do peer to peer interaction properly.

Effectiveness of digital tools for learning

Apart from various activities and interaction with peers and teachers use of digital tools is also essential component in e-learning. As we already know it is not just about reading and writing in notebooks, e-learning is much more than that. Various digital tools are used here in order to thrive in tech driven world. Every field of learning has its own tools which makes the work easy and efficient. And from the beginning of e-learning a student must use the digital tools related to their field of study. A learner must understand the need of learning of such tools. In this context, effectiveness of digital tools for learning data is presented in table-12 and chart-12.

Effectiveness of digital tools for learning

Scale	Frequency	% Frequency
Strongly Disagree	22	11%
Disagree	24	12%
Neutral	63	31%
Agree	69	34%
Strongly Agree	26	13%
Total	204	100%



Among the 204 respondents, 11% and 12% respondents strongly disagreed and disagreed respectively, they don't think that use of advance digital tools will help to work effectively. 31% respondents felt neutral towards the use of digital tools to make work easy. On the other hand, 34% and 13% of respondents agreed and strongly agreed respectively and understood the importance of advance digital tools to learn more effectively. It is evident from table-12 and chart-12 that majority of respondents are aware of importance of digital tools and agrees to use them in learning to get effective outcome.

View on having improvised e-learning post COVID-19

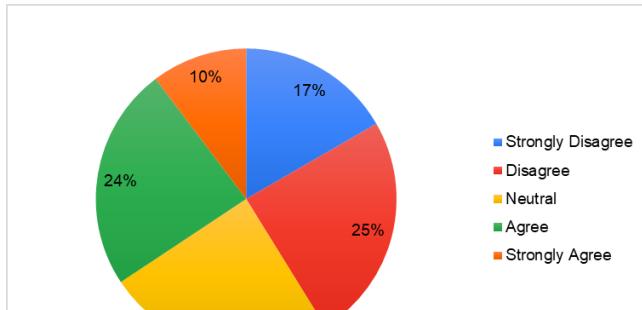
India always has been slow when it comes to adoption of AdTech. Due to sudden transformation to online learning, India experiencing something new which developed countries have already adopted. It is important for future of e-learning in India that what Indian students are thinking about e-learning after experiencing the current online mode of education. In this context, views of student on improvised e-learning

19 data is
table-13 and

View on having improvised e-learning post COVID-19

presented in
chart-13.

Scale	Frequency	% Frequency
Strongly Disagree	34	17%
Disagree	50	25%
Neutral	50	25%
Agree	49	24%
Strongly Agree	21	10%
Total	204	100%



Among the 204 respondents, 17% of respondents strongly disagreed. They prefer to have traditional classroom teaching over e-learning. 25% of respondents disagreed and they preferred the same. While 25% of respondents were felt unsure. Which means they are seeing advantage in e-learning over physical classroom learning but now fully aware of advantages of e-learning. On the flip side 24% of respondents felt that improved e-learning can be beneficial and agreed to have it over physical classroom learning. While 10% of respondent were strongly feeling the same that it will be beneficial for sure. It is evident from table-13 and chart-13 that majority of respondents are in 3 groups which have almost equal number of respondents where one believes that improvised e-learning cannot replace the physical classroom learning, another group of respondents aren't sure and third group thinks that improvised e-learning is beneficial than physical classroom learning.

Overall Analysis of E-learning

To understand the perception of teachers and students towards e-learning during the time of COVID-19 pandemic, we need to answer following questions:

Research Questions for Teachers:

No.	Description of Questions
Conference tools like Zoom, Microsoft Teams, Google meet etc. are easy to use for online teaching.	
You are using ppt/word/pdf files frequently to teach your students.	
Interaction with students has become better due to online teaching.	

There need to be change in the way course content taught to the students in online teaching. Having improvised online mode of teaching post COVID-19 situation would be better rather than teaching in physical classroom.

Q. No.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	0%	0%	14%	63%	24%
2	0%	2%	6%	69%	24%
3	25%	49%	16%	8%	2%
4	0%	10%	25%	49%	16%
5	10%	33%	27%	29%	0%

Overall Data Analysis for Teachers

Question No.	Major Response %	Remarks
1	63%	Digital tools are easy to use
2	69%	Ppt/word/pdf files are frequently used for teaching
3	49%	Interaction with students isn't increased
4	49%	There is need to change online course content
5	33%	Teachers prefers Physical classroom post COVID-19
	27%	Teachers aren't sure about improvised e-learning post COVID-19
	29%	Teachers believe that improvised e-learning is better post COVID-19

Research Questions for Students

No.	Description of Questions
	Online learning is better than physical classroom learning.
	You are satisfied with your institute's way of online teaching.
	There are co-curricular activities during/after online classes from your institute.
	You are satisfied with such online co-curricular activities.
	It is easy to interact with teachers in online learning.
	Interaction with classmates is more in online learning.
	Use of advance digital tools will help to learn more effectively.
	Having improvised online mode of learning post COVID-19 situation would be better rather than learning in physical classroom.

Q. No.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	28%	31%	22%	14%	6%
2	18%	26%	29%	23%	4%
3	18%	28%	19%	30%	5%
4	23%	34%	23%	17%	3%
5	15%	30%	23%	25%	6%
6	32%	32%	19%	13%	4%
7	11%	12%	31%	34%	13%
8	17%	25%	25%	24%	10%

Overall Data Analysis for Students

Question No.	Major Responses %	Remark
1	31%	Prefers physical classroom learning
	28%	Strongly prefer physical classroom learning
	22%	Unsure about online learning
2	29%	Unsure about their institute's online teaching
	26%	Unsatisfied with their institute's online teaching
	23%	Satisfied with their institute's online teaching
3	30%	There are Co-curricular activities
	28%	There are no Co-curricular activities
4	34%	Unsatisfied with Co-curricular activities
	23%	Neutral satisfaction level towards Co-curricular activities
5	30%	Difficult to interact with teachers
	25%	Easy to interact with teachers
6	32%	Interaction with classmates isn't more
7	34%	Advance digital tools are effective in learning

	31%	Unsure about effectiveness of digital tools for learning
8	25%	Prefers physical classroom study post COVID-19
	25%	Unsure about improvised e-learning post COVID-19
	24%	Prefers improvised e-learning post COVID-19

Findings

The findings of this research reveals that e-learning barriers are heterogeneous, encompassing different types of obstructions found in this study are:

Teachers know how to use digital tools which they are using but there is a need to make changes in course content to make online learning more interesting and effective. Another finding of this research reveals that there a lack of student's engagement in the activities. Thus, teachers prefer conventional learning over online learning while some are in favour of e-learning.

Students are not enjoying and satisfied with their institute's way of teaching. Lack of immediate feedback, practical activities, social interaction are the major cause. Some positive aspects found in this study are students believe that e-learning will enhance their technical skills and flexibility in learning. But students are still in dilemma between classroom learning and e-learning.

Suggestions

Some plausible suggestions to overcome the obstructions of current mode of Indian e-learning to make it more beneficial are:

Simulation: Student can apply his knowledge practically with all the skills and resources he/she is possessing. It will be a simulation so one can perform tasks in safe virtual environment.

Branching Scenarios: it involves multiple decision makings which lead the learner to different paths. With each choice a learner can go closer to the outcome with positive or negative repercussions according to their actions. It will help to utilize learner's skills and talent to handle the different situations.

Group projects: One of the most efficient way to build team work as well as leadership skills among the students. Here a group of students can work on a problem or can make finished product such as videos or presentations.

Open-ended questions: No answer is right or wrong. One can freely express their ideas without having fear of being wrong.

Case studies: Solving the real-world problems will help to boost problem solving skills.

Discussion: It contains sharing, exploration of topics, meaningful discussion which helps to improve the level of understanding and comprehension skills. Instructor directs the discussion by providing provoking questions.

Gamification: a powerful and fun method to improve the productivity and knowledge with game-based courses for experiential learning.

Conclusion

Worldwide educational trend is approaching towards e-learning. People has started acquiring knowledge at their best suited time. Individuals are retrieving updated content according to their convenience. Which makes it suitable for everyone. It gives humongous benefits to learners. In

conclusion, this study reflects that teachers and students are inclining towards e-learning but due to poor adoption of e-learning by institutes during COVID-19, they are facing some limitations and challenges, which can be eliminated by joint efforts of government and institutions to adopt full-fledged e-learning in near future.

Limitations and Future scope of research

This study contains very few responses (51) of teachers, thus the results may vary when we look at the view of teachers at national level.

The data from students who are not currently studying online is missing. Total number of responses of students are also little when we consider the national level study. Thus the result may not be applicable to national level.

The reach of the study was limited to few colleges from Pune, Delhi, Nagpur, Jaipur and Changa. Even though the data is collected from few number of cities, still it may not be applicable to present the result for national level.

It is important to know what type of co-curricular activities are provided from college for identification of quality of e-learning. Which is not studied in this research.

Reasons of teachers who prefer conventional teaching post COVID-19 need to know in order to improvise the e-learning.

What students are expecting from e-learning is one of the key thing to improve e-learning process. Which we need to know.

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Analysis on the use of digital marketing and E-commerce as a potential growth tool for India's Sports Good Cluster

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Abstract

The sports goods manufacturing industry in India is nearly a century old and has witnessed a phenomenal growth over past six decades, employing more than 5 lakh people and export requisites standing at \$417.43 million in the FY19. Its manufacturing centres over the years are well established in Jalandhar and Meerut, together claiming around 75% to 80% of total production. But even after its establishment, not many improvements have been witnessed in its operational and other business activities. International brands in India are gaining popularity catalyzed by the feel of Chinese heat which is giving stiff competition to the country. Also, the industry was wrecked with COVID-19 lockdown resulting in a complete halt of trading activities and is now going through a harrowing time as the current situation has forced sport goods manufacturers to defer orders. This paper mainly focuses on small or medium and unregistered units in Meerut and Jalandhar by identifying their business and marketing related problems such as the presence of middlemen/agents as the intermediaries and

inadequate market awareness. It aims to examine how Digital Marketing and E-Commerce can help overcome these and gear its contribution to the Indian economy and promote exports. These units are also expected to elevate with an increased emphasis on Government Initiative Atmanirbhar Bharat and Make in India Schemes followed by cries of Boycott China. This research is purely based on Secondary Data through an article, company annual reports etc. Based on available data, analysis has been done on the growth of the sports industry. Through this research, we can say that there is ample opportunity for small or medium and unregistered units to go independent and grow into the industry with the help of Digital Marketing and E-commerce.

Introduction

century-old sports goods industry, Sports Goods Manufacturers and exporters association, popularly known as SGMEA, was established in 1973 as a Non-Profit Organization. It is a duly registered Association to represent the leading manufacturers and exporters of Sports Goods. The Indian sports goods industry manufactures 318 items. However, major items that are exported are inflatable balls, hockey sticks and balls, cricket bats and balls, boxing equipment, fishing equipment, indoor games like carrom and chess boards and different kinds of protective equipment. The Indian sports goods industry is a highly labor-intensive industry which provides employment to the weaker sections of society and also employs a large number of women. Indian sports goods industry is in its nascent stage, though over 100 years old and some of the manufacturing centers over the years have established in and around Jalandhar, Meerut, Delhi, Mumbai, Agra, Moradabad, Chennai, Jammu and Calcutta. Of these, Jalandhar and Meerut together claim around 75% to 80% of the total production. In Jalandhar and Meerut, there are three different kinds of manufactures, big establishment, small or medium establishments and the unregistered units.

This cluster represents an interesting scenario wherein the labor-intensive industry using age-old technology is exporting sporting goods to over 130 countries. Problems of low productivity, dependence on import of quality raw material, low inclination towards international quality standards, lack of skilled labour, diminishing profit margins and absence of niche markets, all together plague the industry as a whole. International brands in India is gaining popularity. The existing system of marketing and distribution of products is not adequate for small or medium and unregistered units, and hence the industry is facing immediate threat from countries like China, Taiwan and close home Sialkot in Pakistan, but the larger competition being the penetration of Chinese in the market. In the small-scale industry, one of the vital obstacles of development is the existing system of marketing and distribution of products. Presence of middlemen/agents as the intermediaries is problematic, especially for small business entrepreneurs. Inadequate market awareness, lack of knowledge concerning new age marketing practices, are other problems faced by the small businessmen, which reduces the foreign exchange earning capacity of the industry.

Lack of indigenous brands and marketing strategies, the sports goods market is relatively small and splits into several layers. The big establishment is generally geared to exports beside catering to the domestic market needs. But both the big and small enterprise are registered either under the factories Act 1948 or under the Shops and Establishment Act in the state. Here the unregistered units are found particularly in the urban pockets of Jalandhar and Meerut and are mostly small home-based units which are usually run by family members but at times with the help of a couple of hired employees. The organized segment of the market is conferred to limited companies such as BDM, SG, SS, SF, Nalco and National Sports. The total number of units estimated in the cluster is approximately 3350 out of

which 1250 are registered and 2100 unregistered enterprises. These large amounts of unregistered units are fragmented in Meerut and neither comes under the control of government nor any other agency. Most of the workers associated with these units are unskilled and daily wage workers. These units produce sub-standard products for the suburban as well as the rural market. These companies have been stepping up their investment, but most of the small enterprises face several problems including the market risk-bearing capacity. That is why these small players focus their production either for international brands or for the low-end domestic market, rather than establishing their brand. It has also been observed that many at times the big establishment especially exporters are not able to cope up with the large orders from their foreign clients and distribute a share of the production to the small unregistered home-based units.

It is expected that some segments (fitness products, athletic products, table tennis, health equipment's and cricket goods) of sports goods would perform well shortly. But to cater to this high demand the cluster should be well prepared with it's all the resources. Capital is one of the major issues particularly for small as well as micro-scale industries. The small unit holders complained that they don't have sufficient fund to fulfil even a fraction of demand if added in the market. They are manufacturing goods for big brands. Banks and other financial agencies do not look at them but are always ready to finance the big enterprises. There are very few enterprises in the cluster who are engaged in the development of new products to meet out the international challenges. Though, these units are enthusiastic enough to develop better products but based on very few technically skilled persons. That is why they are not able to communicate their research effectively to the world. Piracy of this development is another hurdle.

It is the social responsibility of indigenous corporate houses to come forward to support the young and evolving talent in sports. It not only enhances the sporting culture in the country but also encourages the budding sportspersons to perform at their best at national and international levels. But unfortunately, these houses show more affinity towards established players and the glamorous mega-events such as IPL, ISL, IHL, IPTL and IKL etc.

Now, bringing Digital marketing and E-commerce with its plethora of advantages into the picture. Digital Marketing is more cost-effective than typical marketing. Most small businesses struggle with capitalization and assets. As a result, Digital marketing proves to be a greater and extra price-effective channel of advertising that ensures the supply of results. Digital advertising is inexpensive compared to traditional channels and can be more easily adjusted to fit varying budgets. One can use a blend of traditional and digital to market your entire operation, or even switch to primarily digital and save a lot of money. Community, through site-to-user and user-to-user forms of interactivity (such as chat rooms), e-marketers can develop a core of dedicated customers who become avid marketers of the sit too.

Literature Review

Indian sports goods industry is said to be the labour intensive and employs the weaker sections of the society. However, it is threatened by several other factors such as scarcity of quality raw material, labour laws, poor financial support and import of cheap Chinese products which directly or indirectly affect the economy, employment and other benefits of the industry. Dr Alpana G and Rajul Garg explain this well in "A Review of Sports Goods Clusters by Swot Analysis: Meerut Cluster In Particular" (2015) that Poor availability of raw material, Lack of financial support, Threats at international level, Government reliability on foreign brands, Taxation and levies, Penetration of global brands, High

logistic cost, Poor availability and storage facility, Poor marketing practices, Declining growth of units, low consciousness on international safety and quality standards, are some of the other factors. In addition to these factors, the erratic power supply is one of the major problems reported by most of the entrepreneurs during the field survey. (ijrcm-2-IJRCM-2.vol-5.2015.issue-01.art-091.pdf)

Dr Priya Jhamb in "An Application of Porter's Diamond Framework: A Case of Sports Goods Cluster at Jalandhar" (2016) says that, after using Porter's model and analyzing the different determinants of competitive advantage, we can conclude that sports goods cluster of Jalandhar is mainly dependent on factor conditions i.e. availability of raw material and skilled labour. Apart from it, the presence of sophisticated customers, suppliers of machinery and competitors enhance the growth of the cluster. The cluster has to focus on developing specialized and advanced factors to upgrade competitive advantage from basic factors of production. Further, timely and effective implementation of Government policies and strategies can help the cluster to become more competitive (<http://poster.pacificuniversity.ac.in/2016/2016 month/February/15 A1 PriyaJhamb.pdf>)

According to the study, India exported sports goods worth Rs 768 crore in 2012-13 and imported sports goods worth Rs 2,400 crore during the same period. China, USA, Germany and Japan are top sports goods exporting countries in the world and are giving stiff competition to India. Raising concerns on the survival of India's \$2 billion worth sports goods industry, a study by Assocham has found that the sector is facing serious threat due to influx of cheap Chinese products and global brands. To ameliorate the sports goods industry in India, the study has suggested setting up of composite sports clusters equipped with technical and logistics support of international standards to push India's sports goods exports to Rs 1,000 crore mark. (<https://retail.economictimes.indiatimes.com/news/health-and-beauty/sports-goods/indias-sports-goods-industry-feeling-chinese-heat-assochar/26504077>, 2013)

A century-old sports goods industry is doomed with COVID-19 lockdown resulting in a complete halt of trading activities. Growing at a steady pace of 9 per cent, the Indian sports and fitness goods market was expected to reach US\$ 6,054 million by 2024. It is now going through a harrowing time as the current situation has forced sport goods manufacturers based in Jalandhar and Meerut cluster to defer orders. Domestic purchase of sports goods and equipment has also hit all-time low as sports complexes, state sports activities, and school-colleges are shut. Jindal speaking to SME Futures says that he is not expecting the re-opening of his manufacturing unit any time soon, the biggest challenge is of skilled workforce. Withstanding effects of lockdown enforced to contain the spread of novel coronavirus; the manufacturers of sports items akin to Jindal are apprehensive about their future. They are in jeopardy even when manufacturing units are slowly reopening and people are going back to work. Alarmed over the situation, industrialists in the sector while reckoning the government measures opine that losses are imminent and the industry is in deep waters. (<https://smefutures.com/sports-goods-industry-not-too-sporty-as-covid-19-cripples-demand/>, 2020)

On the National Sports Day when much focus is being given to support and promote sports in the country, the sports goods manufacturers, who are mainly micro, small or medium enterprises (MSMEs), pointed that the sector is going through a tough time due to cut-throat competition from the neighbouring countries and lack of fund and technology. The sector is on the verge of collapse because the manufacturers cannot compete with China, Taiwan and other neighbouring countries because of lack of technology," said Vipan Mahajan, General Secretary of Sports Goods Manufacturers and Exporters Association (SGMEA), Jalandhar. Mahajan demanded that the Government should give them the latest technology and should provide fund under the skill development program. Jalandhar and Meerut account for nearly 75 per cent of total production. Together, the two towns house more

than 3,000 manufacturing units for sports goods and 130 exporters. The Indian sports goods industry also has a presence in the cities of Mumbai, Kolkata and Chennai, albeit at a lower scale. (KNN Bureau) (<https://knnindia.co.in/news/newsdetails/sectors/on-national-sports-day-sports-goods-manufacturers-cry-for-fund-govt-support>, 2016)

In a report, Praveen K Dogre days the Covid-19 pandemic has forced the world of sports to a standstill and India's Rs 2,000-crore sports goods manufacturing industry is also facing "an unprecedented slump" during what would otherwise be peak season. Running out of funds, the industry, whose hubs lie in Punjab's Jalandhar and Uttar Pradesh's Meerut, say only a financial rescue package will help them recover. The national and international orders on which the industry was working on have been put on hold or cancelled and the payments have stopped. (<https://indianexpress.com/article/sports/explained-why-indias-sports-goods-manufacturers-say-theyre-facing-imminent-doom-6396864/>, 2020)

India is the second-most densely populated countries in the world is expected to have 469 million users of mobile phone by the end of 2021 as it has become a basic need for everyone, as said in "Digital marketing trends: What the future holds" by DQIndia. Considering the current pandemic situation, with every business swiftly shifting to online marketing, it has created ample employment opportunities for people. Digital marketing is not only important for business but also is an imperative tool for the SMB sector. A business needs to leverage this opportunity and act upon their online marketing strategies to generate leads robustly with social media platforms and digital arenas. (<https://www.dqindia.com/digital-marketing-trends-future-holds/>, 2020)

In "How digital marketing can help small businesses during a pandemic", The Week says, All the strategies that small business owners have planned for the future are going in vain and have brought their businesses at the initial level. But there comes the ray of hope, as technology is increasing and people are moving towards digital platforms, Digital Marketing is playing a crucial role for small businesses and is giving businesses opportunities to come again onshore and making them ready to enter the sea of tremendous scope that they never expected. Small Business owners have lots of business growth opportunities with digital marketing. Digital Marketing opens doors to a large audience beyond the physical reach of the offline business to target. (<https://www.theweek.in/news/biz-tech/2020/07/07/how-digital-marketing-can-help-small-businesses-during-a-pandemic.html>, 2020)

E-commerce has transformed the way business is done in India. The Indian E-commerce market is expected to grow to US\$ 200 billion by 2026 from US\$ 38.5 billion as of 2017. The ongoing digital transformation in the country is expected to increase India's total internet user base to 829 million by 2021 from 636.73 million in FY19. The E-commerce industry has been directly impacting micro, small & medium enterprises (MSME) in India by providing means of financing, technology and training and has a favourable cascading effect on other industries as well. The Indian E-commerce industry has been on an upward growth trajectory and is expected to surpass the US to become the second-largest E-commerce market in the world by 2034. Technology-enabled innovations like digital payments, hyper-local logistics, analytics-driven customer engagement and digital advertisements will likely support the growth in the sector. The growth in E-commerce sector will also boost employment, increase revenues from export, increase tax collection, and provide better products and services to customers in the long-term. (<https://www.ibef.org/industry/ecommerce.aspx>, 2020)

Objectives

1. To study about the issues faced by India's sports goods industry and how digital marketing and e-commerce can bring a change.
2. Identifying the areas to work upon to boost sales domestically and globally.
3. To examine how the sports industry can improve quality standards and compete with China and Pakistan.
4. To examine how India's sports good industry can contribute to the economy through Atmanirbhar Bharat, Make in India and Local for Vocal Schemes.
5. Analyzing the tools and ways in which digital marketing can provide solutions to help save collapsing small and unregistered units.

Research Methodology

This research is purely based on Secondary Data through the article, journals, news reports, company annual reports etc. To calculate the Sports good market size, the report considered was the revenue generated from the sales of the market providers. The key players operating in the market across the globe were also identified through secondary research. Based on available data, analysis has been done on the growth of the sports industry.

Limitations

- The limited coverage area for the survey, it was restricted to Meerut and Jalandhar only.
- The earlier study in this area is old and micro but it can be implemented on a macro level

Findings

After carefully analyzing the available data, we could easily make out that there are various key areas on which the sports good sector needs to work upon, such as:

1. The Research and Development in sports goods segment is really in the bad shape. No dedicated research centre is established by the stakeholders to develop the new techniques, which could cultivate different sports goods clusters, for up-gradation of existing technologies, materials and human resources, manpower planning, market development, equipment problem and other technical assistance.
2. Most of the small business entrepreneurs depend on traditional sources of finance such as personal or family sources or local moneylenders. Credit available Through financial institutions is either availed by large entrepreneurs and the smaller ones are deprived of it due to illiteracy, lack of awareness, the procedure required for obtaining loans or due to local petty politicking.
3. As much as 60% of all of India's sports equipment manufactured here is exported, according to All India Sports Goods Manufacturers Federation. Also, as per Directorate General of Commercial Intelligence and Statistics (DGCIS), Export of sports goods from India reached US\$ 313.48 million in FY19 and US\$ 122.76 million in FY20 (till July 2019).
4. Despite, achieving significant growth in exports, India contributes just one per cent of the global sports goods market. On the other hand, India's import of articles and types of equipment for sports is an alarming factor for Indian sports goods industry. The sports goods import from

China and Taiwan are increasing at a rapid pace. Although these countries do not have skilled labour base the bigger source of threat is their high production capacity at the cheaper price tags due to high mechanization.

5. The government and different sports federations are the major buyers of sports goods in India but their inclination towards foreign brands is a threat for Domestic manufacturers. Sports goods imported by the government are exempted from import and other duties. With the advent of corporate retailers/ big Brands, many of them directly work with government and /or federations. This cut down the benefits of Indian sports goods manufacturers.
6. In the small-scale industry, one of the vital obstacles of development is the existing system of marketing and distribution of products. Presence of Middlemen/agents as the intermediaries is problematic, especially for tiny business entrepreneurs. Inadequate market awareness is another problem faced by the small businessmen, which reduces the foreign exchange earning capacity of the industry.
7. As reported in previous sections, a big segment of the units are unregistered and are working as the sub-contractors and supplies their products to the low Standard sub-urban or rural markets. That is why they are less quality conscious. Most of these enterprises rather don't know about the national/ international quality standards.
8. Small and large businesses of Meerut's sports industry were among the worst hit during the COVID pandemic, the wave of which was also witnessed in Jalandhar. The economic slowdown also had a major impact. After corona, the business has shrunk by at least 50%. The industry found itself stumped, drastically affected by restrictions on exports and disruption of supply chains due to lack of raw material in the market and decline in demand.
9. Sporting goods market is relatively small and split into several layers. The organized segment of the market is confined to limited companies such as BDM, SG, SS, SF, NELCO and national sports etc. These companies have stepped up their investments but most of the small enterprise faces several problems including the market risk-bearing capacity. That is why these small players focus their production either for international brands or for the low-end domestic market, rather than establishing their brand.

Suggestions

1. The Sports good industry can establish a dedicated research centre which could cultivate different sports goods clusters for up-gradation of existing technologies, materials and human resources, manpower planning, market development, equipment problem and other technical assistance. It would be also beneficial for conducting both online and offline research i.e. through tools such as survey monkey on a global platform to know about the potential growth.
2. With the help of a website small or medium and unregistered businesses can find new markets and trade globally for only a small investment and cater their financial needs as digital Marketing helps generate better revenues. With better revenue growth expectancy, small and medium enterprises using digital marketing techniques will have better chances of expanding their workforce and business – opening their doors to better, larger and farther-reaching markets both locally and abroad. They can capture new audiences which they wouldn't be able

to reach otherwise. This drives conversions and sales and the small business experiences a new level of growth.

3. Digital Marketing is more cost-effective than traditional marketing and running an online store involves less money compared to running a brick-and-mortar shop, these small or medium and unregistered units can expand their global reach even with very little resources and capitalization. Consistent SEO efforts ensure recurring monthly traffic that can be easily converted into a steady flow of incoming sales.
4. The government and different sports federations are the major buyers of sports goods in India but their inclination towards foreign brands is a threat for Domestic manufacturers. With Atmanirbhar Bharat, Make in India and Vocal for Local drive, this small medium and unregistered will get much-needed support from the Indian Government. Also, with an online presence, it would helpful for the government to locate these manufacturers easily.
5. Doing the business online the biggest advantage is that the units will directly sell to the consumers which will eradicate the issue of middlemen and facilitate the existing system of marketing and distribution of products, especially for small or medium and unregistered business entrepreneurs.
6. As reported in previous sections, a big segment of the units is unregistered and supplies their products to the low Standard sub-urban or rural markets. When the units will sell online, they will receive sufficient revenue and sales, so their focus will automatically increase towards making and supplying better quality products making them aware of the national/ international quality standards.
7. Being present across multiple digital channels lends itself to higher brand recognition. The stronger the brand recognition, the greater the opportunity to be the chosen brand by potential customers. Ultimately, this will help small brands to establish their brand rather than focusing their production either for international brands or for the low-end domestic market and help in market risk-bearing capacity.
8. With better revenues and better branding, Digital Marketing can provide a better Return of Investments (ROI) than traditional media and marketing channels. With traditional media, the cost is too exorbitant for small or medium enterprises to leverage on, and the results received are somewhat vague and difficult to measure. Search engines drive massive amounts of traffic to e-stores that result in a greater number of customer acquisition.
9. Overseas buyers are looking for an alternate source of supply instead of heavy dependence on one country which would provide small or medium and unregistered units to employ various tools to market their products or services such as social media marketing, pay per click, blogging, direct marketing, content marketing and much more. Internet marketing provides businesses with a wide base of customers for their services or products. With the internet, these units from multinationals to small or medium enterprises, have access to millions of prospective customers.
10. Impressed with the quality of products and services along with the overall shopping experience, majority of consumers voice their opinions and recommend e-stores to their friends

on Facebook, Twitter, Pinterest, LinkedIn, Instagram, and more. This is an added advantage for the small businesses who provide better products and services.

11. There are lots of opportunities for sports goods industry in up-gradation of existing technology. The import of upgraded technology can be in the form of Foreign Direct Investment (FDI), collaborations and purchase of technology and this opportunity can be adopted by various manufacturing houses.
12. Only a handful of enterprises in the cluster can tape international brands while most enterprises cater to the less sophisticated domestic market or the low-end export market. The major reason identified behind this weakness is technological stagnation and availability of manually skilled labour. With SEO efforts it will build long-term visibility leading to more organic traffic.
13. With proper utilization of Digital Marketing and E-Commerce, the reach of the small or medium and unregistered units will increase globally, with this, the small business will be better capable in competing against countries like China in terms of quality product supply of international standards and overtake the sports good market globally.
14. Through Digital Media Platforms unskilled labours can be converted into a skilled and effective workforce which will help in creating better products at low cost.
15. Online buying and selling will encourage more online payments and will encourage the cashless economy.

Conclusion

The Indian sports and fitness goods market reached a value of us\$ 3,621 million in 2017. The market value is further projected to reach us\$ 6,054 million by 2024, growing at a CAGR of 9.0% during 2019-2024. The growing Indian Retail Market, Large Consumer Base has attracted many foreign brands including sports goods segment to India, especially the brands of developed countries, which are facing a saturated market at home. Both traditional and modern retailers have pointed out that the Indian manufacturing sector has not focused on strong brand development. There are only a few Indian brands and hence they have no options but to purchase foreign brands. In-spite of having different variables of enthusiasm, some debilitating components are as yet winning among the business visionaries like the absence of monetary help by the banks, limited demand of products because big brands and cheap Chinese products are capturing most of the sports goods segment such as fitness products, and low returns on the investment to the artisans and small entrepreneurs. But the biggest bet for quicker recovery even as the government has been urging people to prefer locally manufacturing goods over imported products as part of its Vocal for Local and Make in India campaigns in response to the need to push local products and boycott Chinese goods could be made possible through Digital Marketing.

Digital Marketing could be a new stepping stone for these small or medium and unregistered units as this unit can use digital platforms to build their brand and reputation. E-tail Store is a need for the present small business. It evens the odds for small or medium unit and permits them to punch far over their weight in drawing in clients around the world. Digital marketing allows businesses to be visible in any part of the world. This gives small units the rare opportunity to go global via the immense exposure provided. Digital technology has transformed the way fans and athletes discover, experience, participate, and share their love for sports. Upscaling of these units will not only provide employment

opportunities for the young and dynamic skilled workforce but will also help the industry to contribute to Indian Economy. The units can either try switching for online business, but if they are not capable or less educated enough than government should take initiative to educate these clusters to shift online. In a nutshell, a strong digital marketing strategy can lead these goods manufacturing units on the path to success. However, it is vitally important to have the ability and expertise to implement and execute the strategy successfully.

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Research on New Product Development

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Abstract

The ongoing pandemic has totally changed the lifestyles of people around the world. Human beings have become more health conscious and started inculcating healthier habits in their day-to-day life. The term “Immunity” has become one of the most marketed term these days as people have become more concerned about making their body repellent to any kind of virus. Reports indicates that the fear of the virus has caused a whopping 500% increase in search results for the word “Immunity” on google alone. Data from E-commerce websites shows that every 3rd buyer has been ordering an immunity-boosting product. People will get more inclined towards these type of products as the fear of getting effected by such viruses is going to stay for a longer period of time in people’s mind.

Spices play an integral role in Indian cuisine. These are some of the most important items of domestic as well as industrial kitchens. Spices are used to lift-up the taste and flavours of the food. If we talk about the global spices market size, it was valued at USD 5.86 billion in 2019. The expected CAGR of the spices market from 2020 to 2027 is 6.5%.

Spices are one of the easiest way to include any immunity boosting ingredient in your day to day routine. We have designed a spice (masala paste) that will not only satisfy consumers’ taste buds but also help in boosting their immunity. This paste is a mix of organic spices like ashwagandha, tulsi, mulethi, giloy etc. which are proven ayurvedic remedies for boosting an individual’s immunity. Apart from these ginger and garlic are important ingredients in this paste. This masala paste is designed in such a way that it can be used in preparing vegetarian as well as non-vegetarian meals. Currently there is no such product in spices category which caters the need of boosting the consumer’s immunity.

The purpose of this research is to determine whether or not this type of product will be accepted in the market by the consumers. To determine this we will be using secondary and primary data as source of data collection. After proper research and analysis of data we will be able to come to a conclusion that whether or not this type of product will be accepted in the market.

Introduction

As the COVID-19 cases around the world are still on rise, the fear among the people about their health is also rising. Making their immunity strong is now the foremost priority of any individuals list. People are ready to spend more on immunity boosting products. But there is a budget constraint for most of the people as this will have a toll on their monthly expenses.

The question which arises here is how can a person include these products in his day to day life in a feasible manner without adding additional products to their cart?

To solve this problem we decided to come up with a product that can be easily used on a daily basis in all the households and also helps in boosting the immunity of consumers. The answer to this was an immunity boosting masala (paste) which can be used in day to day cooking without making any additions for immunity products to consumer’s monthly expenses.

Now, the question before us was up to what extent people will be ready to consume this type of product in their day-to-day life. To determine this we came up with the idea of conducting a research on the acceptability of the product in the market.

Research Methodology

We used qualitative and quantitative methods to gather data. These methods included surveys with various questions that assessed whether the consumers have a basic need of any immunity boosting product.

For primary data collection we surveyed a set of 50 people living in urban areas including students, home makers, business owners, and salaried employees. A google form containing 10 questions was circulated within the respondents. The questions were related to their purchasing psychology and behaviour.

For secondary data we used the already available information on web. Secondary data was helpful in providing information about the growing trends related to immunity.

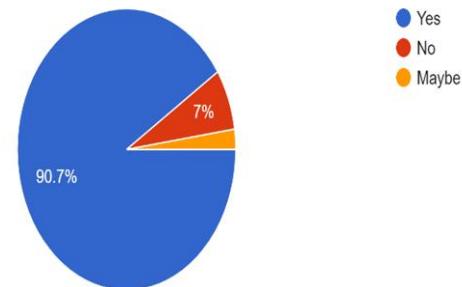
As this is a new product, we will be conducting many more surveys for it in the coming days.

Results

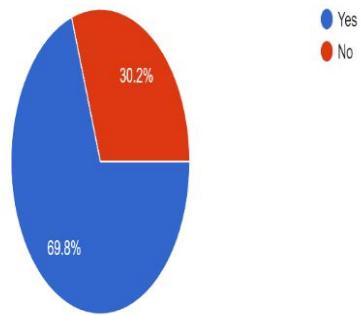
The survey results indicated that more than 90% of the respondents were now conscious about their immunity and more than 70% people find it difficult to include immunity products in their day to day life. As the immunity boosting products add up to their monthly expenses, 61% of respondents are not using any kind of such products even when they want to. Remaining 39% of the respondents spent an average of RS1000 additional for immunity products.

Results also showed that 78% of the respondents think that including immunity boosting ingredients in masala can be a great way of using immunity products in their day to day life and 19% were not sure about it.

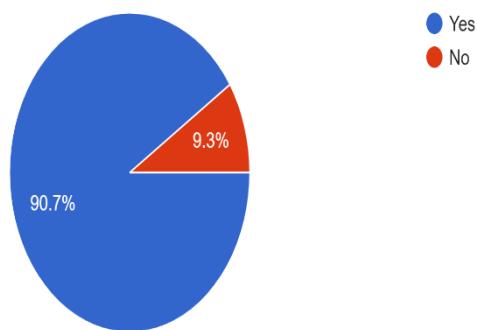
- **Do you think including natural immunity boosting ingredients in Indian spices can be a great way of using immunity boosting product in your day-to-day life?**



- **Do you find it difficult to include imr boosting products in your day-to-day life?**



- **Would you like to use a masala (Paste) which can satisfy your taste and immunity needs and is also pocket friendly at the same time?**



According to the survey results 90% of the respondents are ready to use a new immunity boosting masala (paste) which can also satisfy their taste buds and is pocket friendly at the same time.

Conclusions

In the current scenario people have become a lot more health conscious in which the demand for the immunity boosting products has increased significantly but there is a large no. of people who want to use these products but cannot afford to add expenses to their monthly budget.

Therefore, if they are offered a product which they are already purchasing on a monthly basis but is now introduced with a mix of immunity boosting ingredients then there is a huge possibility of them ending up buying that product.

On the basis of our research we can conclude that if such type of new product is developed which is satisfying these two basic needs of the consumers then it will have a huge demand and acceptance in the market.

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A Study of Marketing Strategy of Starbucks in Competitive Environment on Generation Z

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Abstract

Starbucks Corporation, an American company founded in 1971 in Seattle, WA, is a premier roaster, marketer and retailer of specialty coffee around world. In India, Starbucks joined Indian market in 2011 with Tata Coffee as a 50:50 joint venture company called as TATA Starbucks Private Limited. Currently they own a total of 176 outlets in 11 cities of India. The latest store came up at Lucknow, Uttar Pradesh. They have a total of 1200 plus employees in India as of 2016 according to Wikipedia and 3,46,000 employees worldwide with 31000 outlets.

India retail coffee chains market was valued at Rs 2,570 crore in 2018 and is expected to reach Rs 4540 crore by 2023. The market is ever-growing than ever in India with the entry of international coffee brands such as Starbucks in 2011 with a joint venture with the TATA group. The Indian coffee retail chain industry has a decent mix of international as well as majority Indian brands surging upwards in the market. The main objective of this research is to analyses how successful are marketing strategies of the Tata Starbucks compared to its competitors in India and to find whether their online marketing strategy is successful or not. Whether their campaigns are attracting potential customers and how Gen Z view Starbucks as a brand.

Keywords

Customer Experience, Marketing Strategies by Starbucks, PESTLE Analysis of Starbucks, Starbucks Business Model Canvas, Customer Delight.

The Objective of the research

- To find how successful are marketing strategies of the Tata Starbucks compared to its competitors in India.
- To find whether their online marketing strategy is successful or not.
- Whether their campaigns are attracting potential customers.
- How Gen Z view Starbucks as a brand.

In this research the method we will be use

Taking both quantitative and qualitative data.

- The qualitative data will be taken from various online portals and quantitative data will be taken by conducting a survey on Generation Z.
- The sample size of the survey will be 100 and the samples will be from various parts of India, that is, not from one particular region to keep the samples heterogenous in nature.
- All the samples will be taken randomly.
- There will be a total of 20 questions in the questionnaire.

Research design

- **Type of research:** Descriptive research
- **Sources of data:** Primary Data & Secondary Data
- **Primary Data -** Questionnaire
- **Secondary Data –** magazines, Websites, Journals
- **Data collection method:** Survey Method

- **Survey instrument:** Questionnaire , Online Questionnaire
- Sample size: 100
- **Sample unit:** People who visit coffee houses in India
- **Area of survey:** India
- **Sampling Method:** Random Sampling Method

Introduction

Coffee was introduced to India during the late seventeenth century. The story goes that an Indian pilgrim to Mecca – known as Baba Budan – smuggled seven beans back to India from Yemen in 1670 (it was illegal to take coffee seeds out of Arabia at the time) and planted them in the Chandragiri hills of Karnataka. The Dutch (who occupied much of India throughout the 17th century) helped spread the cultivation of coffee across the country, but it was with the arrival of the British Raj in the mid-nineteenth century that commercial coffee farming fully flourished. Initially Arabica was widespread, but huge infestations of coffee leaf rust led many farms to switch to Robusta or Arabica / Liberica hybrids. India is the world's sixth largest coffee producer, behind Brazil, Vietnam, Indonesia, Colombia and Ethiopia.

Key Facts

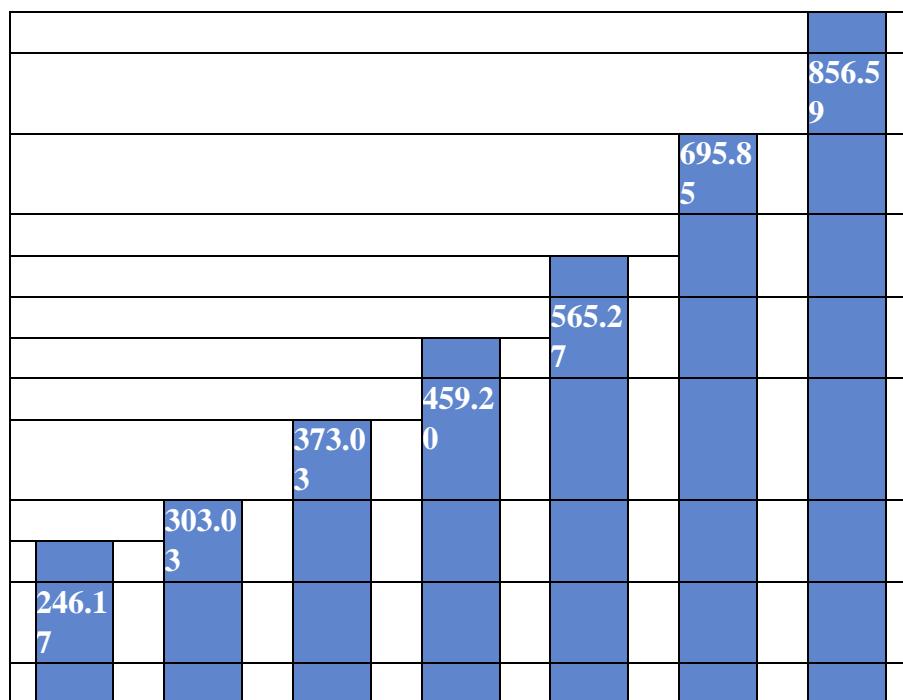
- India is the third-largest producer and exporter of coffee in Asia, and the sixth-largest producer and fifth-largest exporter of coffee in the world.
- The country accounts for 3.14% (2019–20) of the global coffee production.
- The coffee production stood at 299,300 million tonnes (MT) during 2019–20P.
- The coffee export from India stood at US\$ 738.90 million during 2019–20 and US\$ 120.83 million during April–May 2020.
- The total coffee export accounted for US\$ 315.08 million from April to August 2020 and for August 2020 it was US\$ 53.90 million*.
- Of the total coffee produced in India, 70% is exported and 30% is consumed domestically.

Indian Coffee Retail Chain Market

India retail coffee chains market was valued at USD 246.17 million in 2019 and is expected to grow further over the forecast period. Increasing global exposure, western culture, and penetration of established coffee brands are anticipated to be the key trend driving the growth of the India retail coffee chain market. The market is ever-growing than ever in India with the entry of international coffee brands such as Starbucks in 2012 with a joint venture with the TATA group. The Indian coffee retail chain industry has a decent mix of international as well as majority Indian brands surging upwards in the market. The Indian coffee retail brand Barista is also in the expansion with respect to its outlets and coffee shops along with some other retailers.

Year	Size (in Million)
2019	\$ 246.17
2020	\$ 303.03

2021	\$ 373.03
2022	\$ 459.20
2023	\$ 565.27
2024	\$ 695.85
2025	\$ 856.59



Regional Insights

The Southern Indian region is the largest market in the Indian Coffee Retail Chain Industry followed by the Northern region. The predominance of Coffee consumption in the Southern states has leveraged the market in the region to a greater extent.

Traditionally, coffee consumption in India has been primarily concentrated in the southern region. However, in the past couple of years, the demand for coffee is gaining popularity in other parts of India, including the urban cities. This is attributed to the increasing retail outlets, offering high-quality coffee to the growing consumer base of youth, and executive segments like corporate officials & businessmen, among others.

Literature Review

Starbucks originated in Seattle, Washington in 1971 and is known for its coffee. The company took something as basic as coffee and transformed it into something more. "It is a brand that is defined as much by attitude as it is by products. For devotees, the Starbucks experience is about more than a daily espresso infusion; it is about immersion in a politically correct, cultured refuge from everyday hassles" (Mc, Dowell, 1996, p.1).

The idea is to create a “third place” where consumers can go besides home and work, and where they can relax, listen to music and socialize. An urban sociologist, Ray Oldenburg, first termed “third places”: real-life sites that “host the regular, voluntary, informal and happily anticipated gatherings of individuals beyond the realms of home and work” (Marshall, 2015, p.1).

Starbucks creates an ambiance in which consumers perceive they can live. “They have gone out of their way to get their customers to live there, in the way of oversized couches and free Wi-Fi, the latter of which some eateries and cafes have rebelled against” (Tepper, 2013a, p.1).

The average Starbucks consumer frequents a Starbucks at least 18 times a month and 10% of those, tend to visit twice in a day. Due to Starbucks’ wide product variety, it attracts customers throughout the day, not just for coffee and tea, but other consumer packaged goods [CPGs] (oatmeal, sandwiches, parfaits, cake pops, bagels etc.) as well [Jennings, 2012].

In understanding the target market, knowing what customers look for (through purchase data as well as speaking to the consumer) and creating value for the consumer, Starbucks is able to create several strategies to entice customers. Brand self-connections, refers to the relationship between the brand and the consumer (Moore & Homer, 2008).

By figuring out what the consumers’ emotions and needs are, Starbucks is able to figure out ways in which to attract consumers. Starbucks offers consumer’s hot/strong tasting coffee along with a relaxing environment which creates memories for the consumers which can later be recalled (Dada, 2014; Hanft, 2005; Hartman, 2014 The Inside of the Starbucks Company,2016).

A consumer can tap into various emotions such as, bittersweet nostalgia and a safe refuge. It also taps into memories of the past which can also promote brand loyalty (Kaplan 1987; Snyder 1991).

A smart tactic Starbucks has is the reward loyalty card (My Starbucks Reward card). Consumers can buy a regular gift card and keep using that gift card and with that, can earn points, and finally receive a personalized Rewards card. The more the card was used, the more benefits and drinks can be earned. The Reward member status had even more perks (Starbucks Rewards, 2016).

Another promotion Starbucks came up with, was the treat receipt. Consumers can take the receipt from earlier that morning and would come back later that day to redeem the coupon to receive another iced drink (Starbucks Melody, 2015).

PRODUCT MANAGEMENT AND PRODUCT LIFE CYCLE

By using the Product Life Cycle curve, product management understands which products they are selling and are therefore able to determine their value. It is the product management's job to transmit these product traits to the customer in order to create value. At Starbucks the core product is a hot or cold beverage, the tangible product is tea or coffee, the augmented product is the tangible good in combination with the personalized friendly service and the potential product could be the evolution of the product portfolio towards other beverages such as alcoholic drinks. Represented on the PLC graph, Starbucks' products would look as follows:



While coffee sales are acquired and are at a maturity stage (could be considered as tuxedos products), Starbucks must still make an effort on the brand management for tea and discover a way to develop the evening alcohol sales. Starbucks product management can further determine two product categories: durable (mugs and souvenir objects) and non-durable (beverages sold). Trademarks play an important role in the protection of the "Starbucks culture", due to the copyrights and registered trademarks all the beverage names, images, logos, slogans, or websites common to the company cannot be copied by anyone else (Starbucks, 2014). This protects the environment and culture the company has and allows them to maintain their competitive advantage.

The products are the starting point to creating value for customers; if they are high quality products that are differentiated from other companies, the customer will remember this and forge his or her idea of the brand. Once these product attributes are determined, brand equity comes into place to communicate and confirm the company's values.

SITUATIONAL ANALYSIS

India and China are the world 's two fastest growing economies. Starbucks had already ventured into the Chinese market and not surprisingly, their Chinese venture turned out to be much profitable than that of their US business. Thus, they wanted to replicate their success of Chinese mainland in India. Also, the Indian market is heavily driven by the generation Z which is totally driven by the western trends. With the growing disposable income of Gen Z, people of Gen Z tend to spend more towards apparels and fast foods. With the success of Indian owned Café Coffee Day and Barista Coffee, it is a widely proven fact that there is lot of scope for the development of coffee café culture in India. Thus, Starbucks started capitalizing on this particular opportunity. They started by targeting the niche upper class segment by opening their outlets in TAJ Hotels and Resorts. Currently their primary target market is the younger generation of age 16-40years. They are also targeting the tourists who are visiting India. Since, most of the tourists coming to India are from the countries of U.S., England, Germany, and Japan who are well aware of Starbucks brand name. Thus, there is not a problem of brand name recognition among them.

STRATEGIC INTENT

Starbucks Corp. aimed India as its next major hub for development. Starbucks wanted to replicate the success they had in USA and more recently, in China. Surprisingly, their venture in India proved to be more profitable. Here in India, Starbucks entered into a deal with TATA Coffee Ltd, Asia's largest publicly traded coffee grower. This is, in particular, a non-binding agreement between two giants. They planned to combine the trust and legacy of TATA coffee with the iconic brand image of Starbucks to capture the market. And now they have the largest share in Indian Coffee Retail chain.

SWOT Analysis

Internal Factor Analysis Summary (IFAS)

<i>Internal Strategic Forces</i>	Weight	Rating	Weighted Score	Comments
Strengths				
S1 - Brand Visibility	0.15	5	0.75	<i>International popularity of the Starbucks Brand.</i>
S2 - Ethical and Environmental Practices	0.1	3	0.3	
S3 – Marketing Skills	0.1	3	0.3	
S4 – Access to High Quality Arabica Coffee	0.15	4	0.6	<i>Sourcing Agreement.</i>
S5 – JV with Tata Coffee	0.15	4	0.6	<i>Tata as a cultural fit for Starbucks will help in building core competencies of each other.</i>
Weakness				
W1 - Image of luxury coffee outlets	0.1	4	0.4	
W2 – Premium Pricing Policies	0.05	2	0.1	<i>High price of coffee is felt as a barrier as per capita income is low in India.</i>
W3 – Coffee Dominant Business	0.1	3	0.3	<i>Need to diversify.</i>
W4 – Rigid Standards and Policies at Outlets	0.05	3	0.15	<i>They apply the same business models and formulas, regardless of culture and values of the country.</i>
W5 – May affect JV between Tata Coffee and Barista	0.05	2	0.1	<i>Tata Coffee also has a JV with Barista.</i>
TOTAL SCORES	1		3.6	

External Factor Analysis Summary (EFAS)

<i>External Strategic Forces</i>	Weight	Rating	Weighted Score	Comments
Opportunities				
O1 – India Huge Market	0.15	4	0.6	<i>India is the second most populated country in the world.</i>
O2 – English Speaking Market	0.08	3	0.24	
O3 – Increasing Spending Power	0.15	4	0.6	
O4 – Young Population	0.07	4	0.28	<i>Younger generation is more prone to visit cafes.</i>
O5 – Out-of-home Coffee Drinking Culture catching	0.05	3	0.15	<i>Rating for coffee outside home is better than tea outside home, specifically in the North</i>
O6 – Favorable Cost of Labour	0.05	2	0.1	
O7 – Favorable Infrastructure and Cost	0.05	3	0.15	
O8 – Skilled Manpower Availability	0.02	3	0.06	
O9 – Opportunity to cater Tea Drinking Segment	0.03	2	0.06	
Threats				
T1 – Tea Drinking Country	0.08	4	0.32	<i>Most of the Indians consumed tea at least twice a day, in the morning and in the afternoon.</i>
T2 – Competition from Homegrown	0.1	3	0.3	<i>Coffee Café Day (CCD) pioneered the concept of specialty coffee in India followed</i>

Brands				<i>by Qwiky's and Barista Coffee.</i>
T3 – Low Per Capita Income	0.05	3	0.15	<i>Immense need to offer products at locally competitive price.</i>
T4 – Health Consciousness	0.02	3	0.06	<i>Campaign worldwide against the high-calorie and high fat products that Starbucks sells.</i>
T5 – Rare habit of Visiting Cafes	0.02	3	0.06	
T6 – Competition from Other Fast Food Chains	0.03	3	0.09	<i>McDonalds, Dunkin Donuts, Burger King, etc already have the infrastructure in place and are instead adding quality coffee to their market.</i>
T7 – Rising Prices of Coffee	0.05	4	0.2	<i>Rising prices of coffee are putting pressure on the profit margins of the company.</i>
Total	1		3.4	
	1		2	

Strengths

- High Brand Visibility. (International popularity of the Starbucks brand.)
- Ethical and Environmental Practices.
- Superb Marketing and positioning skills of Starbucks.
- Tata as a cultural fit for Starbucks will help in building core competencies of each other. (Tata has met all the stringent standards and conditions followed by Starbucks such as quality, soil, water, pest, waste and energy management, forest and biodiversity conservation to workers' welfare, wages and benefits, living conditions, health, safety, etc.)

Weaknesses

- Image of luxury coffee outlets.
- High price of coffee is felt as a barrier in the South and the North. (Starbucks products were priced at a premium and the per capita income in India is lower compared to other markets where it is already present, there is immense need to offer products at locally competitive price.)
- Coffee dominant business. (Need to diversify)
- The entry of Starbucks is aimed at the out-of-home coffee consumption market and this may affect the alliance of Tata Coffee with Barista.
- Opportunities

- India is the second most populated country in the world. Huge Market.
- Growing Middle Class and increasing spending power of Indian Population.

Young Population (Consumers in the age group of 20–45 years were emerging as the fastest growing consumer group and the average age of an Indian in 2020 would be 29 years, compared to 37 years in China and the United States, 45 years in Western Europe, and 48 years in Japan. Younger generation is more prone to visit cafes as per a research).

Rating for coffee outside home is better than tea outside home, specifically in the North and the East. (The people in southern states of India largely consume coffee. The people in the northern states are generally not coffee drinkers, but drink coffee and experiment with various flavours as a fashion statement.)

Threats

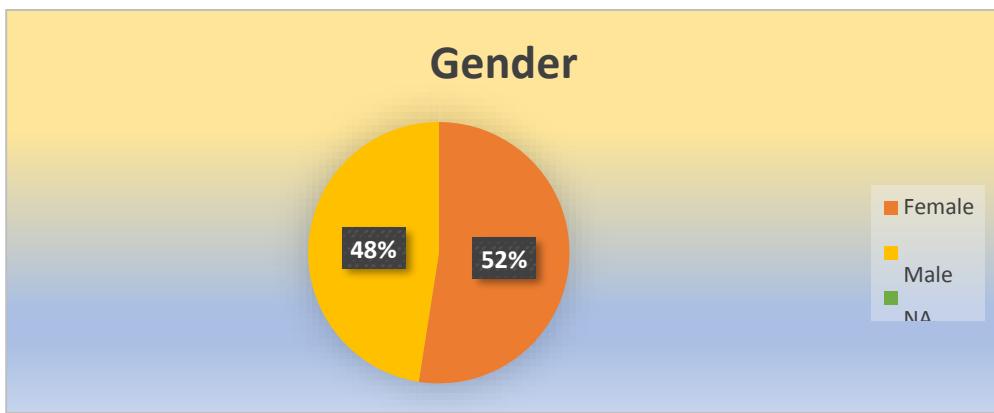
- India is a tea-based culture. (The Indian hot-beverage market is dominated by tea. India was the largest producer and consumer of tea in the world and accounted for 29% of the total production and over 20% of the total consumption globally.⁶⁰ Most of the Indians consumed tea at least twice a day, in the morning and in the afternoon.)
- Lower per capita income in India. High price of coffee is felt as a barrier in the South and the North. (Starbucks products were priced at a premium and the per capita income in India is lower compared to other markets where it is already present, there is immense need to offer products at locally competitive price.)
- Increasing Health Consciousness among consumers. (The increasing rate of obesity and obesity related diseases such as diabetes, high blood pressure, and heart diseases in India. Starbucks was said to have been on the target of many consumer health groups worldwide who planned to campaign against the high-calorie and high fat products that Starbucks sold and which could lead to increased obesity risk, heart diseases, and cancer.)
- Other fast food chains like that of McDonalds, Dunkin Donuts, Burger King, etc., already have the infrastructure in place and are instead adding quality coffee to their menus to compete with Starbucks.
- Rising prices of coffee are putting pressure on the profit margins of the company.

Research Findings

This study involves a survey of 100 respondents across India focusing only Gen Z. The survey had a total of 20 questions from a basic question about Gender to what suggestions they have for Tata Starbucks to improve their marketing strategies. And whether their present Business model is targeting Gen Z to generate revenues

Gender

Row Level	Frequency
Female	52
Male	48
Grand Total	100



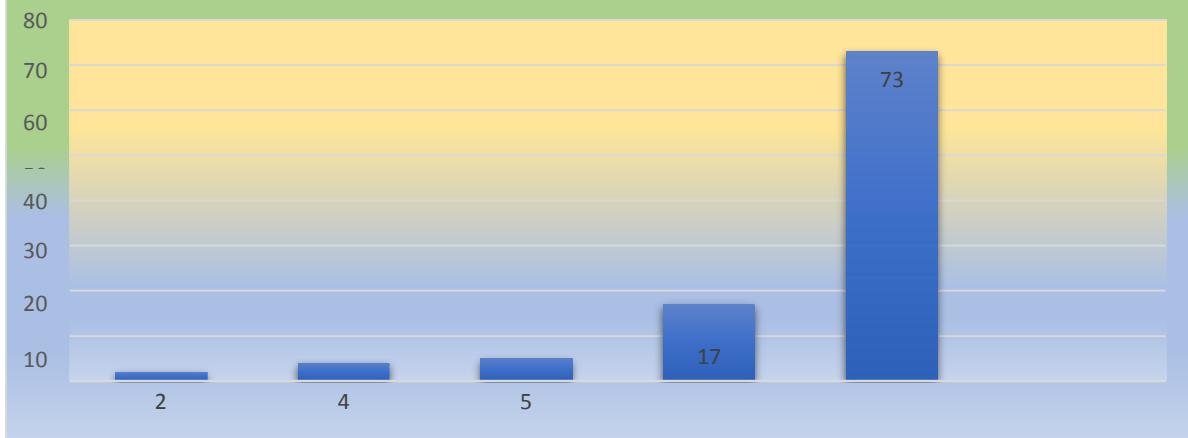
Findings:

52% of the Total population of the survey were Female.
And the rest 48% were Male.

Occupation

Row Level	Frequency
Business	2
Housewife	4
Other	5
Service	17
Student	72
Grand Total	100

Occupation



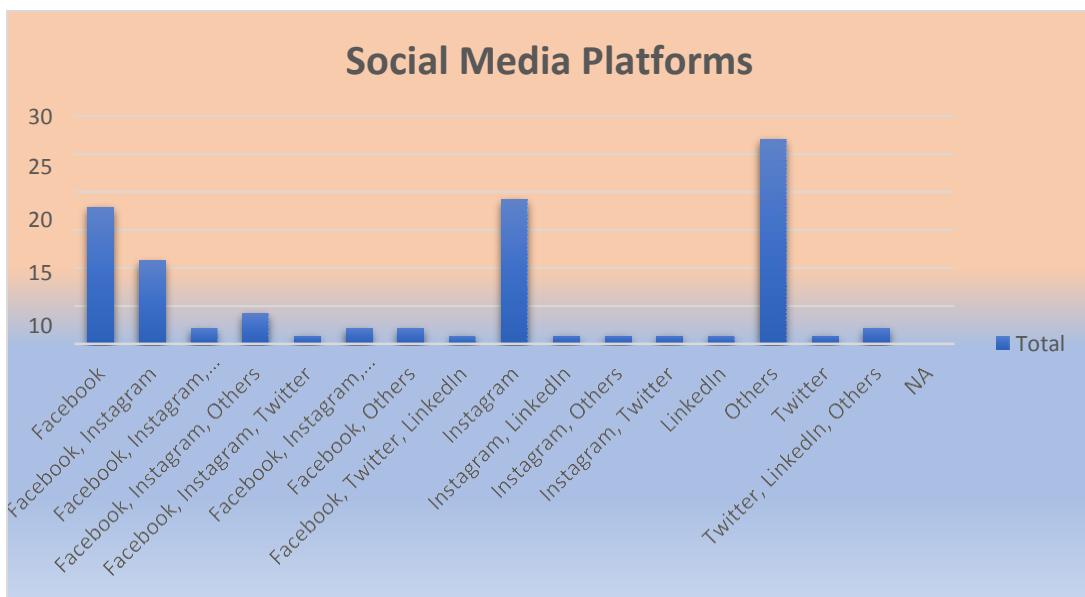
Findings:

72% of the total population of the survey were Students.
17% were working in service sector.
5% were in others
4% were others.

And the remaining 2% had their own Businesses.

Social Media Platforms

Row Level	Frequency
Facebook	18
Facebook, Instagram	11
Facebook, Instagram, LinkedIn	2
Facebook, Instagram, Others	4
Facebook, Instagram, Twitter	1
Facebook, Instagram, Twitter, Others	2
Facebook, Others	2
Facebook, Twitter, LinkedIn	1
Instagram	19
Instagram, LinkedIn	1
Instagram, Others	1
Instagram, Twitter	1
LinkedIn	1
Others	27
Twitter	1
Twitter, LinkedIn, Others	8
Grand Total	100



Findings:

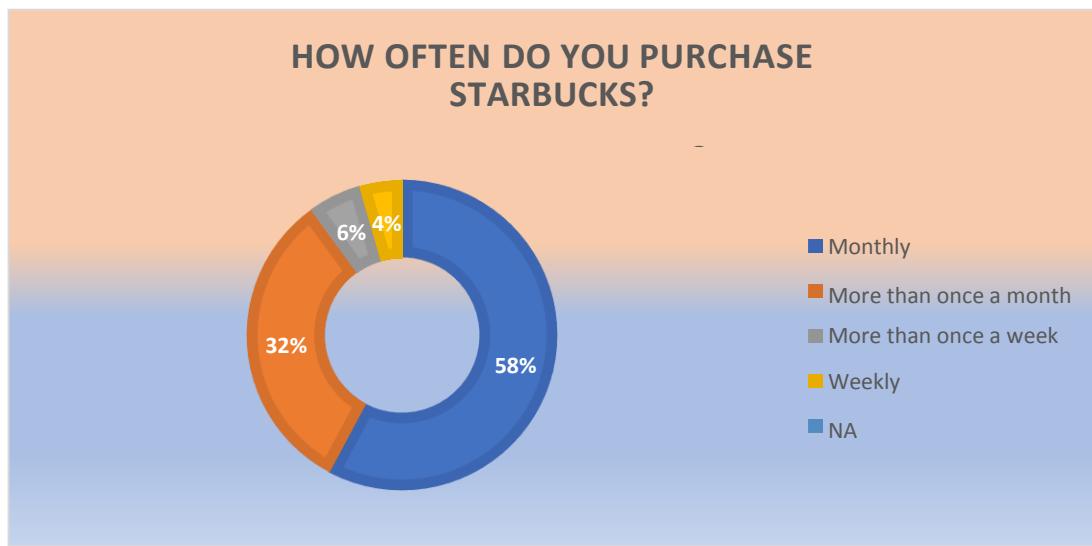
- 18% were following Starbucks in Facebook and were frequently checking

their posts.

- 19% were following Starbucks in Instagram and were frequently checking their posts.
- 11% were following Starbucks in Instagram and Facebook which are most trending Social media platforms and were frequently checking their posts in both the platforms.
- 27% were following them in Others (Not following in any of the social media platforms) .
- 6% were not following Starbucks in any of the Social media Platforms.
- And the remaining 19% were following Starbucks in all of the Social platforms or either of them.

How often do you purchase Starbucks Coffee Products?

Particulars	Frequency
Monthly	57
More than once a month	34
More than once a week	5
Weekly	4
Grand Total	100



Findings:

- 57% people going to Starbucks monthly.
- 34% people going to Starbucks more than once a month.
- 5% people going to Starbucks more than once a week.
- 4% people going to Starbucks weekly.

Influenced to purchase a Starbucks product because of an advert	
Particular	Frequenc
No	49
Yes	51
Total	100

Conclusion

Even as an industry leader, Starbucks faces strategic challenges to overcome in order to sustain its competitive advantage. The main challenges Starbucks is currently facing include issues related to expansion, responding to competition in the industry, and creating innovative ways to remain an industry leader and especially COVID-19 – 19 pandemics.

Starbucks must find ways to be responsive and flexible when conducting business in India. When Starbucks began operating in India, it did so through a joint venture with Tata Pvt Limited. This allowed Starbucks to gain a better understanding of the Indian cultural preferences. With a total population of 472 million of Gen Z, there is opportunity for different strategies, their store proposes high quality coffee for consumers and fresh, creative beverages for the younger age while conserving the premium brand image. Starbucks does not only sell beverages, but also a social image because most consumers want to be associated with this brand which is perceived as a high quality upper-middle class location.

Although Starbucks has gone through large expansive efforts and has increased their total number of outlets in India to 176, one segment that is still proving to be difficult to gain acceptance in India is lower-middle class segment. A large part of this challenge is that most of the people of Generation Z belong from this segment and think that Starbucks is expensive and find their competitors more affordable. As a result of this challenges Starbucks lags behind in profit growth and Sales growth.

On the whole even though their footprint in India is limited that is no excuse for having a soft social media presence. They need to be more forthcoming in addressing negative queries and also help customers in their queries by simplifying information access on their page.

While Starbucks can be criticized for expanding too rapidly and harming local cultures by transforming them into an American experience, it is loved by most consumers. In the future, Starbucks should continue expanding their product portfolio more focused on middle class segment and closely follow

new technological trends as their target population has this expectation. With an increasing number of customers, Starbucks must be well organised and pursue their individual client approach which makes their brand so unique and makes the customers come back regularly. Overall, however, Starbucks is very successful in doing this and has constantly increasing profits yearly

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Predictive Analysis on Future of Rare Earth Elements

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Abstract

A set of 17 chemical elements which includes 15 elements from lanthanide series plus scandium and yttrium. These metals have similar properties and are often found together in geological deposits. They are often referred as “rare earth oxides” because most of them are sold as oxide compounds.

Computer memory, DVD, rechargeable batteries, cell phones, magnets and much more. However, there has been an exponential increase of these elements because of demand of sophisticated technologies both for civilian purposes.

Introduction Electric or hybrid vehicles has accelerated its demand as the technology is shifting from oil, natural gas and nuclear energy to renewable energy for a sustainable and clean environment.

For defense, they play an important role in advanced defense equipment such as in night vision goggles, guidance system in missiles and laser guided weapons, armored vehicles, GPS and communications equipment, cruise missiles and many more.

NASA administrator, Jim Bridenstine said on Apollo 11, 50th anniversary said to CNBC that “harvesting rare earth from moon can be possible in this century only”. Extensive research by NASA, ISRO “Mangalyaan 2” mission on moon states that moon has enormous mineral resources and that is why in-depth research and exploration on moon has paced in the past few years.

Focus is mainly on reserves of countries and their potentials to extract these minerals for their domestic use as well as being a strategic player in the global supply chain market.

As the current scenario unfolds, it depicts that China controls 85%-95% of rare earth supply in the global supply market. USA being the biggest importer of rare earth elements, as they import about 80% of the rare earth elements because industries in USA have heavily invested in technologies and major players like Apple, Google, Microsoft, Amazon, Tesla and many more use these metals for commercial purposes. Lockheed Martin, Boeing and others rely heavily on these minerals for their state-of-the-art technologies.

Trade war between USA and China started after 2016 presidential elections, with Donald Trump coming to power and trying to balance the trade deficit which USA has with China. China seeing American and European continent as a lucrative market in technologies is using its dominance on the rare earth metals as a bargaining ticket to try to make a deal with USA which being favourable to them. But the dynamics changed after the surfacing of COVID-19 in December, 2019 last year and formation of QUAD Group (India, Japan, Australia and United States of America) to end China's monopoly in the market. The aggressive behavior of Chinese has been changed countries perception towards china. China accounts for about 80% to 85% of worlds total rare earth production. China is home to about 30% of the total global rare earth reserves. China is being the leading player in this market since 1990, largely because of two factors: its state backed investment on technology and infra-structure and low-prices.

Prior to that USA was a leading player in the rare earth market with most of its production coming from Mountain pass mine in California. However, China's output began to meet the global supply and that to at lower prices made USA to shutdown it's production as they were not able to compete with them at lower price point production. By 2000, China nearly dominated the rare earth production markets. Chinese used industrial policy in 1980s to develop and gain expertise in the extraction, separation and refinement of the rare earths. The Chinese industrial policy is based on USA approach on 1950s and 1960s to develop its industry.

Different pricing techniques has given Chinese domestic industry an edge over the over its foreign buyers. Substantial and exploitable deposits of rare earth found in other parts of the world are North America, Australia, Central Asia, Southeast Asia and Sub-Saharan Africa. China control on prices is making it difficult for others to compete as well as challenges are there while opening new mining sites, i.e., low prices, high environmental cost and post processing after mining and even radiations from these minerals.

China and US rivalry for domination on Asia-Pacific market is giving countries like India, Australia, Russia and others the opportunity to enter the market of rare earth minerals to reduce China's monopoly in the global supply market.

APAC Countries has the potential to lead in this segment and to maintain their dominace over the markets the chinese are using debt trap,i.e., giving countries money at high interest rates and then controlling their policies.

The Belt And Road initiatve (BRI) and silk route is to keep India in check and not allow them to flex their muscles.

Asia Pacific region has the potential to develop its rare earth metals production but due to low prices offered in market by chinese and no adequate infrastructure being developed leads to China leading the market. As the Asia-Pacific region in mineral resources due to its geographic conditions.

Rare earth metals production was on rise in 2019, jumping to 210,000 metric tonnes (MT) from 190,000 metric tonnes (MT) the previous year.

A dark horse in the rare earth metals market is North Korea as it has been estimated that they have mineral wealths about trillions of dollars.

Countries by reserves capacity (in million MT) are: India (6.9), China (44), Russia (12), Australia (3.4), Brazil (22), Vietnam (22), United States (1.4).

Countries by production capacity (in metric tonnes "MT") are: China (132,000), United States (26,000), Myanmar (22,000), Australia (21,000), India (3,000), Russia (2,700), Madagascar (2,000), Thailand (1,800), Brazil (1,000), Vietnam (900).

Research paper focus on Rare earth industry, Uses of these materials, Production and Reserves of countries, Future market growth, India's potential in this industry and China's monopoly.

Relevance of the paper how it will shape our future and an alternative for oil and natural gas.

Keywords

Renewable energy, China, QUAD Group, NorthKorea, US China cold war, Asia-Pacific Region

Introduction

Rare earth metals (hereafter rem) a group of 17 elements in the periodic table consisting of 15 lanthanides elements along with Scandium and Yttrium as mentioned by International Union of Pure and Applied Chemistry (IUPAC). They have similar chemical properties, but different chemical and magnetic properties. The metals are found together in geological deposits and are typically found in ores form.

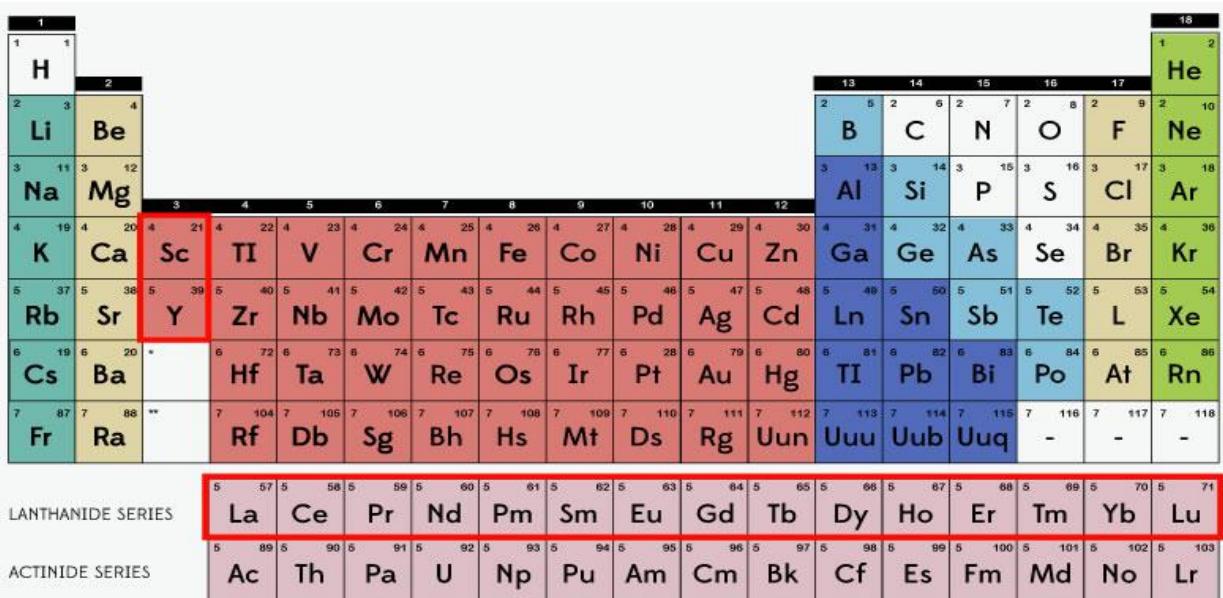


FIG 1. PERIODIC TABLE

<http://tmrcorp.com/ree/>

Objective

- India's potential in the market
 - China monopoly in the market
 - Market growth
 - Producers and suppliers other than china

USES

Electronics – baggage scanners, tv screens, cellphones, camera lenses

Renewable energy – hybrid automobiles, rechargeable batteries, wind turbines

Technology – lasers, fiber optics, radar devices, computer chips, nuclear batteries

Medical – x-ray tubes and machines, MRI contrast agents, medical and dental lasers

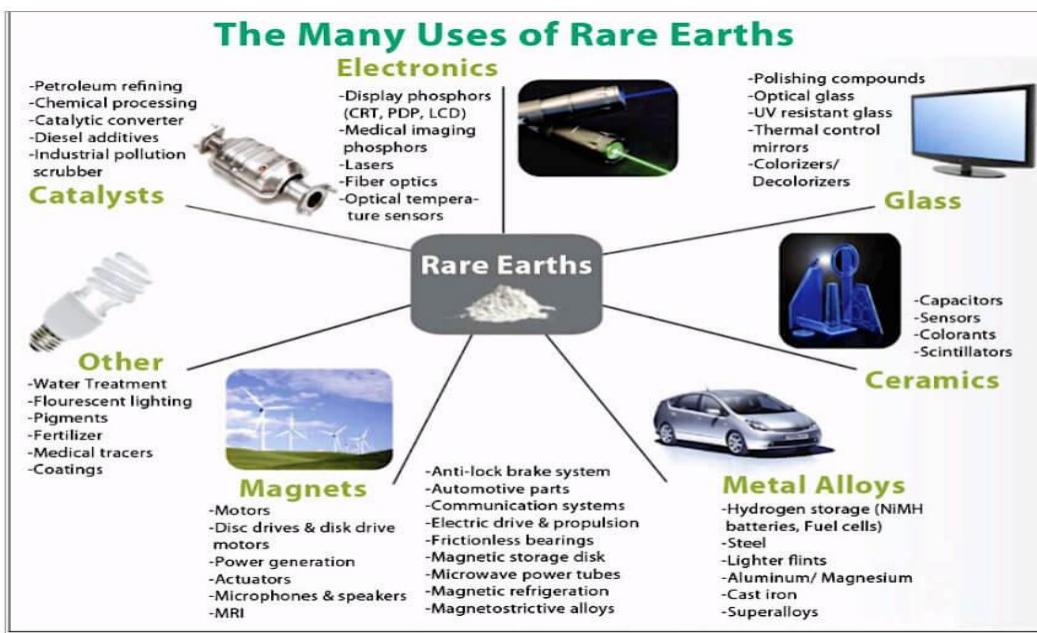


FIG 2. USES OF RARE EARTH METALS

<https://www.semanticscholar.org/paper/China's-Rare-Earth-Industry-and-Export-Regime%3A-and-Morrison-Tang/c6f12db2243c8e96db070ffc3c0c03af0e163e36>

Importance in today's world

As we are in a technological age, where everyday life is dependent on items made from these elements. The constant demand of clean and green energy, electric vehicles, high performance electronic devices which helps in the smooth running of environment. But the production mainly controlled by china, about 97% has created a diplomatic divide between countries and companies as tech companies, being from any sector depends on these metals for their products. China being the center of it use it as a leverage for its own market gains.

During 2010 china reduced export by 40% which lead to a sharp increase in price outside china as demand being low and tech companies fighting among themselves to gain market share with their new innovative products has caused disputes in the past.

Countries with reserves

According to estimates by U.S. Geological Survey, the worldwide reserves is approximately 120 million metric tons. Most of the reserves are located in china, estimated to some 44 million with Brazil (22 million), Vietnam (22 million), Russia (12 million), India (6.9 million), Australia (3.3 million), USA (1.4 million), Greenland (1.5 million), Canada (8.3 million), South Africa (7.9 million), Tanzania (8.9 million) and other countries (3.1 million).

Reserves are measured in million metric tons.



FIG 3. RESERVES BY COUNTRY

[Shttps://www.theborneopost.com/2019/05/30/rare-earths-the-latest-weapon-in-the-us-china-trade-war/](https://www.theborneopost.com/2019/05/30/rare-earths-the-latest-weapon-in-the-us-china-trade-war/)

Global supply chain

China controls about 80% of the supply in the market and to that creates a monopoly in the market by reducing the supply during 2009 to 2011 to cause a shortage of supply and increase in demand in market thus increasing the price and making profit, in defense China states that it did that as it wants to control the growing environmental issues in their own country. Major deposits of rare earth in china are in Inner Mongolia (83%), while other deposits include Shandong (8%) and Sichuan (3%) provinces. Other 3% includes areas such as Jiangxi and Guangdong, while other 3% are located in other parts of china.

China became a rare earth hub during 1980s when former Chinese leader Den Xiaoping said in 1992 that “the Middle East has oil, China has rare earths” and under his leadership China’s dream of becoming a global superpower is becoming a reality, because he started the technological projects and many more like that to make China a prominent player in the global supply market.

China because of its low cost of production became a leader in the market by offering many subsidies to the home corporations and ban foreign companies. Over the years as China tightened its control on the market, US surrendered to it. Thus allowing China to gain control over the market.



FIG 4. CHINA'S MINNING REGIONS

<https://www.semanticscholar.org/paper/China's-Rare-Earth-Industry-and-Export-Regime%3A-and-Morrison-Tang/c6f12db2243c8e96db070ffc3c0c03af0e163e36/figure/6>



FIG 4.1 CHINA'S RARE EARTH REGIONS AND AREAS

<https://smallcaps.com.au/rare-earth-stocks-asx-ultimate-guide/>

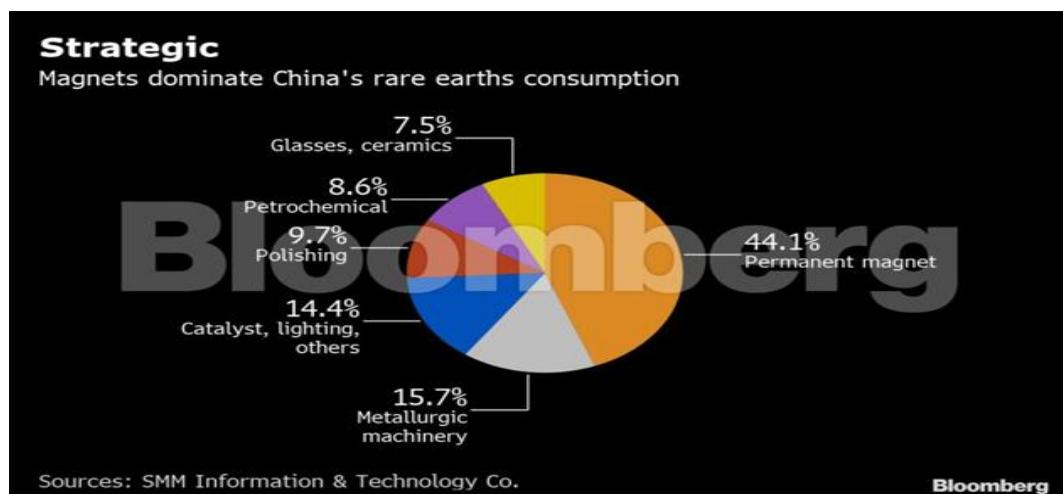


FIG 5 PRODUCTION BY USES

<https://economictimes.indiatimes.com/news/international/world-news/how-china-overpowered-the-us-to-win-the-battle-for-rare-earths/articleshow/69736530.cms?from=mdr>

Loosening Grip

China dominates rare earths mining, but new projects are being assessed globally

● Carbonatite ● Peralkaline igneous ● Heavy-mineral sands ● Clays ● Other
 Exploration projects Active mines



Source: United States Geological Survey

Note: Exploration projects are being evaluated to determine if they are economic to develop

Bloomberg

FIG 6. MINNING BY COUNTRIES

<https://economictimes.indiatimes.com/news/international/world-news/how-china-overpowered-the-us-to-win-the-battle-for-rare-earths/articleshow/69736530.cms?from=mdr>

ENVIRONMENTAL EFFECTS

There are huge implications of rare earth elements in terms of toxic pollution. They are often emit extensive carbon emissions into the atmosphere and to the ground. Metals like mercury, lead, cadmium, chromium and barium which are extensively dangerous to the environment. Survey by United Nations University (UNU) and World Health Organization (WHO) on child health, raised concerns around chemical burns, cancer and stunted growth. Their eradication is costly and difficult. Agriculture and crops are also affected by them as regular mining decreases soil strength and cause landslides. Intense mining activities such as cutting, drilling, blasting, processing can release dust containing rare earth metals in air, impacting waterbodies, vegetation, wildlife and humans.

CONCLUSION

As trade war between China and U.S. intensifies and U.S. clampdown on top Chinese tech companies for data theft and espionage. China has used rare earth elements as a weapon of choice to keep Trump administration under check, with Chinese state media hinted that Beijing may cut the supply of these elements which are widely used in electric cars and mobile phones. This is where U.S. has been in back-foot as their own mining production was stopped. But since there has been change in administration U.S. after the 2020 presidential election, one needs to have a hawk-eye view about what current administration will do till 3rd week of January, 2021 because there is a power transfer and how will the new administration will approach to the trade war which was started by Trump administration.

India being a close ally of U.S. has to use its diplomatic pool of knowledge to see how they can benefit from the trade if it continues. QUAD group by U.S., Japan, India, Australia is formed to keep China under check from dominating in the rare earth markets.

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Engagement with social media and Social Media Advertising: The Differentiating Role of Platform Type in Indian context

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Abstract

"Digital engagement is key to us" has now become a vague term as it now means duplication of product. Being on a digital platform simply means a strong familiarity with likes, shares, followers, comments, downloads as these are the principles that drive all sorts of social media platforms around. "Adidas" recently admitted that; the company will now rely on their social media and manage to engage as many customers as possible by increasing their level of engagement.

Growth between engagement metrics is often thought to be based on the old performance of ads. Growth depends largely on the number of clicks and engagements that can be positive or negative. Most of the time, on social media, content does not play a very important role but the middle ad does and affects effective performance.

With this in mind, the sample size of 75 and age from (20+) is reported to depend on social media platforms such as Instagram, Facebook, Twitter, Snapchat, LinkedIn, etc. it varies from platform to platform depending on the experience the user's experience. Therefore, each platform has its own ad engagement group that is directly proportional to the amount of advertising. This clarifies how social media engagement is related to advertising testing, which is directly related to the line without the word "social media".

The ultimate motto of this research is to define the whole difference between social media platforms and social media marketing. However, to explore this relationship, we first need to understand consumer engagement and the media that preserves the Indian context.

It is estimated that India has been in the top 05 countries with the highest numbers of social media account holders and account users.

Keywords:

Social Media Platform, Social Media Marketing, Customer Engagement

Introduction

Enhancing the perspective on social media engagement and the consequences of advertisement entrenched in social platforms, adoption of "engagement experience framework" comes into action. The engagement experience framework has been split into three characteristics (Calder, Isaac, and Malthouse 2016):

- **Engagement literature**
(Consumer-media interaction)

➤ **Intensity of engagement**

(Magnitude of social media/advertising either positive or negative)

➤ **Advertising effectiveness**

(Predictiveness level of advertising)

Through these three characteristics, the aspect becomes more crystal clear which has helped in-depth knowledge to gain a different perspective. The qualitative approach has been more specific which has given such unique results and upshots. An advance acquaintance is accomplished through the ratio between social media and advertisements on these platforms.

This also helps in acknowledging the brands which segment of social media is to be targeted and would be beneficial for substantiating decisions about which messages to advertise on the designated platform. The whole process consists of four contributions.

- a) Increasing digital engagement concerning social media platforms. Social media platforms are numerous but the most targeted are these top

06 Indian platform:

- | | |
|---------------|--------------|
| i. Facebook | iv. Snapchat |
| ii. Instagram | v. Twitter |
| iii. LinkedIn | vi. YouTube |

b) One works with the best experience in the context of digital platforms. Although every platform has its own specific information that makes it baseless.

c) Analyze engagement and advertising on these platforms to show whether this is an important variation in learning how advertising on social media works.

d) Finally, I compare the different levels of social media engagement on both social media and ads on the eight platforms above.

There are various ways to change the way you analyze it but the "single source method" is the most important. With direct comparisons, every customer (20+) was asked for their engagement experience between all these one-way testing platforms.

Literature Review

Conceptualization of Engagement

The effectiveness of advertising and media engagement literature and perhaps worked in a "participatory manner". This approach can directly predict ad performance (Davis Mersey, Malthouse, and Calder 2010). "The creation of multi-levels, multidimensional ideas, and feelings about one or more rich experiences involved in achieving a private goal" Consider inclusion when moral strength or media use is considered for learning, liking, stocks, etc. It is very different from the others. Getting quality information from them is important. in the case of Calder, Isaac, and Malthouse (2016) that the

driver of the all-inclusive effect informed social media. It has also been proven that the context has been defined as a result of the advertising space given to the car we were carrying: the central context.

Social media marketing engagement is a complete experience that people use consuming these various categories. When people use these platforms the experience levels are different and as a result, it helps us to understand the robustness of all of these methods.

Engagement across Social Media Platforms

Social media use is a variety of forms that start from being educational, communicative, travel, or overtime. People tend to use these platforms to engage themselves and give their interest and the way it manages for the consumer to win. In this day and age, social media is clearly portrayed as a complex of online applications that use technology and human intelligence at the expense of WEB 2.0, as the details of this program can be shared and distributed all the time (Kaplan and Haenlein). Speaking of high-quality social media use:

- i. Facebook: a social network
- ii. Snapchat: an instant photo messaging application),
- iii. Instagram: a photo-sharing application),
- iv. Twitter: a microblogging application),
- v. LinkedIn: a business- and employment-oriented social networking service),
- vi. YouTube: a video network

Although there are several variations in this whole app, it offers a wide range of ads. Obviously, ads also look different from these sites

This clearly highlights the differences in each platform in terms of its expertise. Therefore, "involvement varies across all domains, product categories, and products".

Research Objective

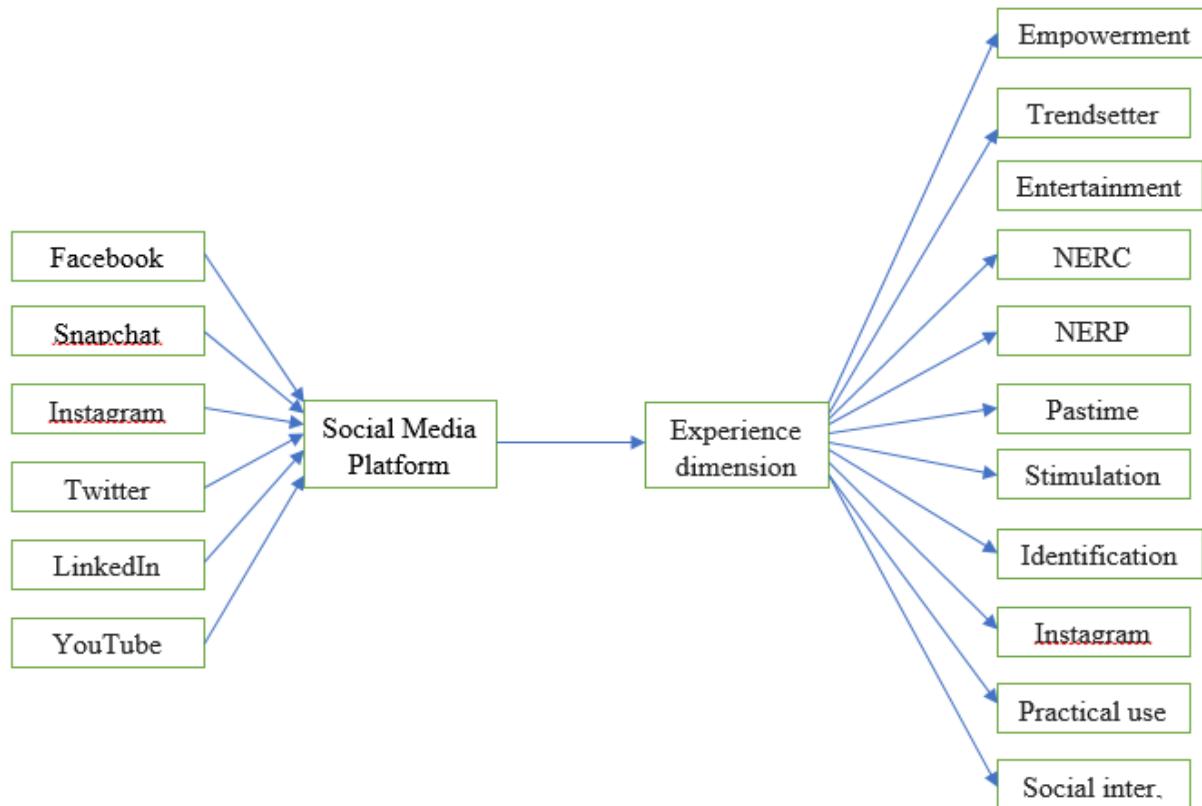
To determine whether the Engagement experiences of the customer will differ according to different social media platforms

Theoretical Model

IV: Social media platform – (Facebook, Snapchat, Instagram, Twitter, LinkedIn, YouTube)

DV: Engagement experience – (Experience dimension: Entertainment, Negative emotions related to the content, Negative emotions related to the platform, Pastime, Stimulation, Identification, Practical use, Social interaction, Innovation/trendsetter, Topicality, and Empowerment)

Conceptual Diagram



Hypothesis Development

Social media is open to ads. It offers a variety of functions including advertising. Community engagement can be seen as an important aspect of the context in which responses are advertised (Calder, Malthouse, and Schaedel 2009). The more consumer engagement on these platforms, the more information about ad engagement. To conclude this, a third view replaces:

H₀: There is no significant influence of social media platform (FACEBOOK) on experiencing dimension (Entertainment, Negative emotions related to the content, Negative emotions related to the platform, Pastime, Stimulation, Identification, Practical use, Social interaction, Innovation/trendsetter, Topicality, and Empowerment)

H₀: There is no significant influence of social media platform (INSTAGRAM) on experiencing dimension (Entertainment, Negative emotions related to the content, Negative emotions related to the platform, Pastime, Stimulation, Identification, Practical use, Social interaction, Innovation/trendsetter, Topicality, and Empowerment)

H₀: There is no significant influence of social media platform (SNAPCHAT) on experiencing dimension (Entertainment, Negative emotions related to the content, Negative emotions related to the platform, Pastime, Stimulation, Identification, Practical use, Social interaction, Innovation/trendsetter, Topicality, and Empowerment)

H₀: There is no significant influence of social media platform (TWITTER) on experiencing dimension (Entertainment, Negative emotions related to the content, Negative emotions related to the platform, Pastime, Stimulation, Identification, Practical use, Social interaction, Innovation/trendsetter, Topicality, and Empowerment)

H₀: There is no significant influence of social media platform (YOUTUBE) on experiencing dimension (Entertainment, Negative emotions related to the content, Negative emotions related to the platform, Pastime, Stimulation, Identification, Practical use, Social interaction, Innovation/trendsetter, Topicality, and Empowerment)

H₀: There is no significant influence of social media platform (LINKEDIN) on experiencing dimension (Entertainment, Negative emotions related to the content, Negative emotions related to the platform, Pastime, Stimulation, Identification, Practical use, Social interaction, Innovation/trendsetter, Topicality, and Empowerment)

RESEARCH METHODOLOGY

Instrument development

The researcher used the descriptive research design, this study looks at 06 social media to measure the impact on consumer experience (Scope of experience: Entertainment, negative emotions related to the content, negative emotions related to the platform, Recreation, Motivation, Identification, Active Use, Social Networking, i / trendsetter, Topicality, and Empowerment). The scheduled questionnaire was accepted at (Calder, Isaac, and Malthouse 2016) rating using the Likert scale 05. To understand it better, a set of used items is in the table below. Social media advertising testing is based on ratings on the 05-pointer Likert scales including a strong confession of total disagreement.

Data Collection

The researcher prepared Google to compile a questionnaire and distributed it by post, a questionnaire Setting queries based on the total number of platforms.

Considering, it took 10 -15 minutes to complete the form as it all depends on the top platforms with their own experience. By using one method, they were compared to the level of involvement.

Sampling

The study used a simple and easy-to-use process in which all respondents were asked to have heard the entire social media platform before proceeding with the response.

According to a requirement based on the researcher, 1:10 law thump distributed a list of questions to 100 people among the 075 answers obtained after the final data purification process with the research support of the literature holding this sample size is sufficient to conclude.

Data interpretation

To get the data from the responses, I have used **MANOVA ANALYSIS**. Multivariate analysis of variance (MANOVA) is simply an ANOVA with several dependent variables. MANOVA analysis is used to find the difference between two or more vectors.

SPSS Statistics Output of the One-Way MANOVA

In this, only the main tables are required to get the results from the one-way MANOVA and Tukey post-hoc tests.

Between-Subjects Factors

	Value	N
	Label	
1.00	LinkedIn	75
2.00	Twitter	75
Platfor m	3.00 Snapchat	75
	4.00 YouTube	75
	5.00 Instagram	75
	6.00 Facebook	75

Descriptive Statistics

This table provides the mean and standard deviation for the two different dependent variables, which have been split by the independent variable.

Descriptive Statistics		Platform	Mean	Std. Deviation	N
ENT	LinkedIn	2.8578	1.02179	75	
	Twitter	2.8378	1.17882	75	
	Snapchat	2.7067	1.13133	75	
	YouTube	3.7200	.93005	75	
	Instagram	3.3311	1.09582	75	
	Facebook	3.2333	1.03250	75	
	Total	3.1144	1.11858	450	
NEG_EMO	LinkedIn	2.9533	.93242	75	
	Twitter	3.1567	1.11711	75	
	Snapchat	2.6900	1.09501	75	
	YouTube	3.3700	.95362	75	
	Instagram	3.2400	1.11912	75	
	Facebook	3.4867	.91431	75	
	Total	3.1494	1.05396	450	
PAS_TIME	LinkedIn	2.9067	1.24307	75	
	Twitter	3.0000	1.40463	75	

	Snapchat	2.7733	1.30045	75
	YouTube	3.6133	1.19564	75
	Instagram	3.4933	1.24524	75
	Facebook	3.6133	1.17282	75
	Total	3.2333	1.30316	450
	LinkedIn	3. 4613	1.00063	75
STIMULATION	Twitter	3.0747	1.15069	75
	Snapchat	2.7680	1.14233	75
	YouTube	3.5893	.97309	75
	Instagram	3.3467	1.09906	75
	Facebook	3. 1147	1.03086	75
	Total	3.2258	1.09693	450
	LinkedIn	3.0267	1.12541	75
IDENTIFICATION	Twitter	2.9378	1.19897	75
	Snapchat	2.6800	1.18098	75
	YouTube	3.3244	1.06257	75
	Instagram	3.3022	1.11524	75
	Facebook	3.4489	1.14096	75
	Total	3.1200	1.16236	450
	LinkedIn	3.1900	.95493	75
PRACTICAL USE	Twitter	2.9933	1.17905	75
	Snapchat	2.5967	1.11946	75
	YouTube	3.5867	1.03690	75
	Instagram	3.2167	1.05694	75
	Facebook	3.3667	.90451	75
	Total	3.1583	1.08534	450
	LinkedIn	3.1667	.94648	75
SOCIAL INTERACTION	Twitter	3.1933	1.07849	75
	Snapchat	2.7767	1.07770	75
	YouTube	3.3600	1.04562	75
	Instagram	3.3767	1.12734	75
	Facebook	3.5533	1.03265	75
	Total	3.2378	1.07480	450
	LinkedIn	3.1200	1.06492	75
INNOVATION/ TREND-SETTER	Twitter	3. 3267	1.19402	75
	Snapchat	2.6867	1.12338	75
	YouTube	2.9000	1.14045	75

	Instagram	3. 5000	1.18599	75
	Facebook	3.2133	1.07804	75
	Total	3.1244	1.15746	450
TOPICALITY	LinkedIn	3.2400	1.03477	75
	Twitter	3.6044	1.13462	75
	Snapchat	2.7511	1.10022	75
	YouTube	3.5333	1.01490	75
	Instagram	3.3422	1.10006	75
	Facebook	3.2844	1.02035	75
	Total	3.2926	1.09760	450
EMPOWERMENT	LinkedIn	3.607	.9974	75
	Twitter	3.387	1.1971	75
	Snapchat	2.660	1.1745	75
	YouTube	3.127	1.0672	75
	Instagram	3.347	1.1768	75
	Facebook	3.220	1.0407	75
	Total	3.224	1.1437	450

Multivariate Tests

The Multivariate Tests table is where we find the actual result of the one-way MANOVA. To determine whether the one-way MANOVA was statistically appropriate, the significant value has to be .0005, which means $p < .0005$

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.924	529.415 ^b	10.000	435.000	.000	.924
	Wilks' Lambda	.076	529.415 ^b	10.000	435.000	.000	.924
	Hotelling's Trace	12.170	529.415 ^b	10.000	435.000	.000	.924
	Roy's Largest Root	12.170	529.415 ^b	10.000	435.000	.000	.924
Platform	Pillai's Trace	.302	2.826	50.000	2195.000	.000	.060
	Wilks' Lambda	.728	2.869	50.000	1987.269	.000	.062
	Hotelling's Trace	.335	2.902	50.000	2167.000	.000	.063
	Roy's Largest Root	.156	6.869 ^c	10.000	439.000	.000	.135

- a. Design: Intercept + Platform
- b. Exact statistic
- c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Tests of Between-Subjects Effects							
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	ENT	55.236 ^a	5	11.047	9.683	.000	.098
	NEG_EMO	31.512 ^b	5	6.302	5.989	.000	.063
	PAS_TIME	54.687 ^c	5	10.937	6.861	.000	.072
	STIMULATION	33.526 ^d	5	6.705	5.875	.000	.062
	IDENTIFICATION	31.401 ^e	5	6.280	4.848	.000	.052
	PRACTICAL USE	43.048 ^f	5	8.610	7.868	.000	.081
	SOCIAL INTERACTION	26.509 ^g	5	5.302	4.783	.000	.051
	INNOVATION/TRENDSETTER	32.391 ^h	5	6.478	5.054	.000	.054
	TOPICALITY	34.028 ⁱ	5	6.806	5.961	.000	.063
	EMPOWERMENT	38.664 ^j	5	7.733	6.258	.000	.066
Intercept	ENT	4364.894	1	4364.894	3825.797	.000	.896
	NEG_EMO	4463.550	1	4463.550	4241.447	.000	.905
	PAS_TIME	4704.500	1	4704.500	2951.058	.000	.869
	STIMULATION	4682.539	1	4682.539	4102.830	.000	.902
	IDENTIFICATION	4380.480	1	4380.480	3381.142	.000	.884
	PRACTICAL USE	4488.781	1	4488.781	4102.058	.000	.902
	SOCIAL INTERACTION	4717.442	1	4717.442	4255.705	.000	.906
	INNOVATION/TRENDSETTER	4392.969	1	4392.969	3427.062	.000	.885
	TOPICALITY	4878.525	1	4878.525	4273.229	.000	.906
	EMPOWERMENT	4678.669	1	4678.669	3786.140	.000	.895
Platform	ENT	55.236	5	11.047	9.683	.000	.098

	NEG_EMO	31.512	5	6.302	5.989	.000	.063
	PAS_TIME	54.687	5	10.937	6.861	.000	.072
	STIMULATION	33.526	5	6.705	5.875	.000	.062
	IDENTIFICATION	31.401	5	6.280	4.848	.000	.052
	PRACTICAL USE	43.048	5	8.610	7.868	.000	.081
	SOCIAL INTERACTION	26.509	5	5.302	4.783	.000	.051
	INNOVATION/TRENDSETTER	32.391	5	6.478	5.054	.000	.054
	TOPICALITY	34.028	5	6.806	5.961	.000	.063
	EMPOWERMENT	38.664	5	7.733	6.258	.000	.066
Error	ENT	506.564	444	1.141			
	NEG_EMO	467.250	444	1.052			
	PAS_TIME	707.813	444	1.594			
	STIMULATION	506.735	444	1.141			
	IDENTIFICATION	575.230	444	1.296			
	PRACTICAL USE	485.858	444	1.094			
	SOCIAL INTERACTION	492.173	444	1.108			
	INNOVATION/TRENDSETTER	569.140	444	1.282			
	TOPICALITY	506.892	444	1.142			
	EMPOWERMENT	548.667	444	1.236			
Total	ENT	4926.694	450				
	NEG_EMO	4962.313	450				
	PAS_TIME	5467.000	450				
	STIMULATION	5222.800	450				
	IDENTIFICATION	4987.111	450				
	PRACTICAL USE	5017.688	450				
	SOCIAL INTERACTION	5236.125	450				
	INNOVATION/TRENDSETTER	4994.500	450				
	TOPICALITY	5419.444	450				
	EMPOWERMENT	5266.000	450				
Corrected Total	ENT	561.801	449				
	NEG_EMO	498.762	449				
	PAS_TIME	762.500	449				
	STIMULATION	540.261	449				
	IDENTIFICATION	606.631	449				
	PRACTICAL USE	528.906	449				

	SOCIAL INTERACTION	518.683	449				
	INNOVATION / TRENDSETTER	601.531	449				
	TOPICALITY	540.920	449				
	EMPOWERMENT	587.331	449				
a. R Squared = .098 (Adjusted R Squared = .088)							
b. R Squared = .063 (Adjusted R Squared = .053)							
c. R Squared = .072 (Adjusted R Squared = .061)							
d. R Squared = .062 (Adjusted R Squared = .051)							
e. R Squared = .052 (Adjusted R Squared = .041)							
f. R Squared = .081 (Adjusted R Squared = .071)							
g. R Squared = .051 (Adjusted R Squared = .040)							
h. R Squared = .054 (Adjusted R Squared = .043)							
i. R Squared = .063 (Adjusted R Squared = .052)							
j. R Squared = .066 (Adjusted R Squared = .055)							

Since the significant value is less than 0.005, we reject the Null Hypothesis and now we have to accept the Alternative hypothesis as generic:

H_A : Social Media is significantly influencing the customer experience

Interpretation & Observation

- 1) Considering each factor, preliminary from **Entertainment**, then the most preferred platforms are YouTube and Instagram. Since these platforms are widely used, any organization should consider these concerning the entertainment factor. These platforms are widely used for the customer's leisure time.
- 2) Customer does face some amount of **Negative emotion**, which plays a vital role from the perspective of the customers the top two platforms are Facebook and Instagram.
- 3) When the consumers are bored and want to kill the time then at those times, the customer's favorite **pastime** platforms are YouTube and Facebook.
- 4) Considering the **stimulation** factor Facebook and YouTube are the most chosen. This means that if LinkedIn is experienced as comforting, and consumers encounter relaxing ads on the platforms.

- 5) People do have this tendency of being identified or to just search someone with the platform that they are engaging with. This makes them feel wanted and unique with a specific identity. During such times, Facebook and Instagram are ideal for **the Identification** factor.
- 6) Most of the people like to stay updated with the ongoing current events and learn about funding opportunities, job opportunities, and public education materials that they can share with their set of people. Customers prefer YouTube and Instagram for their **practical use**.
- 7) About 35 – 40% of the people prefer to interact with social media by liking, posting, or sharing content. **Social interaction** is widely used on Facebook and Instagram.
- 8) Consumers can get lots of business using social media today and that business intelligence can be used to develop new products and services. They can reach out to people you've never thought of before and get better access to that knowledge. **For Innovation/Trend-setter** the best platforms are Instagram and Twitter.
- 9) Consumers do have this mindset of relating to things that are happening at present as their main element. They like to be stayed up updated with their surroundings and acknowledging the fact to which they can relate. **Topicality** the best platforms are Twitter and YouTube
- 10) To empower people means to get the ability to change other people's opinions and perspectives. It changes other people's opinions and it can also threaten yours. Considering **Empowerment**, the best platforms are LinkedIn and Twitter.

Conclusion and Interpretation

The whole process was to identify the gap in the advertising industry based on different social media platforms. Among the 06 selected social media platforms:

- | | |
|---------------|--------------|
| i. Facebook | iv. Snapchat |
| ii. Instagram | v. Twitter |
| iii. LinkedIn | vi. YouTube |

These were those consumers who are already using it for their engagement activities. But there's another segment of those people who were never introduced to either of these platforms. It's known as "**exposure to social media advertising**". During the whole process, the main motto was to understand if they had ever heard/ seen such advertisement of any company/brand as compared to those consumers who are already using it meticulously.

The results project that customer engagement experience is highly different from every social media platform based on the p-value and R² value every individual hypothesis is interrupted.

This research outcome will significantly contribute to the companies involved in social media marketing apart from advertisement content this research result emphasizes company should also priorities social media platforms according to the product STP.

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Analysis of uncertainty in indian stock market during covid 19

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Abstract

In this paper, we analysed how covid-19 pandemic has affected the Indian stock market and killed the expectation and growth curve of investors. A big bloodbath with a crash of 4400 points in NIFTY 50 (NSE) from level of 12100 to 7700 & 15150 points fall in SENSEX (BSE) from level of 41150 to 26000. Following the crash, the average investor turned more pessimistic about the short-run performance of both the stock market and the real economy, this created a mindset of people that it's the time we should invest. the short run profit expectations and the growth of economy excited around 12.34% new retail investors.

After the deep fall in the month of march from the lowest level. the stock market turned to a V shaped recovery by breaking all the resistance level barriers, NIFTY 50(NSE) touched highest level of 11700 & SENSEX (BSE) touched 39900 by the end of august. Without considering other factors and following the global market trend, it changed the paths of real Indian economy and Indian stock market, creating a huge gap In between.

Sooner or later a time of correction will appear to match the condition and align the real economy and stock market to go in same trend. With the great falls from the mid -September, the much-needed correction is here.

Keywords

Indian Stock market, Covid -19, V shaped recover, Correction

Introduction

The stock market is an aggregation of buyers and sellers, where the equity, securities, bonds, debenture, commodities etc of the companies are traded is known as share market, stock market.

World market: -

The 60 stock markets around the world stock market holds the market capitalization of \$us 70.75 trillion. And 87% of the global market capitalization are holds by the top 16 stock markets around the

globe. And out of these 16-stock market, 15 stock exchanges are located in north-america, europe, asia. the world's largest stock exchange, however is nyse (new york stock exchange) with a 34% global share,

Nasdaq of new york and jpx (japan stock exchange).

Indian market: -

Bombay stock exchange (bse) and national stock exchange (nse) are the major two exchanges market where most of the trading takes place. The bombay stock exchange was established in 1875 and national stock exchange started trading from 1994. In terms of volume nse is the largest stock market in india.

Market indexes: -

Sensex and nifty are the two major stock indexes in india. Sensex being the oldest and it comprises of 30 firms listed on bse, which has the base year of 1978-79 with a market capitalization of 47%. Whereas nifty comprises of 50 listed companies in nse, which comprises of 46.9% market capitalization.

Covid: -

The covid-19 outbreak which has brought drastic change in social as well as economic life of the people with nationwide lockdown. The world has fallen silent and all the resources have moved towards virtual experience in order to achieve great heights. The virus has impacted various sectors and industries. The who (world health organisation) alarmed everyone that we are not prepared for such a virus attack or later on the so-called pandemic. There was a joint report by who and the impact of such a pandemic has been estimated by the world bank to be 2.2 percent to 4.8 percent of global gdp.

Objectives: -

- To analyse the opposite path of the Indian stock market and indian economy during covid-19.
- To understand what impact covid-19 has created in the stock market.
- To find the major reason for the bull run of the indian stock market.
- and to analyse the regular correction in the market.

Literature review

(m. Raju, 2, july 2019) to investigate the criticality of the indian economy's stock market, to isolate the impact of the indian economy's stock market, to think about the clarifications behind hurried contemplations on the indian stock market, to consider the various sorts of retail parts of the indian stock market.

(mohammad noor allam, 2020) the study examines the extent of the impact of the lockdown period on the indian stock market due to covid-19 and the effect on market feelings between the pre-and current lockdown period.

(merit topcu, 2020) explore the impact of covid-19 on emerging stock markets for the period from 10 march to 30 april 2020.

(monika chaudhary, 2020) it focuses on assessing the impact on the sectors affected, such as aviation, tourism, retail, capital markets, small and medium-sized enterprises, and oil.

(avantika jaiswal, 2020) the aim of the study was to analyse unpredictability due to the virus in the financial markets.

(daisy basistha, 2020) the objective of the study was to analyse the effect of covid-19 on the stock market volatility garch model.

(azimli, 2020) the paper examines the impact on the degree and structure of risk-return dependence in the us of the novel coronavirus.

(scott r. Baker, 2020) the potential explanations for the unprecedented stock market response to the covid-19 pandemic are evaluated in this paper.

(cepoi, 2020) the paper investigates the reaction of the stock market to the coronavirus in the top six countries most affected by the pandemic.

(sylvain leduc, 2020) the paper analyzes the outbreak of the novel coronavirus or covid-19 through different supply and demand channels, which has severely disrupted economic activity.

(p sakthivel, 2020) by employing the gjr garch model, this paper studies the global financial crisis and the impact of the crisis on stock market volatility.

(dayong zhang, april 2020) the aim of this paper is to map the global financial markets' overall patterns of country-specific risk and systemic risk.

(qing he, 19 may 2020) this paper attempts to investigate the direct impacts on stock markets and spill-overs of covid-19.

Materials and method's: the covid-19 pandemic is caused by a new coronavirus infection, and the impact of this infection on the human body is being studied in scientific research and a possible cure for the infection is being found. Because of the uncertainties related to the disease, we decided not to use simulation models. The focus of this study is on the assessment of the damage caused by covid-19 in the sectors concerned, such as aviation, tourism and retail, and the uncertainty prevails in the nse & bse indian stock market. And the period from 20 february to 14 november 2020 was covered by the study. Our study is based primarily on the nifty 50 indices of the national stock exchange. And the study used both secondary data and primary data.

'impact and policy responses' by international labour organisation'

The epidemic shook the world economy and labour market and killed the supply chain with adverse demand for products and services, he explained.

It began as a health crisis and gradually became a social crisis, becoming the worst economic downturn since the great depression. The virus attack has badly impacted developing countries such as india. The nation with a decreasing rate of gdp growth since 2018 has seen a very difficult time. The virus has had a very significant effect on the manufacturing and services industry, some of which are hospitality, tourism, hospitals, education, banks, real estate, media, mining, construction, electricity and others. India's eight main core sectors saw a rapid fall in customer demand in the economy, leading to a slump in economic activity. Unless and unless we follow the principles of social distance and keep sanitizing our palms, we can't fight with covid-19. Many areas in india have shown how to fight with covid-19, such as dharavi in maharashtra, bhilwara in rajasthan, but with the flattening of the curve, the chance of being impacted floats around.

Trends before covid-19 and during covid-19

(<https://kite.zerodha.com/chart/ext/ciq/INDICES/NIFTY%2050/256265>, n.d.)



Figure 1

The stock market falls drastically after the announcement of lockdown throughout the country. The nifty 50 (nse) was trending on 12100 points before the announcement, but the market has seen bloodbath fall of 4400 points and had reached the level 7700points. And gave the soak to the investors and traders. The market had seen one of the biggest falls in the stock market.

(<https://kite.zerodha.com/chart/ext/ciq/INDICES/NIFTY%2050/256265>, n.d.)



Figure 2

but after march, the investors started being more optimistic and started their trading in the market. Various rating agencies like fitch, nielson, moody's all had predicted india's gdp growth rate will be on negative but the investors neglected the gdp's growth rate with a bull run and seen a rise in new retail investors in the stock market. The market has seen 12.34 % of new retail investors during covid-19. But the road map of the stock market was totally on a v-shaped recovery. The market has touched new heights during covid-19. As the fiscal support by the government had pushed the market in a good recovery. In an interview to business standard, finance minister nirmala sitharaman has said the intensity of "the problem is unique and the government has been engaging with all stakeholders". And the systemic reforms on labour, agriculture, banking sector, etc. Have turned the crisis on the opportunity.

(<https://kite.zerodha.com/chart/ext/ciq/INDICES/NIFTY%2050/256265>, n.d.)



Figure 3

slowly the market started to gain its march level with lots of uncertainty and bull run. But the 8-core sector was on a shrink on the second quarter also. Sectors like electricity, steel, crude oil, natural gas, cement, refinery products, all were in negative growth. As the 8-core sector contributes to 40% per cent of the country's gdp. The pace of contraction had reduced since april when the output had fallen by a record of 38 per cent. The sectors had remained volatile throughout fy20 and the current year. The stock market and the indian economy is moving towards the opposite direction. As with a continuous fall in various sectors and industries, the stock market is moving upwards, as all the manufacturing units are operating at 60-70% capacity, hotels industries are still in uncertainty, airlines are operating at 40% of their capacity, travelling's are restricted, schools and educational institutions are closes, malls and movie halls are operating at 50% capacity, unemployment is at highest, there is daily 50000+ corona cases register in india, still no vaccine incoming 3-4 months, countries fiscal deficit surpassed the revised target of 3.8% of gdp and estimated to reach 9% of gdp this year. But without considering the major factors, the indian stock market is moving towards the opposite direction of the indian economy.

impact on tourism, aviation and retail

Internationally, the tourism industry is the most badly hit by the covid crisis. Estimates by the world tourism organization (unwto) (2020) show a drop in international tourist arrivals of 20-30 per cent. The statistics are often focused on current conditions and are likely in the future to increase or decline. Millions of industry-related people are likely to lose employment. The travel and tourism sector in india prosper and makes a significant contribution to the economy.

India is a tourist powerhouse and the main market in south asia. Tourism accounted for 9.2 percent of gdp in india and generated 247.3 billion usd in 2018, creating 26.7 million jobs. It is actually the eighth biggest nation in terms of gdp (jagmohan, 2020). The study states that by 2029, nearly 53 million individuals are projected to find employment in the industry. In 2017, the ftas reached 10 million. They went through the ftas in 2017. However, foreign mobility has been limited by the coronavirus pandemic and gdp growth will be substantially affected by revenues from this sector. The growth rate of gdp may decrease by 0.45 per cent.

The air transport sector in india currently provides a contribution of us\$ 72 billion to india's gdp. In the second quarter, the lockout will have an important impact on the arrivals. It will amount to 18 billion if we estimate a conservative 25% decline in aviation contribution. In 2019, railways provided

gdp with a contribution of us\$ 27.13 billion. A 21-day lock-down would decrease sales by 1.56 billion dollars.

During fy 2019, the indian retail sector estimated us\$ 790 billion. It is more than 10 % of the population Gdp and around 8 per cent of jobs in the region. In recent years, online shopping has expanded incredibly steadily, with industry estimates showing 30 percent of online retail expansion in 2020 (National Investment Promotion and Facilitation Agency, 2020), quarter 2 sales will be impacted by a monthly closure for retail.

Depressed demand is expected to rebound very rapidly in the commercial market, helping the industry to regain losses after the lockout has been lifted. During the lockout era, in some parts of the world, internet shopping served to cover for some of the industry's losses.

Impact on GDP growth rate

Although the covid-19 pandemic is rising and there are few signs of containment by the economic development of the country is likely to be severely adversely affected. The un has warned that the coronavirus pandemic would have a major adverse effect on the global economy, with india's gdp growth falling most dramatically to 4.8% for the current economy. Similarly, the field of cross border inundation in the areas of tourism, trade and financial links, covid-19 will have extensive socio-economic implications in the region (un 2020).

In the 2019-2020 economic survey, the projections of real gdp growth were set at 5.0%, compared to the 6.8% growth rate in 2018-2019. The nominal gdp for 2018-2020 is expected to hit €204.4 trillion, up 7.5% from the interim gdp (€190.100 billion) forecast for 2018-2019. The national statistical office released updated gdp growth projections at 28 february 2020, ranging from 7% to 7.1% in the first quarter, to 6.2% in the second and 6.6% to 5.6% in the third quarter. Goldman Sachs has projected gdp growth to be -10.3% for the fy21 and also projected gdp growth rate of +13% in fy22. Kpmg india forecasts india's gdp growth to be between 5.3 per cent and 5.7 per cent in the event of a rapid retraction of the covid 19 pandemic in the world by mid-may.

The growth ranges from four to 4.5% for india's second scenario, where the spread of viruses but a major global recession is occurring. In the kpmg report, india predicts a below 3 per cent rate of GDP growth if the virus continues to spread to India and if an extension is observed at the lockdown research from Motilal Oswald showed that 14–19 base points of annual growth could shave off a single lockdown day. The total shutdown costs for Barclays are calculated at some us\$ 120 billion, which is 4% of GDP. The expense of 21-day national lock-downs was calculated by Yashwant Sinha, former Indian finance minister, at 1 percentage point of GDP. The global recession and potential uncertainty could lead to a growth rate decline of 2 percentage points (by 2020–2021). The American credit rating agency fitch ratings sharply lowered its growth forecast for India, from 5% to negative 10.5% growth rate for fy20-21. After the lockdown Indian GDP contracted by 23.5 % in first-quarter due to escalating coronavirus crisis. Care ratings have also projected India's GDP growth rate to be negative 7.7-7.9% after revised in their projection from negative 8.20%. Few agencies, has also added that economic indicators are also looking weaker for economic recovery in the coming quarter. According to the phocid industry, the body expects GDP to contract by -7.9% in the current financial year and grow by 7.7% in 2021-22.

Impact on labor's

According to the international labour organization. Approximately 400 million workers in an informal economy in India (76.2% of all employees) are at risk of worsening their poverty because of the

catastrophic results of the infection. With half the country closing down, 195 million full-time jobs, or 6.7 percent of the world's working time, will be missing. Many of the labor's works in very low positions with very low pay for their survival, where there has been a devastating unexpected loss of wages.

In rural India, seasonal labour migration is a popular fact. They are working in the construction sector, mining sector, automobile sector, textiles, handcrafts, brick ovens, logistics, transportation and agriculture

Study found that 55% of migrant workers earn an average of Rs 300 daily and 39% labors earns an average of Rs 500 daily. They live under very worse conditions, and always battle for having a meal two times a day.

While the government announced a 1.700 billion stimulus package, many will find it difficult to take advantage of these benefits. The government provides monthly subsidies and monthly financial assistance to the poor worker's and people those who are under poverty line. During the countrywide lockdown there were very horrible seen when poor migrants were moving 1000km bare foot, with no support of food and water. Their issues stem largely from job loss and a lack of a social security network. They kept going back to their homes despite the government's guarantee. A story of injustice, insecurity and social exclusion in this crisis for disadvantaged communities.

A sudden change of workers from the Indian economy is expected to have a far-reaching impact. As labor's were not available soon after the lockout, the effects of Behavioural change triggered and made pressure on small companies and the major sector.

Impact of oil & capital market on India

The center's progress report on steps taken to avoid migrant workers' mass migration to their villages was solicited by the supreme court. A sudden relocation of employees from coronavirus has far-reaching consequences for the Indian economy. In Gurugram, Surat and Mumbai workers are facing lots of challenges and they will be unable to start their work again. In their marginal farms or in the neighboring areas they might pursue jobs. As labour is not available soon after the lockout, the effects of Behavioural changes triggered by locking would place pressure on unorganized sector. The result: if the policy fails to fix this, the insatiability in the small unorganized sector will rise very high, and also permanent break-down of meme sector, further decline in growth rate can be observed and global unemployment will also rise as a result of the covid-19 pandemic.

A historic decline in oil demand has taken crude oil prices down to us\$ 22 per annum, 18 years down. Barrel, from us\$ 65 in January in march. For every us\$ 5 a barreling drop in crude oil prices has been linked to some estimates for Indian savings of us\$ 7–8 billion. The deficit in Indian current-account accounts of 1,55 gap in 2019–2020 could be reduced due to a decline in crude Samaha's oil prices. But India's capital outflows could surpass the current account deficit's savings capacity. The us dollar's average in rate was 70.4, but the average us dollar's psychological barrier was already close to the 75 per dollar. If India's capital outflows continue, rupee (in) may continue to depreciate in the coming days.

Factors affecting Indian stock markets

Current events - the ongoing events, domestically and internationally, is one of the major factors that affect the Indian stock market. Current events include any political turmoil, civil wars, riots, terrorist attack, any announcements related to policies, reforms, strikes, news related to bilateral trade country,

news related to logistics, news related to future events etc. If the events are positive for the economy and the investors then the market will increase and if the events are negative then the market will fall.

Natural calamities – natural disaster tends to create a chaotic situation in the stock market. Calamities like pandemic, earthquake, floods, cyclones, gas leak out, flu attack, etc. These disasters hamper the life and the market equally. This cause company to incur heavy losses which leads to a fall in stock prices. Companies manufacturing, sales, transport of goods, logistics get breakdown due to natural calamities.

Economic indicators - there are varied economic indicators that have an effect on the economy of the state ultimately making a bearing on the monetary market. The most important of the ton is oil values that are detailed by the international organization knowledge and GDP. The markers like open data yield a close analysis of the long run happenings on the oil market. For a nation who relies on foreign oil, any amendment in price is probably going to form a dent within the nation's economy. The movement of oil prices is one in all the key determinants of the stock market. As and once the costs rise, the expense tends to rise to form successfully for the buyers. Which will lower their ability to speculate within the market thanks to hitting rendered by the accrued oil prices.

Similarly, gross domestic product (GDP) is the marker for the nation's economy. It's at the side of total economic production of the country and its overall economic health. It helps to showcase the economic developments and therefore the future direction of the market. A healthy gross domestic product standing will directly create a bearing on the monetary markets and investment.

Government policies - there are various financial signs which have an impact at the economic system of the country in the long run creating a bearing at the economic marketplace. The maximum critical of the ton is oil values which are distinctive via way of means of the global corporation understanding and GDP. The markers like open statistics yield a near evaluation of the longer-term happenings at the oil marketplace. For a country who is based on overseas oil, any change in fee might be going to shape a dent inside the country's economic system. The motion of oil costs is one in all of the key determinants of the inventory marketplace. As and as soon as the expenses upward thrust, the cost tends to upward thrust to shape a hit for the buyers. To decrease their capacity to take a position inside the marketplace way to hit rendered via way of means of the collected oil costs.

Similarly, gross domestic product (GDP) is the marker for the country's economic system. It is on the facet of overall financial manufacturing of us of a and its basic financial health. It allows to exhibit the financial traits and consequently the destiny course of the marketplace. A wholesome gross home product status will immediately create a bearing at the economic markets and investment.

Correction: -

(<https://kite.zerodha.com/chart/ext/ciq/INDICES/NIFTY%2050/256265>, n.d.)



Figure 4

The market has always been uncertain and nobody can predict the trend of market whether it's a bull run or bear. There has been 24 market correction since November 1974. But during covid-19 period it has been observed that the market got corrected every month starting from august to November. Whether markets were in a tenterhook with the us elections, h1b visa, government policies, GDP figures, no vaccine arrival, re-lockdown in Europe countries, risk of the second wave, each time it was a correction due to uncertainty in the market. In India, we have seen virus cases coming down but the fear is there for the second wave and another round of lockdown which could disrupt supply chains and demand. In march, the nifty plunged to 8000 and now we have come back to 12600 – an almost 57.5% rally. It is very unlikely that we will see that kind of a rally once again even in the very bullish global economic and monetary environment. The whole market is running on the liquidity despite being underperformance of economic numbers. Can you imagine where the market will be reached if there is no short-term sharp corrections or intra-month movements? During such time it's always better to make risk free portfolio which is less aggressive. Because the risk is very high which are overbought by the investors. The sectors like it, pharma, have seen the brunt of correction in the past few weeks. As rib's economic activity index nowcasts GDP growth at negative -8.6% in q2 2021. With two successive quarters of GDP contraction, India is likely to have entered in a technical recession for the first time in their history.

Findings: -

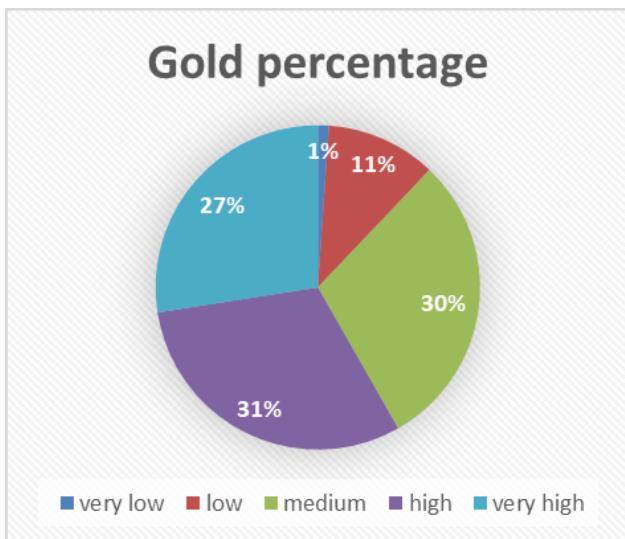


Figure 5

As per primary research, it has been observed that 58% of investors are happy being investing in gold during the crisis and 30% of investors are in between. As gold has the store of value, and also the haven for the investors. Other, advantages of holding golds are: - inflation hedge, weakness of the u's dollar, deflation, uncertainty in geopolitical, supply constraints, portfolio diversifications.

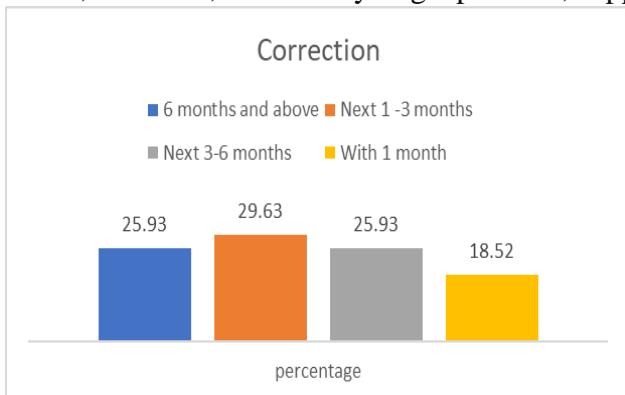


Figure 6

It has been observed that most the respondents who do their trading and investment in the stock market believe that there will be a correction in coming months. Approximately 30% investors believe that there will be a correction within 1-3months, and 51% investors believe that it will come with 6months.

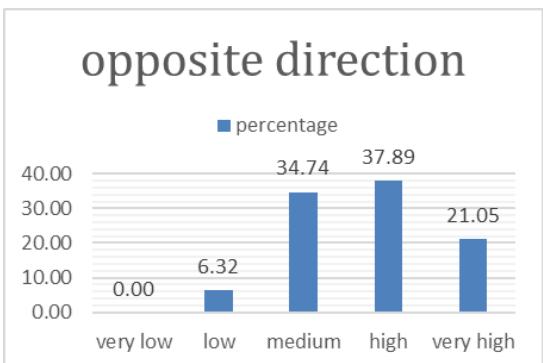


Figure 7

As per the primary data collection, it was having been observed that a large percentage of investors beliefs that the stock market and the real economic conditions are moving towards opposite directions. 21.05% of investors think that the breakage is very high, i.e. The volatility between two and 38% investors beliefs it to be high and 34.74% investors beliefs it to be medium.

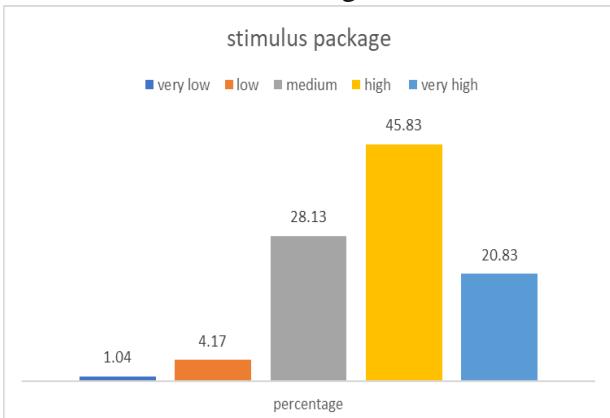


Figure 8

It has been observed in the primary research that 61% investors beliefs that there is a need of stimulus package by the government of India to revive the economy so that markets will remain stable and the fear of uncertainty will convert into a good opportunity.

Conclusion: -

The global economy got impacted very badly by the crisis covid-19 which directly affected India market. India is the country which has very dense population, so the pandemic is extremely dangerous for India. Almost all financial markets around the world have been affected by covid-19. Owing to the spread of the virus, the world stopped and it led the world into the great crisis of the century. The only way to avoid the spread of the virus before a vaccine is available is complete lockdown and social distancing.

The possibility of a technical recession during covid-19 in coming years will be very high, as it has been noted internationally that it is inevitable to shut down all economic operations to monitor the spread of covid-19: development, demand and trade. During covid-19, the supply breakdown, demand shock and a market shut, the nature of this type of shock is different essence. The economic recovery totally depends on the government findings and demands from the market as well as lockdown norms. Unorganized sector, mime) needs government support for survival. Every crisis, teaches us a new way

to life and new to survive. And it brings certain opportunity in the market also. The financial market took the lockdown as an opportunity to invest and earn in the long-run. As market also seen a V-shaped recovery during the covid-19 and also seen a bull run when market was not ideal to invest. The crisis has come up with lots of positive message for the Indian economy to attain and achieve sustainable growth in coming years by being self-reliance, equitable structures and environmentally responsible models.

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New Trend!!! Online shopping during Coronavirus Disease (COVID-19) Pandemic Situation

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Abstract

Coronavirus disease (COVID-19) is a highly deathful infectious respiratory disease caused by a coronavirus. Most people who come in contact with this disease caused by COVID-19 virus. Symptoms of the disease are mild to moderate. The primary symptoms are moderate respiratory illness and will be recovered with taking any special treatment. But if it's become severe patient will die in one week. Under coronavirus disease pandemic situation, everyday human life, movement and business have been disturbed due to lockdown and which result into the closing of shopping malls and business centers in the city. Nowadays, e-commerce is a vital tool for diminishing streaming business processes. For stay at home, maintain social distancing, protect from virus, and enlightening associations with both shoppers and business partners.

The research investigated the buying behavior of Indian shoppers under coronavirus disease (COVID-19) pandemic situation in case of an online perspective. The study reconnoitered the impact of five aspects: health aspect, price aspect, product aspect, trust factor, and place an element on online buying behavior under coronavirus disease (COVID-19) pandemic situation in India.

Structured Questionnaire are designed to collect data. Online survey method is used to collect data from 250 samplings which encompass online shoppers. Simple random sampling technique was used. Multiple regression analysis, factor analysis, reliability analysis, and are analysis with the help of data. In the findings after investigations the data revealed that four aspects which are Health aspect, Price aspect, place aspect had a positive and significant influence on online buying behavior under coronavirus disease (COVID-19) pandemic situation in the perspective of Indian.

The assessment generates responsiveness among online practicing companies, researchers, managers, shoppers, and prospects of online customer buyers. Only Online functioning businesses could be a successful leading aspect for explaining online buying behavior disease COVID-19 during a pandemic situation in the context of Indian.

Keywords

Coronavirus (COVID-19), online buying behavior, online shoppers, the impact of a pandemic, Indian.

Introduction

Coronavirus disease (COVID-19) is an infectious disease and caused by a newly discovered deadly coronavirus. Most people who fall sick with COVID-19 will experience fever, dry cough, tiredness mild to moderate symptoms and recover without special treatment. Severe symptoms are sometimes led to death; such symptoms are difficult to breathe and chest pain and high blood pressure.

As sudden lockdown, it leads to an urban population to see online shopping. But also, shopping is restricted to a particular product and category. Gadget are most selling category (68%), personal care (58%) and apparels (56%), home and kitchen appliance (52 %) as per the article published in Times of India gadget India (Jun 2, 2020, 22:38 IST)

E-commerce can be separate or distinguish from to share personal information over the online platform (Belanger, Janine, & Smith, 2002). E-commerce becomes an instrument for diminishing streaming business processes, cycle time, administrative costs and improving relationships with both shoppers and business partners. The study depicted that factor which influence the consumer's intention to shop and make ecommerce shops through internet shopping supportive or harmful to shop through internet. (Chiu, Huang, & Yen, 2010). Nowadays, electronic commerce adds new features in the business system.

This study endeavors to recognize customer perception of online purchase intention among the youth of India. The variables of research are impulse purchase orientation, brand orientation, and quality orientation considered along with online trust and prior online purchase experience. The finding of the investigation made that desire purchase orientation; previous online purchase experience and online confidence have a positive effect on the purchase intention. In the study it is found that Males are more active to shop online than females. The analysis has implications for, advertising directors, web advertisers, web-retailers, online merchants, and web-shoppers in India. Actually, online buyer is looking for offer and worth value of bargains rather than quality and brand. (Ghori, Haqq, & Khan, 2017). It is seeming that in 20-century online shopper has increased the use of the internet to make life easier in every aspect. This is a quantitative study conducted in Adana province to find out that 50.7% of the participants were female and 30.7% of them make online purchases; 85.8% of them are either social media or micro-blogging users.

The online shopping of Y Generation who are born in an era where digital marketing become a vital part of life and the internet becomes an essential part of life. The variable "education" is that best describes those who have university and postgraduate education mostly do internet shopping. Besides, social media presence and free time activity emerged as subsets expressing the internet exchange (Dolekoglu & Celik, 2019). Online shopping is very producing a great deal of profit for people which has changed the shoppers buying behaviour in business areas. This study is a primary focus on exploring the intention of e-commerce as quantitative research had conducted by the two general theories in these researches: First, the idea of planned behaviour (TPB) and; second, the technology acceptance model (TAM). Path analysis showed that perceived e-benefit had a positive effect on e-attitude. Perceived e-ease of use had a positive impact on e-attitude and e-shopping intention. Results had shown that e-attitude had a positive effect on e-shopping intention and perceived e-risk did not affect the e-attitude and the e-shopping intention. Findings also showed that perceived e-ease of use had the most significant direct, indirect, and (Azizi & Javidani, 2010). Online buying is increasing gradually. Now purchased of anything for the home, office or from the different country buyer are preferring online portals.

The objective of the study

The objective is to design in considering the current situation of COVID 19.

1. To know the intention level of shoppers online buying behavior.
2. To know the impact of COVID-19 disease on buying behavior.
3. To evaluate the health, price, product, trust, and place an aspect on online buying behaviour in coronavirus disease (COVID-19) pandemic situation.

Review of Literature

According to the Study of Tjiptono (2008), the product may be any services, goods, information, people, places, ideas, and any business that can fulfil the needs or expectations of consumers. Scholars also highlight product variety and the delivery, product availability, as the vital dynamics while make buying decision through the internet (Hossain, Rahman, & Hasan, 2018). The study is also revealed that security, appropriate pricing, privacy, personal hobby, payment method, social media and reference groups as the aspects which significantly affect consumers' intention towards the online purchase (Hossain, Jamil, & Rahman, 2018). According to Malasi's (2012) studies—the impact of product attributes on mobile phone preference among undergraduate university students in Kenya. The task designates that changing product attributes has an effect on undergraduate students' favourites on mobile phones. Numerous features of product and brand attributes are measured such as colour themes, visible name labels, and mobile phone with a diversity of models, packaging for safety, degree of consciousness on protection issues, look and design of the phone.

According to Satit, Tat, Rasli, Chin, and Sukati (2012), the product is one of the most solid predictors, two perceptions will lead to high levels of purchase intention and repeat purchasing at the final, and those perceptions are high product quality and high consumer satisfaction.

Rajput, Kalhoro, and Wasif (2012) survey the association between consumer's buying behavior, product price, product quality, and they designate that there is an important and positive association between price and buying behavior but there is a negative association between qualities with buying behavior. Amount of money that has to be paid by consumer to acquire the product or service (Sharma, 2008). A component affecting the volume of sales comprises influential pricing aims and policies, price fixation, discount policy, credit policy, etc. (Jain, 2013). Moreover, product has an impact on shoppers buying behavior (Hossain & Khan, 2018).

According to Kotler and Armstrong (2004), price is a significant component of marketing mix. In influential price, companies should reflect other marketing mix components, because any decision made affecting those components would affect the price too. Therefore, following the method of target costing, the companies have to consider the marketing mix plan, particularly when allowing for the price. In the product improvement stage, in place of studying the product features first, companies can set the perfect selling price first for particular shoppers, then develop the product to suit that price.

The method is called target costing, Fadhillah (2013) found that there is an influence of place towards customer's buying decision on the scrutinize of product, price, promotion, and distribution towards consumer buying decision. The producer and vendor must choose how to allocate their products. As rivalry develops fierce, retailers and vendors will be influenced more diligently. Faithfulness in trade will go down. This calls for re-appraisal of the current distribution channels and improvement of new channels in addition to giving thought to improvement plans and policies (Majumdar, 1996).

Occasionally it is called as delivery, comprising business activities that are used to certify the accessibility of the product which later will be distributed to the shoppers in the proper quantity (Sharma, 2008). The analysis refers to the way of placing products and services within the reach of shoppers (Al YE, 2008).

According to Lim and Osman (2014), e-commerce is an interesting attention to the university students. The intention of the paper is to determine the main drivers of virtual shopping intention among undergraduate students. The quantitative study found several aspects, such as perceived convenience, website attractiveness, perceived riskiness and initial trust. The result indicated that as perceived convenience, website attractiveness, riskiness are important to influence online shopping but initial trust does not notably affect online shopping intention. It is suggested that imminent exploration can be done in larger sample size, behavioural model or technology acceptance model (TAM) could comprise the future research.

According to Tham, Dastane, Johari, and Ismail (2019), online business is a popular form of business. Such kinds of business are highly encouraged. The area of the study analysed the influence of financial risk, convenience risk, non-delivery risk, return policy risk, and product risk on online consumer behaviour of Malaysian shoppers. As a quantitative study, the research specifies that product risk, convenience risk, and return policy risk have a remarkable and positive effect on online shopping behaviour. Financial risk was found to have unimportant and negative impact on consumer behaviour. Furthermore, the non-delivery risk was found

to have a significant and negative influence on online shopping behaviour. To provide a useful model for evaluating and managing perceived risk in online shopping which may result in amplification in the contribution of Malaysian shoppers and decrease of their cognitive deficiencies in the e-commerce environment, several managerial implications are discussed along with the scope for upcoming study.

According to Alfina, Ero, Hidayanto, and Shihab (2014), online has added new measurements in the business specifically in e-business in the present scenario in the world. The number of online users is increasing swiftly as many people increasingly use e-commerce sites. The area of the study investigated the impact of cognitive trust and e-WOM on purchase intention in C2C e-commerce site in the worldwide business criteria.

The research built a model to elucidate the purchase intention in the C2C e-commerce environment. Buyer's trust to the seller is a significant factor that influences the purchase intention. Results showed that belief has an affirmative and vital effect on purchase intention. Presently it was found that two cognitive trust variables, along with the adoption of e-WOM information have a positive and significant impact on trust to the seller. the perception of ability and integrity of the seller.

According to Hollingsworth, Ferguson, and Anderson (2007), buying behavior is influenced by disease outbreaks. Regular shoppers accelerate global spread if they are infected early and the outbreak does not enlarge speedily toward else. The frivolous ways, flying link, number of flights departing from and arriving at airport, number of shoppers permitted, and size of airplane are vital concerns in approximating the spread of modern increases. For some categories of infections, simulations demonstrate that insubstantial limitations, mainly separation of main cities, will be an essential element in widespread control policies (Hufnagel, Brockmann, & Geisel, 2004).

According to Grais, Ellis, and Glass (2003), disease would grasp adjacent metropolises first, but also aloof cities with high air travel volumes. A pandemic initiating in Hong Kong can currently extent speedily to northern hemisphere cities 111 days earlier than in 1968. Turning to the effects of disease on destinations, the recent avian flu and severe critical respiratory syndrome (SARS) epidemics are good illustrations of outbreaks that have had a big media influence with important health procedure controversies in recent years (Pongcharoensuk, Adisasmito, Sat, Silkavute, Muchlisoh, Hoat, & Coker, 2012). A drop of 12 million entrances to Asian and Pacific countries following the outbreak of the avian flu epidemic has been assessed (Wilder-Smith, 2006).

Research Methods

The present study used descriptive way of investigation while using quantitative method. Structured questionnaire were used to collect the primary data. Extensive literature review has been done in order to identify the construct for the development of the model. The model used in the present study have 18 items for data collection. Two items were based on the demographic variables, such as occupation of the respondent and the family monthly income. Fifteen questions were about the online buying behaviour during coronavirus disease (Covid-19) in India. Therefore, section 2 is comprised of the buying behaviour using five-point Likert scales. Independent variables were branding products, product quality, cheaper than in store, performance reflect prices, reasonable delivery charges, anytime 24 hours a day, get on time delivery, safe and secure website, protect shopper's security, trustworthy website, financial transaction, who rules, social distancing, stay home, and protect from virus. Dependent variable used in the study was the online buying behaviour. Simple random sampling method was used to collect the primary data. 263 questionnaires were received from the respondent out of the them 250 completely filled questionnaire were used for the analysis of the data. Data collected from the respondent were analyzed using several statistical tools like, factor analysis, reliability analysis, and regression analysis by using SPSS 25.0 version software.

Findings and Discussions

KMO and Bartlett's Test

The Principal Component Analysis has used and total 15 variables have been encompassed in the factor analysis. At first a correlation matrix has been created and then the appropriateness of factor model is tested. Bartlett's test of Sphericity has been used to test the hypothesis that whether the variables are correlated in the population or not. As demonstrated in Table 1, the KMO and Bartlett's Test disclosures that the approximate chi-square statistics is 826.367 with 171 degrees of freedom which is significant at 0.05 levels and the value of KMO statistics (0.815) is also greater than 0.5. As a result, the factor analysis must be considered an approximate method for analyzing the data.

Using varimax rotation, reduced 15 variables, the research had developed five uncorrelated aspects having Eigen value greater than 1.

Table 1

KMO and Bartlett's Test

Kaiser-Meyer-Olkin measure of sampling adequacy 0.815

Bartlett's test of sphericity Approx. Chi-Square 826.367

df 171

Sig. 0.000

Table 2 Component

Rotated Matrix	Component	1	2	3	4	5
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Brand of products 0.758

Quality of the products 0.770

Cheaper than in store 0.655

Performance reflect prices .634

Home delivery.720

24x7 0.687

On time delivery 0.771

Safe website 0.488

Shoppers security 0.815

Trustworthy website		0.657
Trustworthy website		0.742
Financial transaction		
WHO rules	0.805	
Social distancing	0.639	
Stay at home	0.721	
Protect from virus	0.649	

From the above Rotated Component Matrix, this research study investigates and assimilates the following uncorrelated aspects and their Cronbach's Alpha value.

Table 3

Uncorrelated Aspects & Reliability Analysis

Serial number	Name of aspects	Loaded variables	Cronbach's alpha
WHO rules			
Health aspect	Social distancing Stay at home Protect from virus		0.732
Price aspect	Cheaper than in store Performance reflect prices Reasonable delivery charges		0.843
Product aspect	Branding products Product quality		0.832
Safe and secure website			
Trust aspect	Protect shoppers security Trustworthy website Financial transaction		0.690
Place aspect	Anytime 24 hours a day Get on time delivery		0.708

Uncorrelated Aspects & Reliability Analysis

Uncorrelated aspects and reliability analysis are demonstrated below in Table 3. Health aspect (rules, social distancing, stay home, protection from virus) is 0.732. It shows a strong relationship among the variables. Price aspect (cheaper than in store, performance reflect prices, reasonable delivery charges) is 0.843. It shows that price plays an important role while making purchase decisions. Product aspect namely, branding products, product quality) is 0.832 which is relatively higher as compared to the health aspect. Trust aspect (safe and secure website, protect, security, trustworthy website, financial transaction) is 0.690, which has comparatively less important variable as the value is less. Similarly, place aspect (anytime 24 hours a day, get on time delivery) is 0.708. Reliability analysis is measured via Cronbach's coefficient alpha to check internal dependability of the constructs.

All constructs have no problem in reliabilities if the Cronbach's Alpha values exceeded the criterion of 0.7 (Hair, Rolph, Barry, & William, 2010). Here, the analysis displayed that all value of Cronbach's

Alpha is greater than 0.7 for online buying behavior except trust aspect. Therefore, the survey instrument is reliable to measure all aspects except trust aspect consistently and free from any random sampling error.

Table 4				
Model Summary				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.653	0.426	0.412	0.65392

Model Summary

As demonstrated in Table 4, the correlation coefficient value (R) is equal to 0.653 which recommends that

there is a moderate positive relationship between online buying behavior under coronavirus disease (COVID-19) pandemic situation and health, price, product, trust, and place aspect. However, only 42.6% (R-square values of 0.426) variation in online buying behavior under coronavirus disease (COVID-19) pandemic situation is accounted on health, price, product, trust, and place aspect. The adjusted (R^2) is 0.412 demonstrating that the aspects can significantly account for 41.2% variance in online buying behavior under coronavirus disease (COVID-19) pandemic situation.

Table 5

ANOVA

Model	Sum of squares	Df	Mean square	F	Sig.
1 Regression	63.204	5	12.641	29.561	0.000 ^b
2 Residual	85.096	149	0.428		
3 Total	148.300	154	0.832		

ANOVA

As demonstrated in Table 5, In this study we report results of the research examining the relationship between health, price, product, trust, and place aspect with online buying behavior under coronavirus disease (COVID-19) pandemic situation using multiple regression analysis. In this study the relationship between Five hypotheses is proposed and outcomes are computed. The F-value is 29.561 with a significant level 0.000 which is less than 0.01 with 5 and 149 degrees of freedom and it assures model fitness for regression analysis.

Table 6 Coefficients				
Path	Coefficients (\square)	t-values	p-value	Impact
Health aspect → online buying behavior	0.141	2.321	0.021*	Accepted
Price aspect → online buying behavior	0.348	4.230	0.000*	Rejected
Product aspect → online buying behavior	0.218	3.204	0.002*	Accepted
Trust aspect → online buying behavior	0.128	1.327	0.135	Rejected
Place aspect → online buying behavior	0.184	2.502	0.013*	Accepted

Note. * Significant relationship at $p < 0.05$.

Coefficients

As demonstrated in Table 6, the analysis includes all the path coefficients (\square), t-values, and p-values. The six aspects are tested using a two-tailed t-test with a significance level of 5% where the standardized coefficient was significant when t-value exceeds 1.96. The outcomes show that four out of five aspects are significantly related to online buying behavior under coronavirus disease (COVID-19) pandemic situation. On the contrary, the rest of the one factor has no significant relationship with online buying behavior under coronavirus disease (COVID-19) pandemic situation. Health aspect, price aspect, product aspect, and place aspect significantly related to online buying behavior under coronavirus disease (COVID-19) pandemic situation at $p < 0.05$. Thus, Health aspect, price aspect, product aspect, and place aspect could be accepted. In contrast, trust aspect has no significant relationship with online buying behavior under coronavirus disease (COVID-19) pandemic situation.

Conclusion and implications

The development of e-commerce market upsurges speedily. This research was conducted to find out the effect of perceived risk and reputation on perceived trust and consumer online purchase decision. It might be mentioned that perceived trust is surely influenced by perceived risk and perceived reputation and trust mediated the relationship between perceived risk and perceived reputation to purchase decision (Rahayu, Saparudin, & Hurriyati, 2018). E-business is playing a very vigorous role in growing the economy of any nation. The aim of this research is to comprehend the perceived risk and shoppers trust persuading shoppers' decision regarding online shopping. The results of the study demonstrate that perceived risk of shoppers has a negative influence on shopping decision, and consumer trust has a positive influence on shopping decision (Salim, Alfansi, Darta, Anggarawati, & Amin, 2019). Recent rapid developments in the business segment, coupled with the growing popularity

of the internet in recent years, have made companies more aware of the significant of E-business in gaining a competitive edge in the global market. Aim of this study is to better understand the factors that affect online shopping decision which would help in setting up better marketing strategies in targeted segments. The study used five variables on online shopping decision which are selected, namely perceived benefits, website characteristics, perceived risks, perceived pricing as well as product and service attributes. The one exception is product and service attributes. The generation gap is found to have a regulating impact on the relationships between perceived benefit, website characteristics, and online shopping decision (Mansori, Liat, & Shan, 2012).

Coronavirus disease (COVID-19) is an infectious disease caused by a novel coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment within a time frame. E-commerce is a tool for diminishing streaming business processes, cycle time, administrative costs and improving associations with both shoppers and business partners. The research investigated the buying behavior under coronavirus disease (COVID-19) pandemic situation in case of online perspective in Indian shoppers. The research is reconnoitered that the impact of five aspects: health aspect, price aspect, product aspect, trust aspect, and place aspect on online buying behavior under coronavirus disease (COVID-19) pandemic situation in the context of Indian shoppers. Data are collected through a structured questionnaire by online survey method from 250 samples which encompass online shoppers in country. Simple random sampling technique is used.

Data are analyzed using factor analysis, reliability analysis, and multiple regression analysis. Findings are revealed that four out of five aspects, health aspect, price aspect, product aspect, and place aspect have a positive and significant influence on the online buying behavior under coronavirus disease (COVID-19) pandemic situation in the perspective of Bangladesh. The assessment generates responsiveness among online practicing companies, scholars, managers, shoppers, and present and prospects internet buyers. Online functioning companies could flourish the leading aspects of online buying behavior under coronavirus disease (COVID-19) pandemic situation in the perspective of Bangladeshi shoppers.

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Finance Bubble: The Review of Literature of Causes, Impact and its Management

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Abstract

This paper investigates the history of economic bubbles and attempts to identify the impact of different stages, characteristics, and reasons for the genesis of various economic bubbles. We aim to study and understand bubbles in order to mitigate the impact and prevent the demolition caused by it on such an immense scale. To put together this literature review, research has been conducted on historical and recent bubbles, the reasons for their evolution tests to identify the presence of bubbles, their influence on investors and the market. Herding Behaviour, Low-interest rates, and Demand-Pull Inflation such as Government Intervention, Growing Economy, and Asset Pricing are few factors that contribute to bubble formation. The aftermath of the financial crisis of the 2000s highlighted the need to go beyond the micro-based approach to financial regulation and supervision. We find historical evidence that supports the characteristic patterns of the bubbles leading up to the change in regime; asset prices during bubble periods seem to oscillate around a faster-than-exponential growth. Macroprudential regulation approaches are used in financial regulation for the management of asset bubbles to mitigate systemic risk. The implementation and effectiveness of macroprudential tools, as well as their repercussions on macroeconomic outcomes and their relationship with monetary policy, is being highlighted.

Keywords

Asset Pricing, Speculative Bubble, Econometric Test, Log Periodic Power Law and Macroprudential tools.

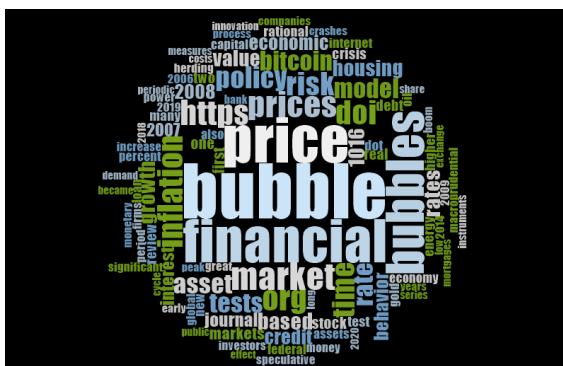
Introduction

An economic bubble or asset bubble (sometimes additionally spoken as a speculative bubble), a market bubble, a value bubble, a money bubble is outlined as an amount within which speculative investment results in associate overvaluation of securities among a selected sector (Siegel, 2003). They're usually perceived as things once the costs of products and services or in some cases – the interest rates tend to rocket up and attract the eye of potential patrons. Economic bubbles could “burst” once investors notice that the business among the bubble isn't as profitable or property as they initial thought. At this time, valuations of the businesses and securities concerned descend speedily to pre-bubble levels. Several bubbles square measure solely classified in and of itself once they need “burst”. Scientifically process the term “bubble” may be a subject of some discussion, significantly bubbles that have however to collapse (O’Hara, 2008). Over the years, many bubbles have emerged just like the

The liliaceous plant mania within the early 1600s–1637, probably the primary notable bubble in economic history that affected the Republic of The Netherlands. Throughout now the country was experiencing nice prosperity, throughout that European were introduced to liliaceous plant by the Turkish Empire. The flower quickly became a preferred item and was thought of as a standing image due to its beauty and abounding varieties. As a result, an enormous range of the speculators started commerce liliaceous plant, and thus the worth of the liliaceous plant bulbs rose to a fantastic high level and in Feb 1637, the liliaceous plant market suddenly folded.

The South Sea company was a venture and created cash through share exchanges for brief term government bonds once the mass was with success convinced concerning the stability of the worth. By doing this, the governmental debt was reduced effectively (Garbner, 1990). Reciprocally for this a 6 June 1944 annual revenue share still because the monopoly for exchange the South Sea was permissible to the corporate. For the sake of funding more the corporate persistently issued shares that caused inflation of the share value from one hundred thirty pounds (per hundred shares) in January to 950 pounds (per hundred shares) in July 1720 (Temin & Voth, 2004). However, Shea (2004, 2007) advised that subscription shares was perceived as kind of decision choice to the owners; even if being obligated to pay the subscription they'll favor to default afterwards if the subscription didn't appears to be price paying. Throughout the third quarter of 1720, the share value of the corporate suddenly reduced as a result of the instalments for subscription share were expected, varied investors defaulted and also the income of the corporate declined. New markets and also the connected merchandise within the South Sea were the most reason behind France South Sea Bubble. In due course, the concern of missing a chance and also the early exit behavior of investors UN agency set to go away once the bubble begin to expand may be known as supporter for the crisis (Carswell, 1961)

Literature Review



2.1 Causes

According to DeMarzo, Kaniel AND Kremer (2007) economic bubble occur once (1) an asset's market value is more than the discounted total of its expected money flows, wherever the discount rate is that the safe rate, (2) the money flows have a non-negative correlation with mixture risk, and (3) risk-averse investors rationally value more highly to hold the quality knowing even when being tuned in to the previous 2 things. Shiller (2000) proposes twelve factors that sets the bubble

in motion : the capitalist explosion and also the possession society, cultural and political changes affirmative business success, new data technology, corroborative financial policy and also the Greenspan place, the generation and their perceived effects on the markets, AN growth in media reportage of news, analysts' optimistic forecasts, the growth of outlined contribution pension plans, the expansion of mutual funds, the decline of inflation and also the effects of cash illusion, growth of the degree of trade because of discount brokers, day traders, and twenty-four-hour mercantilism, and also the rise of gambling opportunities.

2.1.1 Herding Behavior

Herding is talked regarding by Dass, Massa and Patgiri (2007). They state that bubbles are caused by swarming amongst traders. Traders herd if the incentives for swarming are robust and driven by reputational matters. (Utpal Bhattacharya, Xiaoyun Yu, 2007).

Generally, swarming behavior emerges if agents contemplate their non-public info however conjointly take the behavior of different players into thought. In components of the literature (for example Banerjee, 1992) it's assumed that the behavior of different players may be discovered directly.

Anderson associated Holt (1997) report an experiment within which every of the participants receives non-public signals and might observe the actions of the others. They show that this setting will result in informational cascades. Drehmann et al. (2005) conduct an online experiment. The setting of their experiments mirrors the model world of Avery and Zemsky (1998). They show that while not a further composition uncertainty ($\theta = \text{one or } \theta = 0$), there's no swarming behavior. This is often per the Findings. Associate empirical result that approves my model is that swarming behavior is a lot of probably if there's less info accessible regarding associate plus. Lakonishok et al. (1992) analyze the behavior of funds and are available to the conclusion that swarming behavior is a lot of frequent at smaller stock corporations than at larger ones. They describe one reason for this as follows (1992, p. 34): "There is a smaller amount public info regarding these stocks, and, therefore, managers are rather more probably to concentrate to every other's' behavior and build selections supported the trades of others in these stocks."

2.1.2 Low Interest Rates

Low interest rates and enormous inflows of foreign funds produce straightforward credit conditions for variety of years before the crisis, supply a housing market boom and inspiring debt-financed consumption. For instance, The U.S. homeownership rate inflated from sixty fourth in 1994 (about wherever it had been since 1980) to associate incomparable high of sixty-nine.2% in 2004 (Callis & Cavanaugh, 2007). Subprime disposal, that refers to disposal to a personal on faith its credit history and different relevant factors like quantitative relation of recipient debt to financial gain or assets, quantitative relation of loan to price or collateral, was a serious contributor to the current increase in home possession rates and within the overall demand for housing, that drove costs higher. This credit and house value explosion crystal rectifier to a building boom and eventually to a surplus of unsold homes that caused U.S. housing costs to peak and start declining

in mid-2006. Straightforward credit, and a belief that house costs would still appreciate, had inspired several subprime borrowers to get adjustable-rate mortgages. These mortgages enticed borrowers with a below market rate for a few preset amount, followed by market interest rates for the rest of the mortgage's term. Borrowers, United Nations agency couldn't build the upper payments once the initial grace amount over, would attempt to finance their mortgages. (Vijay Singh Agarwal, 2016).

Brunnermeier and Julliard (2007) examine the recent bubble in another market: assets. They postulate that cash illusion will fuel assets bubbles. Inflation declined round the flip of the century lowering nominal interest rates. Potential consumers erroneously assumed that real interest rates additionally declined and, therefore, bid up the costs of homes. The good cash couldn't bring costs back to fundamentals through arbitrage, as short-selling constraints are significantly relevant within the housing market. The authors initial in theory derive the mispricing element of housing stock, that is that the part of the price-rent quantitative relation that can't be explained by the basics. (Utpal Bhattacharya, Xiaoyun Yu, 2007)

Demand-pull Inflation

Asset Pricing

A promising line of analysis, begun by Ofek and Richardson (2003), consider an inexpensive edge of the basic worth. If {the price|the worth|the worth} is beyond the discounted value of money flows, and therefore the money flows square measure the utmost any firm during this trade has achieved, and therefore the discount rates square measure the minimum doable (the unhazardous rate, or maybe zero), the value is claimed to provide rise to a bubble.

The theory of rational quality valuation bubbles defines the basic worth of associate quality because the gift worth of future dividend payments. the most results of the seminal paper by city and Woodford (1997) says that worth bubbles cannot exist in equilibrium within the customary dynamic quality valuation model as long as assets square measure in strictly positive offer and therefore the gift worth of total future resources over the infinite time is finite. As most assets square measure believed to be in strictly positive offer and equilibria with infinite gift worth of combination resources square measure sometimes thought of exotic, the Santos–Woodford result's understood as spoken language that worth bubbles square measure unlikely to happen (Jan Werner, 2014).

If assets square measure in zero offer, then there exist equilibria with not-too-tight debt constraints with worth bubbles on infinitely-lived assets. This result extends to equilibria underneath debt constraints with discretionary bounds.

b. Government Intervention

Practices like securitization, inaccurate credit ratings by credit rating agencies and policies of the govt. provides an increase to monetary bubbles. (Hampel, Shenk, & Rick, 2008). one in every of the most reason of the nice inflation of Nineteen Seventies was aforesaid to be government's contribution to inflation by making deficit, 75); John L. Ingle, President of the primary TX monetary business firm., declared budget deficit disbursement and laid-off the role of financial policy "the greatest single reason for the inflation (DMN, 09/01/74).

growing Economy

The Housing bubble and dot com happened in the main thanks to globalization and monetary development. In Housing Bubble drastically distended government ought to have administered and overseen the monetary sector and provided them with some facilitate. There may are a lot of productive use of the direct prices of company and private resources.

Stages of Financial Bubble

Asset bubble goes through five stages, and in each stage investors and market have a different characteristic, starting with a) Displacement: The formation of Bubble begins in this stage, the price of the goods, services or stocks start to grow intensively, followed by b) Boom or take-off stage which involves the hike of prices by speculative demand. In other words, the steady increases of the first stage generate positive feedback and the speculators who observe increases in past prices foresee further increases in the future and they intend to purchase now in order to sell later at a higher expected price. c) The peak of financial bubble or stage of exuberance where the price of goods, services or stocks reach their highest price, d) The crash of the financial bubble: During this stage goods, services or stocks get into the subsiding phase. Large investors tend to rescue and withdraw from the market fearing loss. e) The mass panic point: Prompt and sudden decrease in prices cause the beginning of a mass hysteria/ panic and at this point most investors try to pull out from the market.

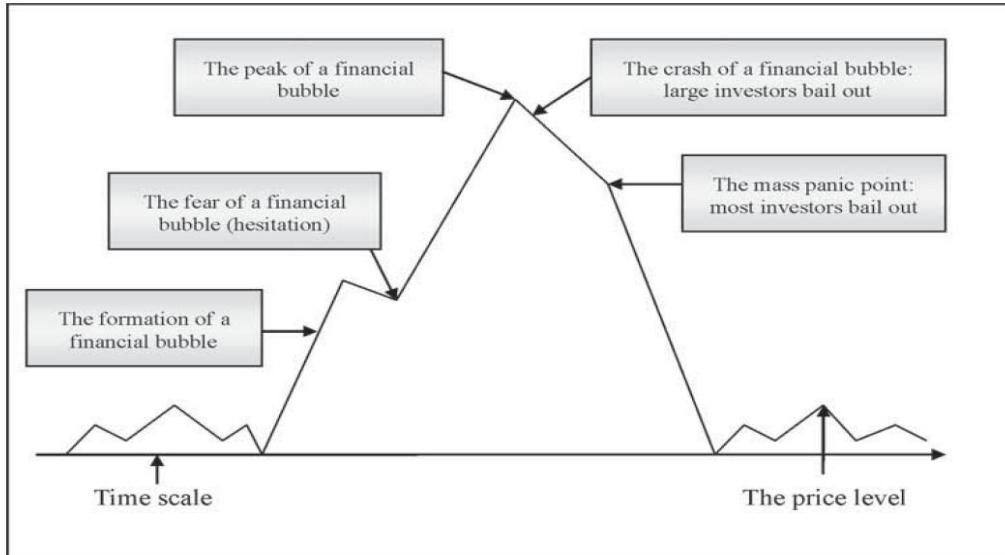


Fig. 1. The Explanation of Financial Bubbles: the Modified Bell Curve

(Source (RAŠKINIS))

Econometric Method to Bubble

Conceptual bubble models have received substantial attention in academic literature. In-depth knowledge and understanding of the speculative bubble phenomenon and its causes are very important, however, academics and policymakers have highlighted the importance of sound empirical methods for detecting bubbles in asset prices. The debate about the presence of a speculative bubble is a congenitally empirical question and not has to be dealt with as a theoretical problem, as pointed out by As Giglio et al. (2016). Empirical evaluation of bubble can be done through some econometric tests which can be classified into two broad categories:

Early Econometric Method

Variance Bound Test by Shiller (1981): The present value model can be elementally tested by variance bounds tests, which is even known as the volatility test. According to this test, developed by Shiller (1981) and Grossman, the price of the asset should be purely driven by the market and the null hypothesis should not contain any bubble. In order to check for bubble detection, the variance of the ex-post rational price is differentiated from the perceived price. In the share market, the present value of the anticipated dividend is used to find the perceived price, and the calculation of the ex-post rational price is based on the present value of the actual successive dividend.

West (1987) Two- Steps Test: The second subcategory of early econometric test is west (1987) Two-Steps Test. He puts forward a test that will overcome the joint hypothesis problem. He implemented two separate tests in a sequence, first testing the model hypothesis while the other one testing the no-bubble hypothesis. The two-step test makes use of the fact that the parameters

that are required to calculate the expected discounted value of dividends can be estimated in two different ways. One calculation method is not affected by a potential bubble in the data while the second method is. He uses a Hausman misspecification test to ascertain whether the evaluation derived from the two calculation methods are the same. In contrast with variance bounds tests, West (1987) two-step tests are specially designed to test the no-bubble null hypothesis against the alternative hypothesis that bubbles are present.

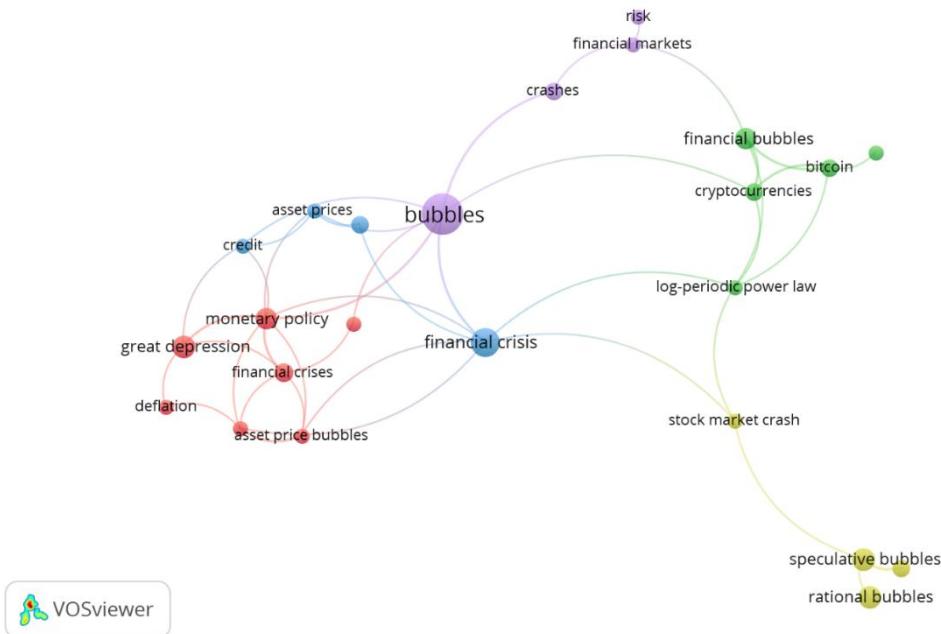
Standard Stationary- and- Cointegration - Based Tests by DiBa and Grossman (1988): Standard Stationarity- and Cointegration-Based Tests comes under the third subcategory in the process of bubble detection by using early econometric tests. This test is based on the connection between the elemental value of the asset and its price. In order to determine the stationarity, dividend yield or dividend-price ratio is tested, and to examine the cointegration, dividends and prices are tested (Gurkaynak 2008).

Advanced Econometric Methods (i.e. Advanced Stationary and Cointegration-based tests)

Recursive unit root tests, constructed by Phillips et al. (2011) and refined by Phillips et al. (2015): Instead of applying to the entire sample, this test is applied on a period-to-period basis to a small portion of data hence being used repetitively. When a distinct eruptive behavior is located in a subsample, it helps in bubble detection. Since this test is able to differentiate periodically collapsing bubble, due to its repetitive nature, it has an apparent benefit as compared to standard stationarity and cointegration tests.

Fractional Integration Tests (Koustas and Serletis 2005): The second subcategory of advanced econometric tests is fractional integration tests or tests for fractionally integrated models. Instead of integer degrees of integration, this new test uses fractional integration which is persistent but also mean-reverting. Since in the short run this process allows a higher degree of deviation from the equilibrium, it is preferred for modeling dividends, their corresponding equilibrium relationship, and the low-frequency behavior of stock prices (Koustas and Serletis 2005).

Regime-Switching Tests (Hamilton 1989): They were founded by Hamilton (1989) and introduced into the bubble literature by Hall et al. (1999). Regime-switching test or Markov-switching tests is the third subcategory of Advanced Stationary and Cointegration based test. The test makes use of the fact that rational bubbles impose fairly strong restrictions on the time-series properties of the asset price and use this to identify bubbles in data (Balke and Wohar 2009). It tries to capture distinct shifts in the time series generating process. Dickey-Fuller test approach that uses the class of Markov-switching models was proposed by Hall et al. (*ibid.*). They treated each element of the bubble process as a separate Markov-regime with constant transition probabilities between the regimes. These so-called Markov regime-switching augmented Dickey-Fuller unit-root (Markov-switching ADF) tests should be able to distinguish between a fairly evolving regime and an explosive and following a collapsing regime if a rational bubble exists.



Log-Periodic Power Law Model

Log-Periodic Power Law Model (LPPL) is used before the rebounding, burst, or crushes of a financial bubble for the purpose of describing the super-exponential (power-law) expediting behavior of asset price. The unusually increasing bubble price has a characteristic of powerful escalating arc and highly unsteady oscillation, indicating upward trends of price by the growth rate, in place of the simple exponential increasing process of constant growth rate.

For the original formula of LPPL model by Didier Sornette,

$$\ln p(t) = A - B(t_c - t)^m + C(t_c - t)^m \cos(\omega \ln(t_c - t) + \phi)$$

There are seven unknown parameters in the formula above, where $p(t)$ denotes the price of the asset at time t ,

- 1) A is the logarithm price of greater-than-exponential bubble price when it approaches to t_c ,
 $A > 0$.
- 2) B denotes the direction of price change is either an upward gain ($B < 0$) or a downward loss ($B > 0$).
- 3) C includes the degree of logarithm periodic oscillation.
- 4) m indicates the extent of accelerating, which depends on the proportion of rational investors and herding followers ($0 < m < 1$).
- 5) t_c is the critical time crushes or rebounds occur, the end of the bubble.

- 6) t is a certain time interval in the past that is any time before the bubble burst.
- 7) ω is the angular frequency of oscillation during bubbles, it exists when investors show consistency in an investment strategy.
- 8) ϕ is the initial phase, $0 < \phi < 2\pi$.

(Source: (Guoyu Kang))

How to use the LPPL model

In order to perceive the bubble or anticipating the critical time t_c regarding the crash or change of regime the noted price time series can be situated to log-periodic power law (LPPL) model (Sornette, 2003a,b; Zhou, 2007).

Fitting Technique of Log Periodic Power Law

The LPPL model for $p(t)$ in a time series starting at t_1 and t_2 ending at:

$$\ln[p(t)] = A + Bx^m + Cx^m \cos(\omega \ln x + \phi),$$

here, x is used to measures the time to the critical time t_c , $x = t_c - t$. The power-law term Bx^m shows the faster-than-exponential increase of prices due to positive feedback mechanisms when $0 < m < 1$ and $B < 0$ (or $m \leq 0$ and $B > 0$). The term proportional to $\cos(\omega \ln x + \phi)$ conveys a rectification to this super-exponential behavior, which has the consistency of distinct scale invariance (Sornette, 1998). With the help of variation between t_1 and t_2 , we can see the stability of the fitting parameters with respect to the beginning and ending points.

Time Period	Research	Researchers	Variables Studied	Research Methodology	Results
July 2020	Testing for financial crashes using the Log Periodic Power Law model		Financial time series; bubbles and crashes; nonlinear time series; robustness; log periodic power law.	Quantitative -	LPPL model has certain restrain in finding the bubble origin and the crash

March 2011	Asset Pricing Bubbles	Anna Scherbina, Bernd Schlusche, UC Davis	Bubbles, Limits to Arbitrage, Financial Crisis		Identifying the causes and consequences of the bubble
December 2008	A case study of speculative financial bubbles in the South African stock market 20032006	Wei-Xing Zhoua, Didier Sornette	Econophysics Financial bubble Super-exponential acceleration Log-periodicity Power-law singularity African common stocks		Five out of forty-five stocks qualified as bubble regime with super-exponential growth
2006	After the “Bubble”: Valuation of Telecommunications Companies by Financial Analysts	Martin Glaum and Nico Friedrich	Valuation, analysis, telecommunication		The great majority of telecommunications analysts use the DCF as their primary valuation method
2008	ECONOMETRIC TESTS OF ASSET PRICE BUBBLES: TAKING STOCK	Refet S. Gürkaynak Bilkent University	Bubbles; Econometric tests; Identification	Qualitative	The tests fare somewhat better in detecting a lack of bubbles, but

					they're still are issues about the specificatio n of the bubble that is shown not to exist,
2019	Bubble Detection in Financial Markets A Survey of Theoretical Bubble Models and Empirical Bubble Detection Tests	Ines Wöckl	bubbles, bubble detection, econometric tests, theoretical models	Qualitative	In summary, it can be said that different empirical bubble detection tests increasingly nd overlapping evidence of rational bubbles in the various time series they are applied to
2019	Bubbles, growth and sunspots with credit market frictions	Wai-Hong Ho and Lin Zhu	Bubbles Credit market imperfection Endogenous growth Sunspot	Qualitative	Bubbles may help the economy to overcome the barriers to financial

			Self-fulfilling		trade and thus a higher growth rate can be achieved if the productivity level of the unproductive agents lies within an interval.
2019	Bubbles and Financial Professionals	Utz Weitzel, Christoph Huber, Jürgen Huber and Michael Kirchler, Florian Lindner and Julia Rose	Laboratory, Group Behavior, Expectations, Speculations, Information and Market Efficiency, Event Studies, Insider Trading	Quantitative	Markets populated by professionals generated less overpricing, fewer bubbles, and smaller bubbles than in student markets.
2001	Financial Bubbles: Excess Cash, Momentum, and Incomplete Information	Gunduz Caginalp, David Porter, and Vernon Smith	Asset pricing, valuation	Qualitative	Stock and other asset prices are influenced by factors beyond the market's

					realistic assessment of value.
2000	Forecasting crashes: trading volume, past returns, and conditional skewness in stock prices	Joseph Chena, Harrison Honga, Jeremy C. Stein	Crashes; Trading volume; Skewness	Qualitative	Three robust findings of conditional skewness emerge from the analysis of individual stocks
	Herd Behavior, Bubbles and Social Interactions in Financial Markets	Sheng-Kai Chang	Social interaction, herding behavior	Qualitative	an extremely small bubble may cause a A sufficiently large number of traders to engage in herd behavior when social interactions among investors are strong.

2009	Herding behavior in asset markets	Christian Hott	Herding behavior; Price bubbles; Bayesian learning	Qualitative	The environment can be improved when more sophisticated investors enter the market.
	Identifying bubbles and the contagion effect between oil and stock markets: New evidence from China	Zhao Zha,, Huwei Wen b, Ke Li	Oil price Stock market Bubbles Generalized SADF Contagion effect	Qualitative	Identifying the contagion effect of bubbles in oil and stock markets are crucial to prevent financial risk and maintain financial stability.
2006	Injecting rational bubbles	Narayana Kocherlakota	Bubbles; Solvency constraints	Quantitative	As long as agents have some outside option available in every date and state, regardless of how unpleasant that option,

					bubbles exist.
May 2009	Rational and Irrational Bubbles: An Experiment	Sophie Moinas And Sébastien Pouget	Experiment, rational bubbles, irrational bubbles, cognitive hierarchy model, quantal response equilibrium	Quantitative and Qualitative	Bubbles are frequently observed whether there is a price cap or not.
May 2007	Was there too little entry during the Dot Com Era?	Brent Goldfarba, David Kirsch , David A. Miller	Project funding, venture capital, Economic rates, Strategy financing, Investment markets	Qualitative	Herding and belief cascades by accommodating divergence between the information and incentives of venture capitalists and their investors is the outcome.
2019	Is there a housing bubble in China?	Tianhao Zhia, Zhongfei Lib, Zhiqiang Jiangc, Lijian Weib, Didier Sornette	Housing bubble, Log-periodic-power-law-singularity, Bubble prediction, Chinese housing market	Quantitative	The Chinese housing market had sustained a rapid growth since 2008,

					which is in stark contrast with the gloomy outlook of the global economy and the steady decline of the domestic real sector since the aftermath of 2007 GFC. It had raised concerns of both academics and policy makers alike.
2006	Injecting rational bubbles	Narayana Kocherlakota	Bubbles; Solvency constraints	Quantitative	As long as agents have some outside option available in every date and state, regardless of how unpleasant that option, bubbles exist.

2014	Optimism, pessimism and financial bubbles	Bertrand Wigniolle	Rational bubbles, RDU preferences	Quantitative	Uncertainty associated with RDU preferences can extend the scope for the existence of rational financial bubbles.
2009	The phenomenon of financial bubbles: the case study of Lithuania	Dalius RAŠKINIS	Finance, financial markets, financial bubbles, economic crisis	Qualitative	The eagerness of investors may sometimes turn into a mania for it is based on enthusiasm and expectations rather than the real value of goods and services.
2008	The housing bubble and the financial crisis	Dean Baker	House Prices, Irrational Exuberance, subprime investors, loan rates, mortgage, CDSs, incentives	Qualitative	When the subprime investors no longer had equity in their home against which to borrow, many subprime

					homeowners had little choice but to default on their mortgage.
2019	Review on financial bubbles	S. Harsha and B. Ismail	Collapsible bubble, ADF unit root test, auto-correlation, regime, JLS model, durations, ANN	Qualitative	The tests based on JohansenLe doit-Sornette (JLS) model produce promising results.
2014	Review of Economic Bubbles	Victor Chang , Russell Newman, Robert John Walters, Gary Brian Wills		Qualitative	Investors may be willing to reduce due diligence and take unmeasured risks in sectors with which they lack experience.
2015	Speculative bubbles, financial crises and convergence in global real estate investment trusts	Roselyne Joyeux and George Milunovich	financial crisis; price bubbles; real estate investment trusts; co-movement; REITS	Qualitative	It contributes towards a better understanding of the risk latent in the global REIT

					markets and the associated real estate sectors.
2011	Preventing Bubbles: What Role For Financial Regulation?	Lawrence J. White	Venture, market cycle, products, economic growth, technologies, investors, Govt sector, speculation	Qualitative	The heightened policy concerns about the consequences of the collapse of the U.S. housing bubble are well founded.
2007	The Causes and Consequences of Recent Financial Market Bubbles: An Introduction	Utpal Bhattacharya, Xiaoyun Yu	Financial bubbles, asset bubbles, bank analysts, investors behavior, market risks, dollars	Qualitative	Endogenize paper by developing a side model where the asset is in limited supply and, therefore, others' holdings of that asset will matter for the agent.

2006	Technological innovation and market turbulence: The dot-com experience	Zhu Wang	Technology diffusion; Industry dynamics; Shakeout	Quantitative	The competitive equilibrium is socially optimal. It implies that as long as the social planner does not have better information about the innovation than the market participants, there is no need for intervention
2019	The Evolving Nature of Asset Price Bubbles, Financial Instability and Monetary Policy	Anastasios G. Malliaris	Asset price bubbles, financial instability, monetary policy; financial crises; the great recession	Qualitative	The formation of asset price bubbles in global financial markets, mostly driven by sophisticated and rational traders, remains a challenge.

2012	The causes and the effects of the ‘Housing Bubble, and the ‘Real Estate Crisis’	Vijita Aggarwal	Real estate, mortgage, Market rates, RBI, Volume analysis, Financial crisis, EBITDA, equity analysis	Qualitative	Economists and analysts have analysed the subprime crisis and the factors which triggered it.
2009	The 2007–2009 financial crisis, global imbalances and capital flows: Implications for reform	Turalay Kenc, Sel Dibooglu	Financial crisis, International capital flows	Quantitative	At least in the stock market, the unit price of risk is comparable to the onset of other notable recessions in the last century, including the great depression.
June 2010	The 2008 oil bubble: Causes and consequences	Damir Tokic	The oil bubble, Deflation, The Fed	Qualitative	The 2008 oil bubble was directly and indirectly engineered by the Fed to protect against deflation, which re emerged following the housing

					market collapse and the resulting credit crisis.
2014	The volatility-confined LPPL model: A consistent model of ‘explosive’ financial bubbles with mean-reverting residuals	L. Lin, R.E. Ren, D. Sornette	Rational bubbles, Mean reversal , Positive feedbacks, Finite-time singularity, Super-exponential growth, Bayesian analysis, Log-periodic power law, Stochastic discount factor	Quantitative	The volatility-confined LPPL model, to describe and diagnose situations when excessive public expectations of future price increases cause prices to be temporarily elevated.

Impact of different Speculative Bubble

The Great Inflation 1970

The Great Inflation started in the latter half of the 20th century from 1965 to mid-1980s. The economic cost of this inflation was high. It majorly happened due to political issues and was considered a political event. The opportunity cost was substantial and it destroyed the Bretton Woods system of fixed exchange rates, much of the thrift industry became insolvent, heavily taxed the U.S. capital stock, and randomly re-distributed income and wealth. The Federal Reserve hesitated to act on the inflation from the beginning and eventually it continued. The consumer price rate increased to 13.70 percent in March 1980 from 1.07 percent in January 1965 and later on declined in 1983. The local trough of 1.12 percent inflation was reached in December 1986.

Tufte (1978) based on work such as Kramer (1971) and many later studies put forward a political interpretation, shows that employment, real disposable income, or alike variables depends positively on the election outcome and inflation depends negatively on the said outcome. Quoting Nordhaus (1975, p.185), Tufte argues that “politically determined policy choice will have lower unemployment and higher inflation than is optimal.” Even Barro and Gordon (1983) reached a similar conclusion in a different model.

Theoretical Error

Federal Reserve did not increase the market interest rate enough to offset the negative effect of inflation on (ex-post) real interest rates and on expected future interest rates, as mentioned by Taylor (1999), Clarida, Galí, and Gertler (2000), and others. But according to Orphanides (2003), the response through Federal Reserve was sufficient to compensate for inflation. But it remains true that during the 1970s ex-post real short-term interest rates remained negative.

In the late 1960s, there was a heavy dependency on a simple Keynesian model with a nonvertical, long-run Phillips curve by the Council of Economic Advisers under Gardner Ackley and the Board's staff under Daniel Brill. Although, the reliance on the simple Keynesian model is part of an explanation of the start of inflation it was concluded that his model based on a Phillips curve failed “to explain the increased variance of inflation during 1971-76 as compared to the pre-1971 period” by Gordon (1977, p. 276). The Keynesian model explained the cumulative change. According to Gordon, after 1971 the Philips Curve became steeper but he did not offer any explanation for the change. The trade-off between unemployment and inflation as time passed, thereby imposing a more inflationary cost of reducing unemployment.

• Misinformation

In a series of papers, Orphanides showed that the data provided to policymakers from 1987 to 1992 varied, at times substantially, from the data published subsequently for output and inflation. One of his papers (Orphanides, 2001) shows that the output gap, as measured at the time, was generally larger than the output gap based on data recorded in the revised national accounts. Due to this dissimilarity policymakers were often misled while adjusting policy in response to the output gap and inflation. The two misperceptions which were the main source of error, according to Orphanides (2004), are (a) The assumption of policymakers during the 1970s that full employment meant about 4 percent of unemployment but the natural rate of unemployment had increased, (b) policymakers continued to expect a return to the higher productivity growth of earlier postwar years even after a slow productivity growth in the late 1960s or early 1970s.

• Role of Money Growth

The CPI inflation annual rate decreased to 1 percent in 1959-61 from 3.5 percent in 1958 due to the policy. Chairman Martin kept the average rate of monetary growth close to the average rate of output growth under the influence of Winfield W. Riefler, secretary of the Federal Open Market Committee (FOMC) and an influential adviser. Following Riefler's retirement in 1958, this model

of inflation disappeared from the Board and its staff. Even after this analysis was brought in front of the Federal Open Market Committee in the 1960s by D.C. Johns and Darryl Francis of the St. Louis Bank and Malcolm Bryan of the Richmond Reserve Bank, there was not much impact on the decision. Although Martin abandoned the money growth, Governor Sherman Maisel at his board from 1965 to 1972 used to urge for a policy that can control money growth. But he was against increasing the unemployment rate in order to control inflation. However, the economist in the Nixon administration scrutinized and reported money growth closely and stressed the effect of short-term changes rather than ignoring money growth. Their aim was to reduce the unemployment rate while increasing money growth but still failed to stop the inflation.

William McChesney Martin Jr. was Chairman of the Board of Governors when the Great Inflation started. There seem to be the three most important reasons. (i) Martin's beliefs and leaderships, (ii) Neither Martin nor his staff nor his co-workers in FOMC had a common set of beliefs regarding how the economy worked nor did they have a valid theory regarding inflation. It was believed that the unemployment rate should 4 percent or less with the coordination of fiscal and monetary policy as per the employment act. Inflation started and continued due to these beliefs and arrangements.

Bitcoin bubble 2013

Bitcoin was first proposed by Nakamoto (2008) and since then Cryptocurrencies have attracted significant attention from investors, regulators, and the media. Online payment from one party to another without any financial institution was facilitated by Cryptocurrencies. Bitcoin, the first decentralized digital currency, is the market leader of Cryptocurrency. There was an increase in the market capitalization of Bitcoin from the US \$10.1 to \$79.7 billion, and from October 2016 to October 2017 there was a jump in price from USD 616 to 4800. This remarkable growth brought a chance to obtain 680% of return on investments per year, which was not being offered by any other assets. In December 2017, the cost of a single Bitcoin reached \$19,500. On 7th January 2018, the total market capitalization reached a historical peak of \$835.69 billion and dropped more than 66% to \$283.95 billion in merely 30 days on February 6, 2018. Since its release in 2019, Bitcoin's price has gone through various fluctuations. Prediction of the Bitcoin Bubble was a massive challenge because of this volatility and expeditious skyrocketing and diving. The lives and livelihood of people were impacted across the globe due to the formation of bubbles and their drastic bursts. In between 13/09/2011 to 07/04/2019, Bitcoin observed a total of 51 crashes, and its historical crash was of more than 15% sharp drop in a period of 3 weeks. In various earlier research, rational reaction to new technologies, to novel opportunities a change in economic conditions, and so on can be seen as the main reason for bubble formation.

The first long bubble reached maturity in early April 2013 and crashed after reaching its peak on 9th April 2013, causing the market capitalization of Bitcoin to disappear by approximately 70% within just one week. The instability statement on, the then world's biggest Bitcoin in terms of exchange-traded volume, MtGox is considered as the main reason for the crash. MTGox was going through the repercussions of a hacker attack.

After recovering roughly 13 times from the first long financial bubble, there was a second-long bubble crash at the end of 2013. Bitcoin's attraction as an alternative decentralized cryptocurrency during the European debt crisis contributed to its price surge. Additional factors that led to the occurrence of the second-long Bitcoin Bubble was: Darknet drug market Silk Road was shut down by the FBI, Chinese people adopting Bitcoin, and increasing technical sophistication and growth of the Bitcoin mining community.

The third Bitcoin bubble, also the winner of the long Bitcoin bubble, which took place from 2014 until mid-2015 was China based Bitcoin exchange. They occupied more than 90% of all exchanged-traded volumes at the time of the closure of MtGox. There was a 100-fold increase in the global volume formulation of Bitcoin due to the Chinese Exchange in a matter of three years since 2014.

It can be concluded that the Bitcoin price had the ability to recover from the drawdowns in a short time even after having the characteristics of being highly volatile and frequently dropping sharply. This enabled the growth of price to a soaring level repetitively over the past years.

Oil-price Bubble

The 2008 Oil Price Bubble had some effects in the following ways.

The gold bubble- Even after failing to contain deflation with emergency measures in 2008, the Fed with Bernanke at the helm continued with the 2002 anti-deflation game-plan by keeping the short-term interest rates near 0%, and by investing billions of dollars into the global markets. However, since the US economic crisis became the global economic crisis, other countries developed their own need to implement similar emergency measures. As a result, all major currencies could potentially devalue tangible assets, such as gold, as the global central banks engaged in the printing press. Also, gold, as the ultimate currency during the time of geopolitical and economic uncertainty, was likely to experience a heavy investment demand, which was likely to cause the speculative bubble.

The rise of alternative energy- The “artificial” hike in crude oil prices in 2008 had a real effect on regular consumers. The price of gasoline went up drastically, the prices of food products increased due to transportation surcharges, the prices of other commodities rose, the price of home energy needs also grew sharply. In response to higher energy costs, many consumers permanently changed their energy use habits and energy demand. Additionally, many alternative energy companies rushed with solutions to provide an alternative source of energy to struggling consumers and businesses. Many countries like the United States of America endorsed the “green movement” and invested their resources to alternative energy during the 2008 oil bubble period.

The oil bubble at least contributed to the downfall of the Republicans. The rise of the democratic power affected crude oil prices as: (1) the new energy policy particularly focused on alternative energy; (2) the new trade policy affected the global energy demand, and; (3) the new environmental policy also affected the crude oil demand. The Democrats had already shown early support for the

alternative energy, endorsed some helpful ideas, and environment-friendly policies, which were useless for crude oil demand. (**Damir Tokic, 2010**).

Housing Bubble 2005

The U.S. housing bubble affected several components of the U.S. housing market like states of Calif., Florida, Nevada, Arizona, Oregon, Colorado, and Michigan, the Northeast passageway, and therefore the Southwest markets as associate degree economic bubble. Housing costs peaked in early 2005 and commenced to say no in 2006 at the national level. The Case-Shiller home value index¹ reportable the most important value call its history on December thirtieth, 2008. The indices area unit calculated from knowledge on repeat sales of single-family homes area unit created traditional to possess a price of a hundred within the half-moon of 2000 proceedings rates in 2006–2007 among the U.S. owners semiconductor diode to a crisis in August 2008 for the subprime, collateralized debt obligation (CDO). The exploding housing bubble was called- the foremost vital risk to the U.S. economy (US housing bubble, 2009) by the U.S. Treasury Secretary in October 2007. Low-interest rates and huge inflows of foreign funds created simple credit conditions for a few years before the crisis, refueling a housing market boom and inspiring debt-financed consumption.

The U.S. homeownership rate accrued from sixty fourth in 1994 (about wherever it had been since 1980) to associate degree incomparable high of sixty-nine.2% in 2004 (Callis & Cavanaugh, 2007). Subprime disposal, that refers to disposal to a private on faith its credit history and alternative relevant factors like magnitude relation of receiver debt to financial gain or assets, the magnitude relation of loan to price or collateral, was a serious contributor to the present increase in homeownership rates and within the overall demand for housing, that created costs go higher. This credit and house value explosion semiconductor diode to a building boom and eventually other to a surplus of unsold homes inflicting U.S. housing costs to peak and fall in mid-2006.

Several subprime borrowers were inspired by simple credit, and a belief that house costs would still appreciate, to get adjustable-rate mortgages. These mortgages tempted borrowers with a below-market rate for a few preset amount, followed by market interest rates for the rest of the mortgage term. Borrowers, United Nations agency couldn't build the upper payments once the initial grace amount over, would attempt to finance their mortgages. Refinancing became harder as house costs began to say no in several components of the USA as borrowers United Nations agency found themselves unable to flee higher monthly payments by refinancing started non-remitting. (Vijita Singh Aggarwal, 2012) The credit rating agencies had very little clue on that their analysis was to be primarily based.

Within the initial years, the default rates were low, since rising house costs meant that the overwhelming majority of mortgages would be paid. Notably, they didn't appear to possess allowed for the chance that house costs might decline once creating their assessments of risk. Therefore, the credit rating agencies usually gave high investment ratings to collateralized debt obligations (CDO) that were principally stuffed with assets that were secured by bad mortgages.

Citigroup and alternative major banks had additionally created Structured Investment Vehicles (SIVs) that were apparently freelance firms, whose solely assets were CDOs. The banks would then unload shares in and/or bonds against these SIVs, not together with their liabilities in their balance sheets. While credit default swaps (CDSs) simply came into existence within the late 90s, their use exploded throughout the height years of the housing bubble. The Bank of International Settlements calculable the entire notional price of CDSs at over \$45 trillion in June of 2007. It is value noting that a lot of the figures at the worst monetary actors have created themselves tremendously loaded, when they destroyed their firms. As an example, Angelo Mozilla, the business executive of nationwide monetary, one the most important originators of subprime mortgages, attained many hundred million bucks in compensation over the last decade. (Dean Baker, 2008).

There was associate degree announcement on April nineteen, 1933, that the U.S. was departure the gold commonplace and it had a positive and important impact on the worth of corn and cotton. The order of magnitude of the impact was giant, between 3%-4% in at some point.

The declaration gone along Congress on Gregorian calendar month five, 1933, retroactively annulling the gold clause from debt contracts, doesn't seem to own affected trade goods costs in an exceedingly important method. At some level, this is often stunning, since the annulment of the gold clause was an elementary step within the method towards eventually devaluing the greenback associate degreed making an attempt to bring deflation to a finish.

The announcement that a “gold buying” program was being launched, on day, 1933, had a big and positive impact on the costs of the four commodities. The purpose estimates of the corresponding event dummy square measure between zero.9% for cotton and five.7% for wheat and square measure all important at typical levels. The implementation of this program – that, as noted, was the product of economic expert George F. Warren, signaled to the general public that new measures associated with the dollar-gold charge per unit were on the point of be enforced. If the worth of gold went up, trade goods costs would follow fleetly.

The official devaluation of the greenback on Jan thirty one, 1934, seems to own wedged just one trade goods price: cotton. The event dummy is insignificant within the regressions for the opposite three commodities. A logical interpretation for this result's that this wasn't associate degree sudden event; in reality, it had been absolutely anticipated by the general public. When Jan fifteen, once the Gold Act was gone along Congress, there was a certainty that the greenback would be formally low within the next few days. The sole question was by what quantity the official worth of gold was reaching to be raised.

The status of contracts was extraordinarily necessary throughout this era. As is also seen, the event dummy for the hearings before of the Supreme Court is often negative and important. At the time, many observers noted when the hearings that if the Court rejected the Roosevelt administration arguments, there would be a necessity to roll the devaluation back and reinstate the recent worth of gold, of \$20.67 per ounce. This is able to have an extremely negative impact on costs. The

regression estimates resulted in an exceedingly positive amendment within the four trade goods costs. By supporting the Govt. policy and therefore the declaration, the Supreme Court confirmed that the devaluation of the greenback enforced in Jan 1934, would stand.

Finally, the results indicate that the opposite covariates affected trade goods costs in numerous ways in which. Above all, there's proof that changes within the bilateral exchange rates affected the costs of cotton and wheat. At a similar time, there's no proof that either the alteration of the Discount Rate by the Federal Reserve System, or government debt costs wedged on trade goods costs in an exceedingly important fashion. As is also seen, the coefficients for the event dummies don't seem to be altered considerably. This means that the "change of regime" impact operated additionally to any influence it might have had on market exchange rates or interest rates. (Sebastian Edwards, 2020).

Time Period	Research	Researchers	Variables Studied	Research methodology	Results
2011	A historical overview of financial crises in the United States	Yochanan Shachmurov e	Financial crises Economic booms and busts Housing prices Bank panics and bank runs Bank runs Panics of 1857, 1873, and 1893 Banking regulations	Qualitative	The paper claims that for the foremost half, these monetary crises are similar in their nature. The conclusion is that future crises are laborious, so not possible to eliminate.
June 2019	Dissection of Bitcoin's multiscale bubble history from January 2012 to February 2018	J. C. Gerlach, G. Demos and D. Sornette.	Bitcoin, k-means clustering, multiscale bubble indicator, log-periodic power-law singularity analysis, forecasting, market crashes	Qualitative Data	Bitcoin worth, though extremely volatile and often dropping sharply, has had the potential to pass through drawdowns in no time.

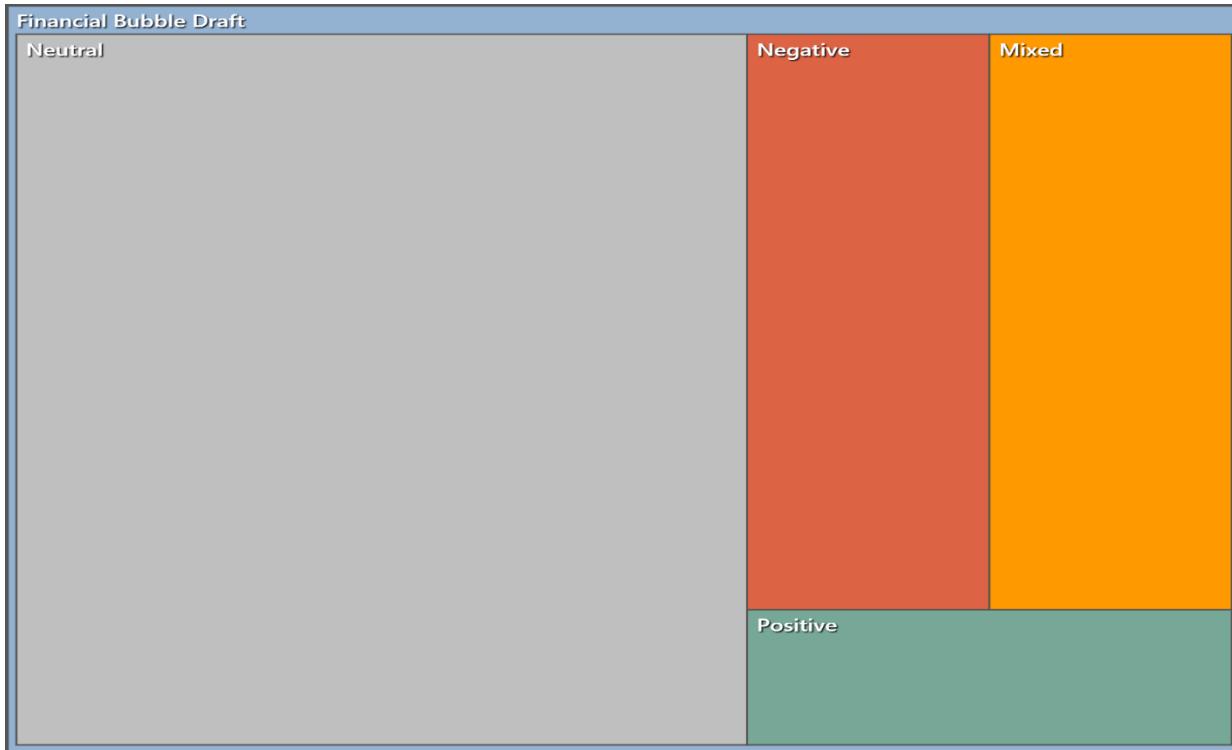
2020	Boom, Bust, and Bitcoin: Bitcoin-Bubbles As Innovation Accelerators	Tobias A. Huber and Didier Sornette	Bitcoin, Money, Cryptocurrencies, Financial Bubbles, Technological Innovation, Economic Growth, Reflexivity	Qualitative	Bubbles have to be compelled to be conceptualized as “chaotic attractors” for technological innovation.
2019	Cryptocurrencies as financial bubbles: The case of Bitcoin	Julian Geuder, Harald Kinateder, Niklas F. Wagner	Bitcoin, Bubble periods, Cryptocurrencies, Explosive price behavior, Financial bubbles, Log-periodic power law	Qualitative	This paper confirms the existence of frequent bubble periods in Bitcoin costs by 2 totally different strategies, particularly the PSY and also the LPPL model.
2003	Dot Com Mania: The Rise and Fall of Internet Stock Prices	ELI OFEK and MATTHEW RICHARDS ON	Internet stock price, share valuation, lockup	Qualitative	This paper provides a step at generating an entire, cohesive rationalization of the web bubble

2014	Are there really bubbles in oil prices?	Mehmet Balcilar, Zeynel Abidin Ozdemirc, Hakan Yetkiner	Crude oil price Exponential fitting Bubbles	Qualitative	Various reason by that oil bubble costs is triggered
2019	Cryptocurrencies as a financial asset: A systematic analysis	Shaen Corbeta, Brian Luceyb, Andrew Urquhartc, Larisa Yarovayad	Cryptocurrencies, Pricing bubbles, Regulation Cyber criminality, Systematic literature review	Qualitative	The findings demonstrate that there are various gaps within the cryptocurrency-related literature.
2014	Globalization and financial development: A model of the Dot-Com and the Housing Bubbles	Sergi Basco	Financial development Globalization Rational bubbles Housing supply elasticity	Qualitative	Cause of the severity of the recent subprime crisis is that banks were holding the bubble whereas the Dot-Com Bubble was control by households.
2004	The Great Inflation of the Seventies: What Really Happened?	Edward Nelson	Monetary policy, federal reserve, inflation	Qualitative	If policymakers had adhered to a financial read of inflation within the Seventies and thus used financial policy smartly, there are sturdy grounds for basic cognitive process

					each inflations outcomes and real outcomes would are superior.
2005	Origins of the Great Inflation	Allan H. Meltzer	Inflation, federal reserve, monetary and fiscal policy	Qualitative	Importance of financial and monetary policy to mitigate systematic risk
2012	Value relevance and the dot-com bubble of the 1990s	John Morris, Pervaiz Alam J.	New economy, Value relevance, Capital markets, Equity valuation, quality, Analyst forecast	Qualitative	GAAP and different reportage laws serve a purpose within the method of human activity between in public listed companies and also the investment public.
2011	Everything You Always Wanted to Know about Log Periodic Power Laws for Bubble Modelling but Were Afraid to Ask	Petr Geraskin, Dean Fantazzini	Log-periodic models, LPPL, Crash, Bubble, Anti-Bubble, GARCH, Forecasting, Gold.	Qualitative	Consider diagnostic tests supported the LPPL fitting residuals, diagnostic tests supported rational expectation models with random mean-reverting termination times, furthermore as graphical tools helpful for capturing bubble

					development and for understanding whether or not a crash is visible or not.
2020	Market impact and performance of arbitrageurs of financial bubbles in an agent-based model	Rebecca Westphal, Didier Sornette	Financial bubbles, Agent-based model, Arbitrageurs, Noise traders, Fundamentalists, Market impact	Quantitative	The DR strategy will with success exploit the bubbles that lead them to crush the opposite traders on a risk-adjusted basis.
2019	Real-time prediction of Bitcoin bubble crashes	Min Shu, Wei Zhu	Cryptocurrency, Bitcoin, Bitcoin bubble crash, Log-periodic power law singularity (LPPLS), Market crashes, Adaptive multilevel time series detection methodology	Quantitative	The high volatility and fast transition between the rocketing up and also the plunging down of Bitcoin worth cause an enormous challenge to the prediction of Bitcoin bubbles.

2010	Shocks, Crashes And Bubbles In Financial Markets	Anders Johansen And Didier Sornette	Financial bubbles, crashes, super-exponential growth, positive feedback, power law, log-periodicity, prediction.	Quantitative	The combination of the applied mathematics proof of those 2 strategies provides check of the hypothesis that the most important negative markets moves are special and form 2 distinct populations.
2000	Speculative bubbles and crashes in stock markets: an interacting-agent model of speculative activity	Taisei Kaizoji	Speculative bubbles; Stock market crash; Phase transition; Mean field approximation; Japan crisis	Quantitative	Bubbles and crashes have their origin within the collective crowd behavior of the many interacting agents.
2015	Implement and Prediction of LPPL Model	Guoyu Kang, Yun Zhang, Ye Tang	LPPL, Price model, real time assets, exponential growth, herding investors, burst, financial growth	Qualitative	The informative power of a formula will be questioned thanks to seven unknown parameters inside a sophisticated formula of LPPL.



Macroprudential Policy to mitigate Systematic Risk

The amount of distress on the real economy which can be caused by the financial bubble was considerably identified after the Global Financial Crisis (GFC). The USA slow-paced recovery from the great recession and the European ongoing debt crisis highlighted the need for considerable understanding of the instruments which led to the formation of the financial bubble, the dynamics of their progression and disintegration, and the contagion effect through which other markets and the real economy are affected.

The absence of a systematic structure that can help to predict and survive the global growth of financial imbalance was highlighted during the economic crisis. Due to its unexpected unwinding, there was a drastic macroeconomic impact. There was a deficiency in understanding of the overall risk. The aggressiveness of risk-taking by different types of financial institutions was failed to be acknowledged- in the context of low-interest rates and macroeconomic performance- which helped in a tremendous increase in the balance sheet in the financial system. The self-adjusting ability of the financial organization was overestimated which led to the underestimation of the outcome of the gathering of growth stocks of debt and leverage. Financial deregulation and innovation's role

in enlarging both the boom and the unwinding of financial disparity and their effect on the real economy was not sufficiently recognized.

The primary aim of micro-prudential management is to protect individual financial institutions from individual behavioral risks and prevent them from taking too much risk, while the macroprudential policy focuses on the relationship among markets, the infrastructure, the wider economy, and the financial system as a whole. It aims to reduce the financial crisis and mitigate systemic risk. Macroregulation takes measures to offset the forces in order to naturally decline the measured risk in the boom and the risk involved in the subsequent burst Brunnermeier et al. (2009). According to the Bank of England (2009), the macroprudential policy should aim to balance the services of financial intermediaries- credit intermediation, insurance against risk, and payment services- so that the liquidity during the crisis and the boom-bust cycle of the financial bubble can be avoided. The policy should aim at restraining events of system-wide damage, which have major economic costs (Borio and Drehmann, 2009a).

Macroprudential instruments	
Instruments	Examples
Risk measurement methodologies	
By banks	Risk measures calibrated through the cycle or to the cyclical trough.
By supervisor	Cyclical conditionality in supervisory ratings of firms; Develop measures of systemic vulnerability (e.g. commonality of exposures and risk profiles, intensity of inter-firm linkages) as basis for calibration of prudential tools; Communication of official assessments of systemic vulnerability and outcomes of macro stress tests;
Financial reporting	

Accounting standards	Use of less procyclical accounting standards; dynamic provisions.
Prudential filters	Adjust accounting figures as a basis for calibration of prudential tools; Prudential provisions as add-on to capital; smoothing via moving averages of such measures; time-varying target for provisions or for maximum provision rate.
Disclosures	Disclosures of various types of risk (e.g. credit, liquidity), and of uncertainty about risk estimates and valuations in financial reports or disclosures.
Regulatory capital	
Pillar 1	Systemic capital surcharge; Reduce sensitivity of regulatory capital requirements to current point in the cycle and with respect to movements in measured risk; Introduce cycle-dependent multiplier to the point-in time capital figure; Increased regulatory capital requirements for particular exposure types (higher risk weights than on the basis of Basel II, for macroprudential reasons).
Pillar 2	Link of supervisory review to state of the cycle
Funding liquidity standards	Cyclically-dependent funding liquidity requirements; Concentration limits; FX lending restrictions; FX reserve requirements; currency mismatch limits; open FX position limits

Collateral arrangements	Time-varying Loan-to-value (LTV) ratios; Conservative maximum loan to- value ratios and valuation methodologies for collateral; Limit extension of credit based on increases in asset values; Through-the cycle margining.
Risk concentration limits	Quantitative limits to growth of individual types of exposures; (Time Varying) interest rate surcharges to particular types of loans.
Compensation schemes	Guidelines linking performance-related pay to ex ante longer-horizon measures of risk; back-loading of pay-offs; Use of supervisory review process for enforcement.
Profit distribution restrictions	Limit dividend payments in good times to help build up capital buffers in bad times.
Insurance mechanisms	Contingent capital infusions; Pre-funded systemic risk insurance schemes financed by levy related to bank asset growth beyond certain allowance; Pre-funded deposit insurance with premia sensitive to macro (systemic risk) in addition to micro (institution specific) parameters
Managing failure and resolution	Exit management policy conditional on systemic strength; Trigger points for supervisory intervention stricter in booms than in periods of systemic distress.

(Source- (Moessner, 2010))

They can be utilized in assessing monetary risks in varied ways that. At first, the interaction between practices regarding the valuation of collateral and loan-to-value ratios, which might be addressed through most loan-to-value (LTV) ratios. Borio et al (2001) give associate in-depth discussion of this interaction and an outline of the regulators' expertise with LTV ratios.

Secondly, a crucial channel through that a direction of risk weakens banks' balance sheets and amplifies the monetary cycle is provisions for loan losses. Borio et al (2001) argue that accounting practices, tax constraints and therefore the methodologies accustomed live risk cause provisions to extend throughout fluctuation downturns. Fernandez First State Lis et al (2000) discuss however advanced provisioning would limit the discovered sturdy fluctuation fluctuations of loan provisions. Juan Ramon Jimenez and Saurina (2006) recommend that advanced loan loss provision ought to take under consideration the credit risk profile of banks' loan portfolios on the fluctuation. Thirdly, Margining practices in securities finance and immediate derivatives transactions ar one amongst the ways that to examine the risks.

The cross-sectional facet concentrates on the distribution of risk within the national economy at one purpose, and specifically the common exposures that arise as a result of record connectedness, similar exposures and associated behavioral responses. Within the method, economics dynamics are taken as external.

As in financial policy, another distinction is between rules (built-in stabilizers) and discretion in orienting the tools of macroprudential policy (Borio and wedge, 2007). Each the historical expertise of financial policymaking and therefore the tutorial literature have highlighted the importance of rules for answerability, transparency and effectiveness of financial policy. Because the literature on time consistency shows, discretion-based solutions, which might be first-best in terms of agents' utility, are time inconsistent (Kydland and town, 1977).

On correlation, we tend to see rule-based macroprudential tools – e.g. automatic stabilizers – seem real (Goodhart, 2004), for example- Loan loss provisions, capital requirements/capital surcharges, or loan-to-value ratios are designed in rules-based ways that. A crucial inbuilt stabilizer are risk management practices that interiorize the chance of the buildup of economic disparities and their uncoiling (Borio and wedge, 2007).

We can differentiate among tools supported each amount restrictions and value restrictions. Perotti and Suarez (2010) give a theoretical treatment of value vs. quantity-based tools supported the model by Weitzman (1974), WHO shows that within the presence of externalities the 2 kinds of policy instruments will have totally different welfare outcomes if there uncertainty concerning compliance prices. Taxes fix the incremental cost of compliance and result in varied levels of compliance, whereas quantity-based tools fix the extent of compliance however end in unsure marginal prices. They show that once regulators cannot target individual bank characteristics, the business response to regulation depends on the composition of bank characteristics.

Time Period	Research	Researchers	Variables Studied	Research Methodology	Results
December 2010	Macroprudential Policy- a literature review	Gabriele Galati and Richild Moessner	Macroprudential Policy	Qualitative-Secondary Data	Study the effectiveness of macroprudential tools and how monetary policy and macroprudential policy is coordinated.
May 2000	Asset Price Bubble and Monetary Policy	Franklin Allen, Douglas Gate	Asset Price Bubble and Monetary Policy	Qualitative	Impact of monetary policy on asset price.
2012	Asset price bubbles: What are the causes, consequences , and public policy options?	Douglas D. Evanoff, George G. Kaufman, and Anastasios G. Malliaris	Monetary policy	Qualitative	Highlights the need to understand financial bubble. The changes in the financial regulatory framework are required to manage the financial bubble.
2003	Growth in the Post-Bubble Economy	Kevin J. Lansing	Macroeconomic variables, GDP	Qualitative	Shed light on the underlying causes of the 2001 US recession.

2016	Macroprudential policy frameworks, instruments and indicators: a review	Blaise Gadanecz and Kaushik Jayaram	Macroprudential policy, financial cycles, measuring systemic risk, micro and macro data	Qualitative	The appropriate set of indicators that policymakers can rely on when deploying macroprudential tools, depending on the type of vulnerability and the desired policy objective
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Findings

We can see that the life cycle of the financial bubble usually goes through the phases of formation, hesitation, peak, and burst, which is characterized by the bail outs of both, large (sophisticated) and mass investors. Although financial bubbles are phenomenon of complex consequences, their negative side (for instance, polarizing effect and economic downfall) is the most obvious and although the bubble effect manifested itself in at least two markets – stock market and property market, the housing bubble was more devastating, for its formation and burst have severely affected financial, building, real estate and related-industry sectors. The after-bubble combination of declining real estate prices, low expectations, and conservative credit policy is fatal in the housing market stagnation. The prompt and efficient governmental actions, as well as changes in the methods of financial institutions are of great importance.

Conclusion

Financial bubbles are subject to bounded rationality. They define the situation of irrationally growing prices for commodities, properties and financial instruments. The eagerness of investors may sometimes turn into a mania for it is based on the enthusiasm and expectations rather than the real value of goods and services. Bubbles form a part of the economy and will generally ingeminate when markets are driven by emotions and greed rather than logic. Economists are trying to understand the speculative bubble, although it cannot be eliminated, its impact can be diminished. We also identify important future research questions that emerge from both the literature and the current policy debate. Moreover, we can identify heterogeneous beliefs about future prices as a strong predictor of price inefficiencies, particular for investors in bubble-prone market environments. Future research may want to focus on this as a fruitful avenue for further insights. New research on prediction of financial bubbles is trying to fill this gap. Preventive measures and prediction techniques seem to be at the same cross-road.

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EI as an indicator of personality development and the changing aspects of EI in the lives of IT sector employees of India due to complete work from home culture in the time of Covid-19 Pandemic

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Abstract

This research on the IT sector employees across India after the prevalence of Covid-19 Pandemic sheds light on the Emotional Intelligence as an index of personality development of a targeted population. This study also identifies the changing aspects of Emotional Intelligence during the time of lockdown. EI is a crucial parameter of personality as it regulates one's capability to manage emotions and one of the mandatory indicators of workplace performance. On the date of 22nd March, 2020 India experienced a voluntary public curfew followed by a complete lockdown from 24th of March of 2020 as instructed by the government. There have been some drastic changes in the work culture as well as in work pattern in the IT sectors after complete work from home mandate, eventually impacting on the personality traits of the employees with some necessary modifications in the Emotional Intelligence. Both positive and negative impacts have been chalked out that influenced the work efficiency, behaviours towards colleagues, working hours

and quality of work. Current research also tries to find out long term and short term impacts on EI of the employees precisely on personality traits during the pandemic.

This primary research comprises of exploratory research design involving qualitative investigation. The target sample size is 100 IT sector employees with variable age brackets, genders, salaries, positions in the organizations and responsibilities. Survey method has been taken to collect responses from defined sample size.

Key words

Emotional Intelligence; Personality development; changing aspects of EI, Covid-19 pandemic, work from home, workplace performance

Introduction

With the emergence of Globalization World has faced many challenges and opportunities in terms professional lives. From the phase of late 90's this specific changes have been observed drastically in the lives of Employees. The menace of work life imbalance has always been an issue in IT sector. Almost all the projects are having tight deadlines and extended screen times causing severe impacts on the personality traits of the employees. On set of Corona virus, announcement of sudden lockdown and work from home pattern have added on to the stress factor of the employees. EI is considered to the tool that can efficiently control the stress factor. EI mostly triggers cognitive abilities of the employees and substantially helps to develop personalities according to situations to cope with the stress.

Aims, rationale and objectives are discussed here according to the developed research question in this particular study.

1.1 Background of the industry

Over the last 3 decade spectacular growth in the IT sector of India has been observed being one of the economic pillars of this country. This particular sector is accountable for almost 8% contribution of country's GDP in the year of 2012 that drastically jumped to 9.5% in the year of 2015 onwards. In 2019, IT industry generated 180 billion US dollars in the overall annual revenue that is quite huge in comparison with previous past 10 years (thehindubusinessline.com, 2020).

1.2 Background of the Research

Traditional model of work pattern being abolished in the modern era, IT work life imbalance has grabbed the attention to be the most discussed issue now days. After the announcement of the complete lockdown employees of IT sectors were bound to work from home. This phase was the time of digital transformation in India. Compilation of all the technologies like Internet of things, Artificial intelligence has helped immensely to get aligned with these sudden and unexpected transitions in professional sectors. However, there has been a huge battle with emotional stability and job performance during this difficult phase. Enduring the fear of corona virus, employees were bound to work as smoothly and efficiently as previous days. These few months, thus, have

modified the personality traits of the employees from both positive and negative perspectives eventually impacting on the Emotional quotient of the employees.

1.3 Rationale

In this section of the study we will discuss what is the prevalent issue of this research, why it became an issue, how much severe the issues have been and finally what are the probable measures that we can get through this research.

This year has been an exclusive one where sudden arrival of a deadly virus grabbed the entire socio-economical prospects got stagnant due to complete lock down. In many small and medium enterprising companies people lost their jobs due to liquidity crunch in the companies. Apart from that, the turmoil of digital platforms after the onset of pandemic hampered the big companies as well. This is an unavoidable fact; India is lagging in technologies even in big companies, in comparison with western part of the world. Majority client base belonging from western countries, Indian IT companies faced severe issues to cope up with the transforming digitization hampering the reputation due to lack of client satisfaction, at the initial phase of the lockdown. All these factors all together immensely affected psychological traits of the employees (Nicola *et al.* 2020).

As per the opinion of Obradovic *et al.* (2013), theory of emotional intelligence helps to unveil the facts of emotional adaptability with situational changes. Work life pressure, performance, job satisfaction and EI are correlated as EI develops through psychological skills of a human being according to varying situation. This research sheds light on changing aspects of EI due to the significant changes in the personalities during complete work from mandate prior 24th of March, 2020.

Stress factor became high during work from home due to extended deadlines, night shifts, immense allocation of projects in a single day along with handling necessities of household works. Several mental and physical health issues developed for this particular duration. Starting from bowel irritations to psychoneurosis, anxiety, paranoia was noticeably demarcated in the IT sector employees (Mostovicz *et al.* 2011).

This research triggers EI as a psychological parameter that can denote how efficiently one can handle stress. Besides notifying the stress factor as a challenge, this study has also focussed on the long term and short term impacts on EI helping to develop personalities of the employees substantially.

1.4 Research Aim

This research aims to analyse the impacts of complete work from home mandate during the time of lockdown, specifically in the IT sector employees in terms of emotional intelligence and personality development. This research also sheds light on long term and short term impacts EI of the employees due to the stagnancy in the personal life styles as well as in the work life. Modifications and changing aspects of EI have been noted minutely in this research to get the expected outcome of the research.

1.5 Research Objective

1. To identify the impacts of work from home mandate on Emotional intelligence of IT sector employees
2. To identify modified personality traits due to complete work from during the time of complete lock down
3. To critically evaluate impacts of lock down and work from home on job performance of the employees

1.5. Research questions

1. Is there any impact of work from home mandate on Emotional Intelligence of IT sector employees?
2. Is there any significant change in personality traits due to complete work from home mandate in the time of pandemic?
3. What are the long term and short impacts on Emotional Intelligence due work from home pattern?
4. Is the performance of the employees got hampered due to work from home working pattern?

1.6 Research Hypothesis

H0: Emotional Intelligence has not helped IT sector employees to cope with the work from home culture.

H1: Emotional Intelligence has helped the IT sector employees to cope with the work from home culture.

H0: Long duration work from home has not impacted on IT employee's personality development.

H1: Long duration work from home has lagged the personality development of IT employees.

H0: Long duration of work from home did not lead the personality traits of the employees from short term to long term effects

H1: Long duration of work from home led the personality traits of the employees from short term to long term.

1.7 Significance of the research

This research put efforts to link a relationship between EI and work from job pattern bringing out the significant personality traits of the IT sector employees during lockdown. Change in personality traits are important to mark as this factor solely can impact on job efficiency and finally on net performance at the day end. Long term and short terms effects are major ones as it reveals the facts and details about the future working pattern with the newly developed skills within

the personalities. This research has dug down the facts and details in order to establish the success rate of work from pattern in future as well.

Structure of the research

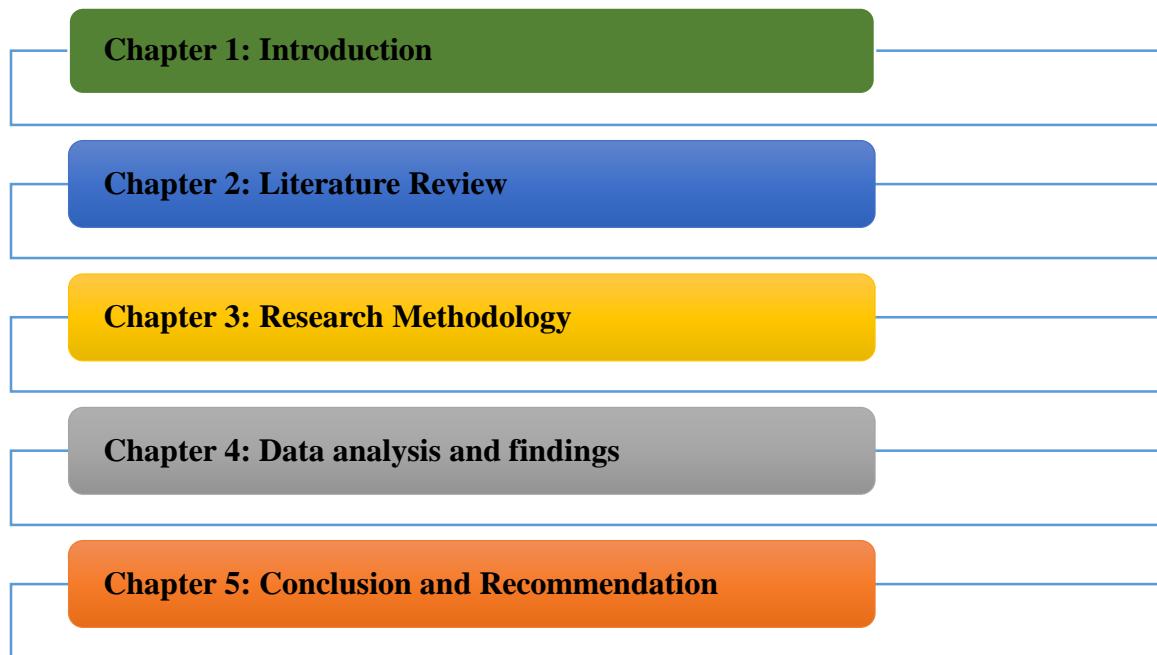


Figure 1: Research structure

(Source: Prepared by Author)

Literature review

2.1 Introduction

Literature review is the derived outcome of the available research works. It is the synthesis that provides an overview of emotional intelligence, its theories and model that include Mayer *et al* model, Goleman model and Bar on model. The personality models which are interconnected with emotional intelligence. This literature review also gave a glimpse of the challenges which are faced by the IT employees during complete work from home

2.2 What is Emotional Intelligence?

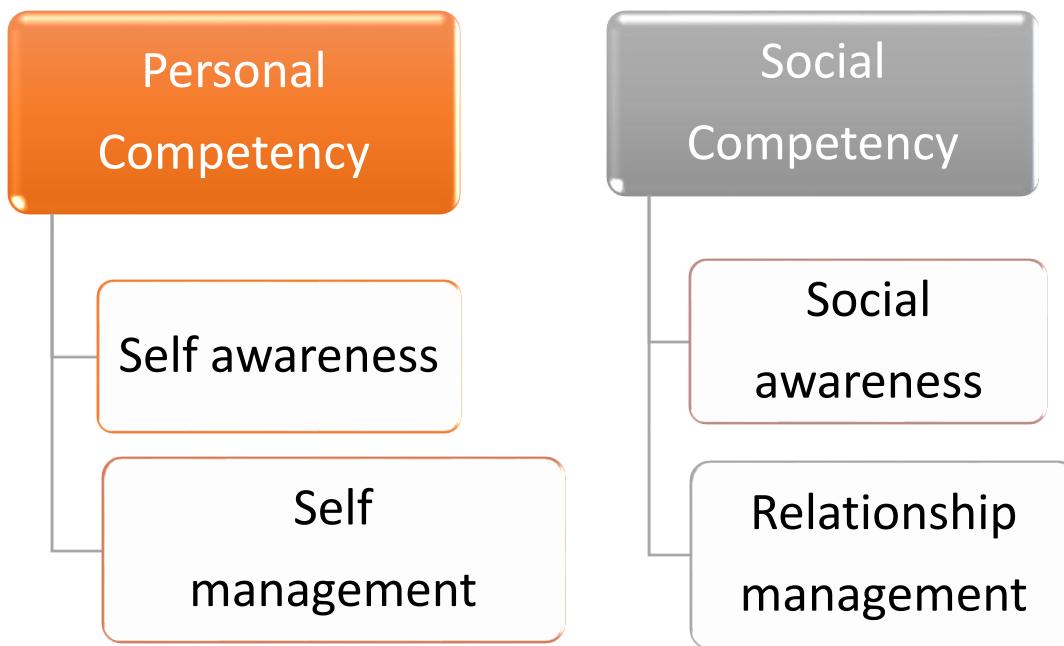
Livesey (2017) analysed that that emotional Intelligence is the ability to recognize, utilise, understand and manage one's emotion in an effective way to release stress, adapt a new environment, cope up with the challenges and reduce conflict.

According to Goleman Emotional Competence is acquired ability which derived from Emotional Intelligence that provides appreciable work performance and these emotional competencies putting under two areas

Personal Competency, it includes within one self e.g self motivation

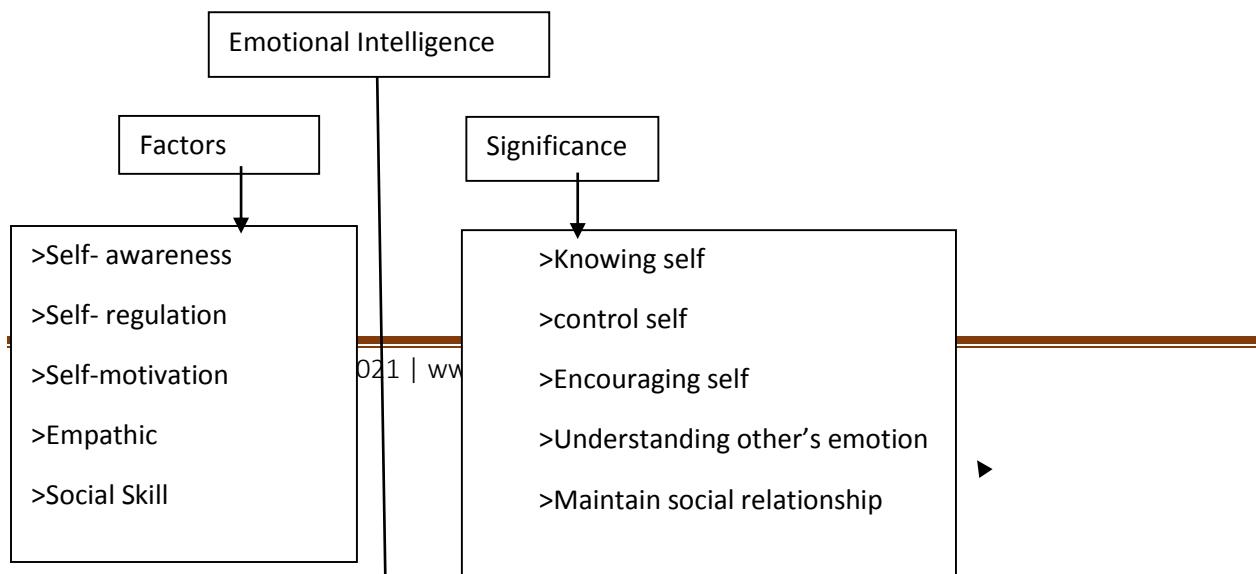
Social Competency, it includes social skills and phenomena

With the time people's behavior has changed and their way of visualize the things has come to a new version. So, the Goleman developed a new version of Emotional Intelligence model where he clearly mentioned four attribute that he divided under two emotional competency areas.



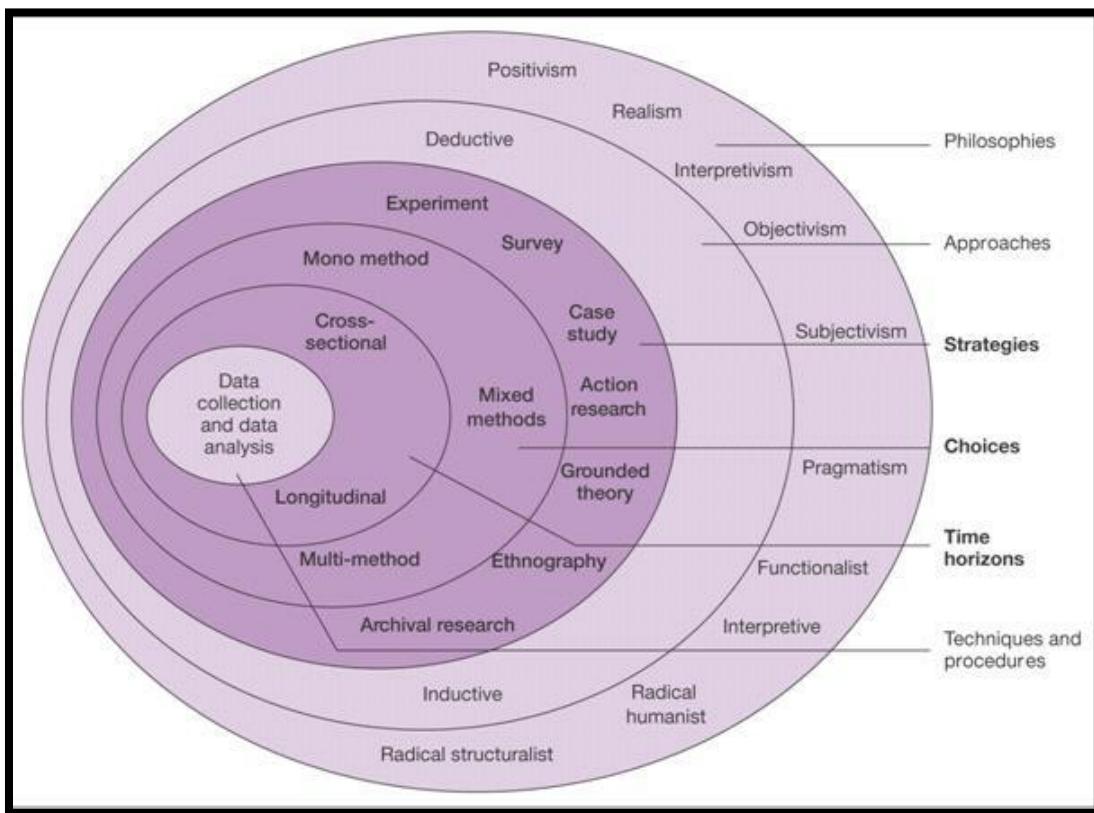
Research Gap

There have been some limitations in this research. First of all, all theories and models have been manipulated by some other research works that has been a significant constraint for the authors to relate Emotional intelligence and personality developments which are directly connected with job performance in the corporate. Apart from that, literature review fails to determine external and internal factors in a workplace that can impact on the EI of the employees.



Research Methodology

This research has taken various tools and techniques to understand the impact of work from home pattern on EI as well as on personality traits of the employees. Research methodology also has defined multiple factors of job performance that are intrinsically related with EI.



This onion like layered structure elaborates phases like philosophies, strategies and techniques etc. Gradual stages of research onion helped the researcher to get the output in a systematic way within time frame. The proceedings are directed from outwards to the inner parts. The inner most part marks the core and last stage of function of this study.

Research Design

This particular research has implemented exploratory research design. No other significant research work has yet been done specifically on this topic. Hence objectives linked are exclusive and innovative in nature. Explanatory research design has been discarded by the researcher as it would have been time consuming (Zou and Sunindijo, 2015).

Data collection

This research has done primary and qualitative data collection based on observation on the IT sector employees. A set of 30 questionnaires have been made based on the work life scenario of

the IT sector employees in lockdown. Google form containing the questions was spread among the targeted populations. This technique was cost and time saving. The only disadvantage of this technique was that, many people left the questions in the mid-way, or did not answer due to personal reasons.

Sampling Method

50 people have been selected as the target population. Among them 30 completed the questionnaire form in this short span of time. 10 people were not willing to answer and another 10 people left the form in the midway. Sample size is clustered on the young generation majorly having two significant age brackets.

Data Analysis and Findings

1. Having work from home, you cannot adjust your time and money in your online painting classes, which you are quite good at. Although you love your full time job, you miss your training. What action would be more suitable for you?

Total number of Respondents	Concentrate on your job to get recognition and promotion	You will search for a less time consuming and cheap painting class	Think deeply what you love to do the most, your full time stable job or painting	You will search for scholarship for your painting passion
27	25.9%	44.4%	22.2%	7.4%

2. Your housemate left a huge mess at the kitchen while you were working from home. What action should be most preferable?

Total number of Respondents	Tell the housemate to clean up the mess	Tell your housemate that this case won't happen in future	clean up the mess yourself	You will assume that your housemate will surely clean it later
30	33.3%	33.3%	13.3%	20%

3. You have joined a new company during the lockdown. You found your new team members to be much younger than you. They seem to be very confident about their skills and you are unsure whether you can compete with them. What will be your preferable action?

Total number of Respondents	Focus on your life outside the job	Work hard and learn all the new skills from the younger team members	Talk to others about this situation	You will realize the fact that you are much experienced than other younger members
30	3.35%	80%	3.35%	13.3%

4. During lockdown you and your roommate were staying in a room. Your room mate never buys non-essential food items and he relies on you to buy them as he was running out of money. You two know each other reasonably well but you two never share financial issues. What action would be most suitable for you?

Total number of Respondents	Do not buy non essential food items during this lockdown	Incorporate new pattern of buying groceries and sharing the cost	Tell your room mate about this issue	You hide your own personal items from your roommate
30	13.3%	43.3%	43.3%	0.1%

5. You have not spoken with your closest colleague for months due to heavy workloads. Even after calling you guys talked about 5 minutes only. What action you should take to resolve this issue?

Total number of Respondents	Knowing the fact that your colleague is changing gradually and he/she does not want spend much time with you	Plan to meet him/her physically very soon to have a good conversation	You realize the fact that people and friend circle change with time you keep calling him/her seldom	You feel severely upset about it knowing nothing can be done
30	7%	66.7%	23.3%	2%

6. You suddenly hear that your team members are saying you are not performing well while working from home. What you can do in this situation?

Total number of Respondents	You can realise the fact that incomplete lockdown there have been some issues that might affect your performance and you have some good sides as well	Ignore gossips you hear about yourself	Put some extra effort to improve yourself to cope up the new working culture	Leave the team
30	16.7%	16.7%	56.7%	10%

Findings of the Study

After detail data analysis we have prepared a matrix that can co-relate all the variables of this research together. The X axis of this matrix is duration of work from home that shows the variance of short term positive/negative to long term positive/negative impacts on personalities. The Y axis here is Emotional Intelligence that has shown the variance from negative personality traits to positive personality traits.

Positive short term impacts on personalities

- *Helpful
- *Humble
- *Independent
- *Precise

Positive long term impacts on personalities

- * Adaptability
- * Patience
- * Compassionate
- * Optimistic

Negative short term impacts on personalities

- *Arrogance
- *Restless
- *Impulsive
- *Intolerant

Negative long term impacts on personalities

- *Self-centred
- *Depression/Chronic Anxiety
- *Dishonest
- *Lazy

Conclusions and Recommendations

The entire literature review of this paper has helped the researcher to analyse theories and models of Emotional Intelligence and personality development in detail. It has been clearly observed that EI is unavoidable factor in case of job performance and job satisfaction in IT sector. EI helps the employees to cope with adverse satiation and thus it is intrinsically related to personality development of the employees. Research methodology part has explained the design of the entire work in detail. This is a qualitative research work having in depth survey questions. Data analysis has shown graphical representation of the responses that has been quite helpful to assess the exact personality traits during the phase of lockdown.

As it has been noticed that higher EI is nothing but possessing optimistic approach in the workplace, this would be very suitable for the IT sector if they provide online mental and physical health check up facilities free of cost. This could remarkable step in employee motivation in the time of new normal. By incorporating this step, employees can work on their EI by developing negative personality traits to positive personality traits.

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Use of Technology in HR

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Abstract

In the past few years, it has been observed that organization are dependent on technology in the field of Human Resources (HR). Every vertical of HR is using technology for the sake of better time management, efficiency in working, for being productive, handling the compensation, evaluating the employees, hiring the candidate through the online means etc. All of this require technology and in this qualitative study the author has tried to gather the technologies used in all the verticals, and there impact on the HR functioning and how Human Resource Information System (HRIS) is being used in the organization, and its effect on the overall functioning of the HR department. Over the years HR has moved from the lower level of management, administrative and maintenance work to a core business and strategic level, this was only possible as the technology came into existence, data analytics took decision making to another level, and HRIS has modified HR administrative work and enhanced the business.

Methodology

This descriptive research focuses on Secondary data. The secondary data is based on Journals, Magazines, Websites, Articles, Blogs, Reports on Technology in HR.

Objective

This study demonstrates on following objectives: -

1. To understand the use of technology in Human Resources and how is it beneficial for HR performance & productivity.
2. To identify the technologies which are being used in HR for increasing the organizational performance.

Keywords

HR technologies, Performance, Productivity, Workforce analytics.

Introduction

In the last decade, it has been observed that there is a significant increase in the number of establishments using Human Resource Information System (HRIS) for the collecting & analyzing the HR data (Wat 2006, Hussain 2007). A lot of technology support various HR functions listed as:

E-Recruitment/ E-Enrolment/ E-Hiring/ E-Enlistment.

Employee Tracking System

Performance Management System

E-Learning

Compensation & Payroll

Effective Talent Management system

Human Resource use technology in order to enhance their strategic decisions, and also help organizations more productive, cost effective. Many researchers have stated that Use of HRIS would certainly help organization reduce the cost by automation of the processes and save time by reducing the monotonous work. In addition, this would reduce the number of HR professionals in an organization and work will be carried out efficiently and effectively. This would help in the listed ways:

Handling Employee personal data and documents

Managers have access to all the relevant data and information

Data analysis becomes a doable task

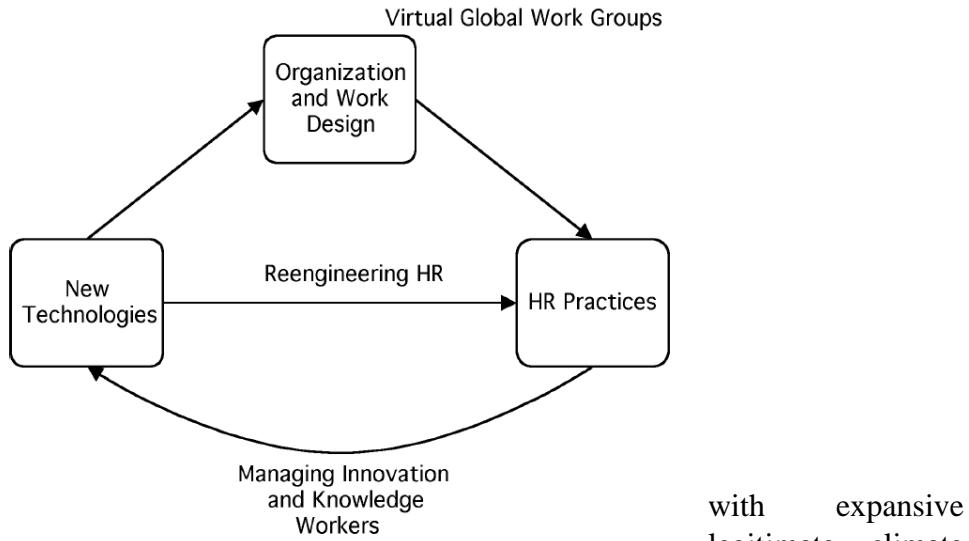
Making decisions which are data driven

Communicating with the workforce

The perplexing Establishments among innovation and HRM outlined in Figure 1 make it vital for the HR calling to receive an all-encompassing perspective on the collaborations among innovation and HRM, instead of simply centre upon a restricted subset of these co-operations. Joined with the moving of the HR part from administrative help in assembling Establishments to vital management uphold in information Establishments, aptitude prerequisites for HR experts are evolving. To address the issues of the difficulties presented by this arising type of HRM, HR experts will require the accompanying wide capabilities:

An authority of the conduct and mental establishment of HRM;

Figure 1



A vital direction information on the and hierarchical structure and measures; and

An arrangement and authority of the new advancements that are affecting the plan of Establishments, work, and HR frameworks.

Given the inclination to see HR as applied authoritative conduct (OB) (Kaufman, 1999), just as the accentuation upon the key parts of HR (e.g., Beatty and Schneier, 1997; Schuler and Jackson, 1987), the preparation and training of HR experts as of now underlines the initial two capabilities. In any case, as called attention to by Karakanian (2000), most corporate HR offices need huge numbers of the specialized essentials and abilities contained inside the third competency. To meet the innovation competency, HR experts must obtain information and abilities identified with innovation.

Research Objectives: -

To understand the use of technology in Human Resources and how is it beneficial for HR performance & productivity.

To identify the technologies which are being used in HR for increasing the Establishment performance.

Analysis

Technology in E-Recruitment & Selection

In the recent year's study, companies have started using internet as a major tool in hiring. E-Recruitment as a term be it online recruitment or e-enrolment, means that sourcing of job information is carried out using Internet. Hoffman 2001 defined that E-enrolment means that internet is being used for Sourcing of a candidate, selection of the candidate, communicating and

managing the entire process of recruitment and selection. E-recruitment can be said as advertising of the jobs, getting resumes, collecting and maintaining database of the candidates and the incumbents.

Bussler 2002 & Davis 2002 stated that it has been clearly visible in the recent years that human resource is impacted by a huge margin via internet. The hiring of candidates have increasingly relied on the internet and the computer based technology advancements, which is also called as online hiring says Mottl & Hogler et al. 1998.

HR Portal 2003 gave another dimension that employer and employee can interact with each other using internet, which included downloading resumes, conducting tests, and also contacting valid and appropriate candidate in order to hire them using the power of online tools.

Below listed are the benefits of the online hiring:

1. Considerably low cost of hiring
2. Chance to attract and hire better candidate.

Every organization require a job fit candidate for the organization and also a cost-effective and a quick system to access the candidate, which can be achieved by online tests, while if in case we need to hire that candidate wh need a highly competitive ecosystem says Chapman 2003. A way of achieving the desired goal they use internet to attract the candidates, Cullen, 2001. While taking things into practical aspect, is affirmed that e-human resource management is leading to a considerable change and hence should be considered as an valid and important development in the field of human Resources (Snell 1998, Gueatal 2005). (Grossman & Pomerory 2000) The attraction of the potential candidates and make them accept the job has given a important role the E-recruitment is playing in the organization's success.

Techno-Communication:

Technology in the communication is pretty much essential as all of the human resources functions and policies are available through intranet. Formulation of any new policy and function is delivered and well communicated with the help of intranet (Elderman 2004). Furthermore it becomes easy to refer, retrieve and revamp any policy at any point in time, and saving valuable time for any candidate seeking to refer a policy. Whereas, and intranet also allow to connect through other departments in order to retrieve the required information and there exist no longer the need to go physically or try calling through phones. Keeping aside the passing of the job related messages and e-mails, this also used in sending messages, birthday wishes, retrieving e-mails from any date and transferring it to the inbox. In addition, it helps the employer to maintain the employee record and entire database that auto generates the birthday message. In addition, it selected the e-mail address from the database and auto generates the message, the employee receiving a birthday wish from the senior manager as soon as he/she opens the mailbox, gives the employee a feeling of satisfaction and ownership (Thomas 2007 & Datta 2007).

There is an entire cycle which is derived by HRIS when a new employee is onboarded. The mail is generated to inform the security about the new employee, even the switchboard is checked with the same, and legal department is notified about any compliance or any registration issues.

"Employee Suvidha" Indian Oil's most promising feature, stated by Datta and Antony 2007. It drives the listed features:

Employee Leaves

Taxation

Loan & Loan statement (Housing/Car)

Overtime

Payslip

PF statement

IT Card

This saves a lot of time of the HR personnel, whereas earlier it took a lot of time answering the queries from the employee.

Some features which are exercised by the organization using technology.

Low expense rate

Availability and accessibility to more information

Good employee interaction

Better and quick communication

Better feedback system

Documentation made easy

Intra department cooperation.

Better FGD's (Focus group discussion)

Technology in Workflow advancements (Business Process Management):

Workflow management is significant capacity under the representative access choice segment, with the help of Workflow technologies an individual could do it can easily designate an affirmation process for any changes that might happen in the process Scroggin 2008. It can be understood through an example, a representative solicitations downtime, the chief at that point may affirm or object this time, on the off chance that they endorse it, the data may move to HR to

make a last endorsement. In the event that the director is out of the workplace, they will commonly have the ability of assigning a transitory approver while they are out.

Technology and Applicant Tracking Systems:

Establishments are continually confronting a day by day competition of wild rivalry for presented resources while offsetting that with decreases in recruitment financial plans and reducing quantities of resources to direct the recruitment cycle. "Workplace trends" which was published in 2008 by the society of HRM suggest/indicates that:

1. Higher demand for the skilled workforce.
2. E-recruiting tools are in demand.
3. Higher competition for a decreasing workforce supply.
4. Higher growth of Apps providers.
5. Higher BPO that includes Recruiting.
6. Higher use of assessment tools in recruitment & selection process.

Technology in Performance management system (PMS):

Performance management system is a very streamlined process, evaluation of any employee required a systematic approach. As the technology is driving every vertical in the organization, PMS tools are being used in almost every organization. With is the Employer branding is been taken care of as, HRs are able to carry out the effective people relationship management (Vasundhara 2007). Performance management system software is used to carry out listed functions:

1. Employee Evaluation
2. E-Mail reminders
3. Competency Mapping in accordance to organizational goals
4. Personal and Professional Management strategy
5. Productivity report generation
6. Automation of Performance management workflow/System.

"Performagic" is Infosys's BPO online Performance Management system; this automates the entire process of PMS itself. The tool was developed by Infosys Tech. moreover it is used entirely by Infosys group of company; well this tool is accessible only two times a year when appraisal has to happen. It is linked in between the departments and is accessible through intranet, so that there exists transparency in the organization. In addition to this, it also performs:

1. Appraisal feedback capturing & analysis.
2. Past records of the performance.
3. Comparative analysis of current and past performance.
4. Confidentiality of the forms and policy is maintained
5. Can trace appraisal at any given point in time.
6. Transparency and effective time management.

Technology in Compensation & Pay Roll:

The function of the payroll model is to automate the entire payroll process via collecting all of the employee data like employee attendance, reporting time, deductions, taxation and this helps in generating the entire pay-checks and taxation reports. While data is entered by the HR Admin, it saves the time in generating the above mentioned reports which is a good move altogether says Partho 2005. Human Resource management system solution INC 2007 mentioned that the payroll initiated the accounting information and send it to the general ledger to finally make a complete pay cycle. Doing all of such reports on demand, making the last-minute changes without any hassle is the biggest advantage, also it saves a lot of time and the accuracy is maintained. Flexible features are listed as:

Simplified compensation processing

Comprehensive reporting

Check printing

Direct Deposit

Expense Management

Earning.

Technology Trends and technological Implications

Along with the HR functional Area trends and technology have brought great attention to the management implications to the business decisions and strategic layouts, some of which are listed as:

Talent acquisition function is more reliable on e-recruitment.

Internet usage for delivery and utilization of human resource application services.

E-learning is practiced more.

HR Data privacy is a major thing to look into.

Better usage of time and resources.

Basic Human resources transaction are made strategic application using HRIS software/application.

Experiencing more outsourcing of HRISs.

ROI is being calculated for human resource technology systems.

Conclusion

The main objective of this particular research was to observe the impact of technology on the Human Resource management system and Human Resource Information System on HR and Business Excellence. It was observed that, as the technology came into function the workload got reduced and HRs were able to focus more on the strategic role than just support function. Also HRIS was used as the strategic tool and was used in optimization of the workflow and the work procedures. While both specific HR programming and HRIS have its worth, HRIS directs the path toward the future by improving cycle efficiencies as well as making HR a genuine colleague, permitting one to help drive the association toward reasonable, long haul business achievement. In this manner, HRIS can assume a functioning part in vital business greatness developments. Utilizing innovation choice in this manner has given chiefs fast admittance to job significant data, and a proficient stage to scatter such data to its workers that further to improve more prominent productivity, viability, consistency, competency, association adaptability, and client - centre and benefit duty on the loose. Utilizing high innovation hence may prompt both Human Asset and Business Greatness across areas and ventures.

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Employee Engagement and Turnover Intent

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Abstract

Most service-based organization focus placing greater emphasis on reducing the intent of voluntary turnover intents. The present study examined the cross-sectional profiles of employee engagement, turnover intent, organizational commitment and job satisfaction among private banking sector employees. Path analysis technique modelling revealed the following cases: latent profiles of employee engagement and organizational commitment. Second: those respondents who are engaged did not have voluntary intent of turnover and are insignificantly correlated to job satisfaction (both intrinsic and extrinsic). Third: Continuous commitment as a construct significantly impacts turnover intent. Further the practices of human resources management in Indian private banks and those with foreign banks differentiated the approach towards employee engagement practices and awareness levels. The employee engagement practices in rural sector banks of the selected geographical scope (Indian private banks) revealed lack of basic infrastructural facilities, low FTE, low customer service delivery time and the delineation of the employee engagement practices from the corporate offices of the respective bank.

Keywords

Employee engagement, Turnover intents, Organizational commitment and Path analysis technique

Introduction

The GALLUP study in 2016 for engagement reveals that only 29% of millennial are engaged at work, 16% are actively disengaged, 55% are not engaged. This is not so good a picture of engagement and it is necessary for human resource (HR) managers to understand the importance and sensitivity. Schaufeli and Salanova (2007) claim that engagement is “essential for contemporary organizations given the many challenges they face and Macey et al. (2009) argue that organizations can gain a competitive advantage through employee engagement. Today’s employees are knowledge workers who look out more than job descriptions, promotions, career and growth. What they look for is contended feeling toward contribution to individual and organizations” growth, collaborative effort, openness, feeling of empowerment etc. For these companies, HR managers must adopt a social contract of employment where employees have freedom towards employment aspects (David Brown, et.al). Another aspect that is evident and is inevitable today is, considering “engagement” as a top management strategy.

This challenge is evident in all sectors of the country. Indian banking sector too is inevitably facing challenge in the field of the “human resource management” aspect. Indian banking sector had an uplift face after the government adopted the LPG policy in 1991. After the policy implementation a need was felt where the banks needed to run in the competitive arena by integrating human resource management with business policies. With different reforms in banking sector there lays a challenge to the employee for providing with enhanced performance. There is a need felt by human resource managers at the banks to have innovative practices that shall boost the employee productivity and at large contribute to banking policies in the country.

2.Literature review

2.1 Employee engagement

Reducing turnovers or gauging the intent to stay or leave though dependent on many factors, employee engagement is seen extremely evident in today's contemporary organizations. Employee engagement is a relatively new concept (Macey & Schneider, 2008) and the factors that produce engagement may be different from those that produce more traditional employee outcomes such as job satisfaction and organizational commitment (Macey et al., 2009). Numerous writers have shared their view of engagement as a key driver of individual attitudes, behavior, and performance as well as organizational performance, productivity, retention, financial performance, and even shareholder return (Bates, 2004; Baumruk, 2004; Harter, Schmidt, & Hayes, 2002; Richman, 2006). Given the importance of engagement what lies as a challenge is how to promote, create awareness of the significance, how to measure and how to communicate the engagement levels. However, controversy exists regarding the definition of employee engagement. Macey and Schneider (2008) note that there are numerous definitions of the construct. In his work on personal engagement Kahn (1990) suggested that engagement involves “the harnessing of organizational members' selves to their work roles; in engagement people employ and express themselves physically, cognitively, and emotionally during role performances” (p. 694). As suggested by the descriptions above, employee engagement has also been criticized for lacking a consistent definition and measurement (Masson, Royal, Agnew, & Fine, 2008). In a service-based industry that of banking where customer facing roles are high engagement levels of employees is significant to the customer service quality and also impacting the customer retention in long run. A key finding by the Northwestern University Forum for People Performance Management and Measurement is that organizations with engaged employees have customers who use the company's products and services more often and with higher satisfaction than customers of companies with disengaged employees. Satisfied customers cost less to serve, are repeat customers, and are more profitable customers for the organization. Leiter (2005) also found that engaged workers are full of life, are optimistically associated to their work and feel they are doing their jobs effectively.

2.2 Organizational commitment

Employee's contribution is aligned with individual growth and success along with organizations too. In contemporary organizations where job security is a vague term and that retention is a

challenge, commitment of employees is significant. (Allen& Meyer, 1990) defines organisations commitment as psychological attitude that attaches an employee to an organization in a manner that reduces his or her turnover. Organizational commitment is significant due to the impact it has on other organizational variables like reduced turnover, increased job satisfaction, increased motivation, enhanced organizational citizenship behavior etc. In a meta-analysis study conducted by Jaramillo et al. (2005) it had 51 empirical studies which reported that there exists a positive relationship between organizational commitment and job performance. For service-based organizations like those in private banking sector where the role demand is quite high with high workload varying at different levels of employment, being committed towards the organizations(banks) helps in reducing the HR costs at substantial rates.

2.1.1 Affective commitment

An employee's feeling towards the organisations or how he/she feels valued towards the organisations is the affective component. Thus has a huge impact on the performance. Bakan et al. (2011) stated, the success of an organization depends not only on how the organization makes the most human competences, but also how it encourages commitment to an organization. As a construct of organizational commitment, affective commitment impacts the construct of continuous commitment, and thus can act as stimulus to bring in talent pool into the organisations. High affective commitment employees exhibit positive work experiences. In the banking sector where customer facing roles are high across different levels, what employees feel about the banks in house and while they are on field will shape the level of affective commitment and thus will mold their intent to stay within the organization. In accordance with maintaining the turnover rates minimal, affective commitment plays a role and also ensures the Person-organization fit for the banks

2.1.2 Normative commitment

Normative Commitment reflects commitment based on perceived obligation towards the organization, for instance rooted in the norms of reciprocity (Jaros, 2007). As a norm employees feel that working for and towards the organization is their duty and a value. An organization wellbeing practices disseminate to the employees about their commitment towards employees. Organizations that value loyalty and integrity will see employees with high normative commitment.

2.3 Job satisfaction

According to (Locke, 1976) Job satisfaction describes how much an employee likes/dislikes his/her job and various aspects of it. Job satisfaction reflects an employee's feelings and beliefs, and develops through cognitive, emotional and affective reactions to the job itself and its dimensions (Locke, 1976; Organ and Near, 1985; Judge and Ilies, 2004; Rich et al., 2010). With this, it is evidently clear that satisfaction is related to the personal feeling and also with the job characteristics that help him feel positively or negatively about the job. LaLopa (1997) indicated that when employees felt satisfied with their work, they were more willing to be committed to their

resorts and to stay longer in their jobs than those who were dissatisfied. Congruently satisfaction leads to employee commitment. Which in turn leads to impacting the intent to stay or leave the organization. Porter (1962) opined Job satisfaction as the degree to which job needs are fulfilled and how much of this fulfillment is perceived by an employee.

2.4 Turnover Intent

Turnover intention as a topic is significantly researched today. Researchers have made attempts to find the close association turnover intent has with voluntary turnovers and the costs that are associated with it. In addition to the costs related to recruitment, selection, and training of new employees, the literature also emphasizes the loss of explicit and essential tacit knowledge, built over time through socially complex mechanisms (Barney & Wright, 1998; Cascio & Boudreau, 2010). Furthermore, turnover causes disruption to an organization's operations, potentially leading to a decrease in sales and loss of customers (Cascio & Boudreau, 2010). In the literature on the antecedents of turnover intention and turnover itself, evidence points to general job satisfaction, satisfaction with different job characteristics, as well as external variables, such as perceived job alternatives (Griffeth, Hom, & Gaertner, 2000; Hom, Caranikas-Walker, Prussia, & Griffeth, 1992). Organizational justice, organizational commitment, and work engagement are also considered antecedents of turnover intention (Alfes, Shantz, Truss, & Soane, 2013; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Harter, Schmidt, & Hayes, 2002; Tett & Meyer, 1993). According to the literature, researchers propose a negative relationship between engagement and turnover intention

3. Method.

3.1. Sample and variables:

This study included an original sample of 347 sample respondents from Indian private banks and Foreign banks (54.8% from urban areas, with 37.75% of respondents falling in the age group of 25-30 years and a gender distribution of 87.3% of male & 12.7% being female. There is a variation engagement level based on gender, age, experience and qualification of the employees in Indian settings (Garg (2014). We used the Utrecht work Engagement scale (Wilmar Schaufeli & Arnold Bakker 2004) defining the three constructs (vigor, absorption and dedication) to create engagement profiles; Minnesota Job satisfaction scale (MSQ-short form) for measuring and defining the Intrinsic and extrinsic satisfaction profiles. Along with this, Allen and Meyer model (1991) is used to measure and determine Organizational commitment levels (affective, normative and continuous). Turnover intent as a variable is measured though self monitored questionnaire having two constructs (intent to stay and intent to leave) derived from Mobley (1977) turnover intent model.

3.2. Analytical methodology

The researchers have analyzed employee engagement constructs (vigor, absorption and dedication) through mean values of these constructs. Organizational commitment variable is determined by the three constructs affective, normative and continuous wherein the arithmetic average values of these constructs are used in determining the respective levels and then a whole of commitment levels. Job satisfaction variable is determined by two variable- intrinsic satisfaction and extrinsic satisfaction. The researcher has analyzed through the mean values of these constructs the level of satisfaction. Turnover Intent is identified through intent to leave variable. The mean values help in determining the level of intent. Correlation of employee engagement with voluntary turnover intent, job satisfaction factors and organizational commitment factors are determined by Karl Pearson correlation co-efficient and Regression analysis is also done. The correlations have been tested through the ANOVA technique, validating the results through the F –test values. Regression test are applied to test the stated Hypothesis using SPSS software

3.3. Results

Given the data collected by Comp data survey reveals that Banking & Finance industry has a high turnover rate of 18.6 percent which is one of the highest among all the industries and associated with talent struggles in this service-oriented sector, there is no better time for this study. The outcome of our investigation produces an explicit overview of employee engagement trend in the private banking sector (Indian and foreign banks). The results captured the health of the awareness of employee engagement and engagement levels at different employment cadres. With delineation of HRM practices from the corporate office to the ban branches the finding shows deviation in awareness levels and engagement levels too. In order to fulfill the measurement of variables Universal pretested questionnaires defining the constructs for each variable for work engagement is used. UWES (Vigor, Absorption & Dedication) Wilmar. B. Schaufeli and Arnold. B. Bakker (2004) developed through Occupational Health Psychology Unit, Utrecht University, Preliminary Manual, Version 1.1, December 2004, (UWES) titled as UTRECHT WORK ENGAGEMENT SCALE. The following scales have been used by the researcher. Reliability is measured by Cronbach's Alpha 0.937 with 17 items for organizational commitment variable and construct. TCM (Affective, Normative & continuous) For measuring the organizational commitment variable the researcher has made use of the model developed by Allen and Meyer, 1990. A revision of the said model is called as TCM Employee Commitment (three component model of employee commitment) developed by John P. Meyer and Natalie J. Allen, Department of Psychology, The University of Western Ontario, 2004. Reliability Measure is measured by Cronbach's Alpha and No of Items .767 with 18 number of items. Minnesota Job satisfaction scale (MSQ)-Extrinsic and intrinsic. This scale is a byproduct of Work adjustment project which was undertaken at Industrial Relations center, University of Minnesota. It measures satisfaction on different aspects of work environment. Reliability Statistics MSQ Reliability Measured by Cronbach's Alpha .865 with No of Items 14. Turnover intent (TOI) The researcher has made use of questions considering the Mobley's model of turnover process. Considering this, the researcher has made use of construct –

intent to leave and intent to stay in the organizations. Reliability Measured through Cronbach's Alpha .936- No of Items 3

4.1 Descriptive statistics –Mean -Engagement Levels in bank types

Bank Type	Frequen cy	Perce nt	Employee engagement mean levels
Urban	160	50.5	4.8 2
Rural	157	49.5	4.9 9
Total	317	100.0	

Source: Primary data

A critical observance of the mean of mean (4.8 and 4.9) is an obvious indication of high employee engagement level for urban and rural banks. Global reports confirm a dismally low employee engagement of just 33% and an employee turnover rate of 24% (Mathew Gregory,2020). The researcher on analyzing the data through UWES, construct wise determined the mean values in urban and rural sector. Independent mean values for urban sector Vigor 4.87 (high) and the sample respondent is engaged A few times a week. It can be interpreted through the scale measurement that the sample respondents are Ready to invest efforts, not easily fatigued, and persist while in difficult times. Level of absorption 3.99 where the respondents are engaged A few times a month and are completely immersed and so find it difficult to detach from work. Level of dedication 5.57 (high) and respondents are engaged A few times a week and exhibit a Sense of significance, enthusiastic, feeling of inspiration and challenges for the job. Overall engagement 4.81 (high) and are engaged Once a week It can be this concluded that Vigor and Dedication contribute to being engaged once a week Sense of significance, enthusiastic, feeling of inspiration and challenges for the job Vigor and Dedication contribute to being engaged once a week. For the rural sector, Level of vigor 5.09(high) and the respondents are engaged Once a week and it can be interpreted that they feel like going to work and being resilient at job and perseverance contribute in high vigor. However, less customer base and 80 hours' /week non-compliance exist. According to BCG report (2011). The most-efficient business models are those that ensure that the maximum proportion of staff is customer-facing and the observed internationally is 82 percent of bank staff deployed in customer-facing activities. The Level of absorption 4.14 (average) and respondents are engaged a few times a month Aren't immersed and feel happy only when they feel intensely, However the less customer base does not allow them to do so hence the level is average. Level of dedication 5.76 (high) Once a week. Sense of significance, enthusiastic, feeling of inspiration and challenges for the job. Well defined job descriptions so find meaning, Bi annual; feedbacks make them proud of the work. Overall engagement for rural bank is 4.997 (high) and are engaged once a week. Out of these Vigor and Dedication contribute to being engaged once a week The researchers thus can interpret that employee engagement amongst the employees of sample selected are mainly due to

vigor and dedication. This portrays that the employees have the readiness to put in effort, do not get exhausted easily, and to persevere in the situation of difficult times. In terms of dedication, it can be concluded that employees robustly recognize with their work because it is experienced as significant, inspirational, and demanding. Besides, they usually feel enthusiastic and proud about their work. The practices that are followed by the bank branches in terms of human resources help in maintaining the engagement levels. The researchers could analyze the challenges faced in engaging themselves per say urban and rural. Factors leading to challenges for engaging employees in Urban and rural sector through focused structured interview of the branch managers. Bank manager(n=41) were interviewed for determining awareness levels and challenges faced. Response rate was 89% wherein it was analyzed that in Urban sector challenge is -Ongoing practices, Centralization of engagement decision, Volume of transaction, workload, Stress, Cultural mapping. With the rural sector the factors posing challenge to the branch manager as line managers are that selected branches-(Have less employee strength, customer visits are not consistent, service delivery time is less than 20%) Low volume/desk/transaction/day/person. The reason being due to literacy problems literacy rate for India in Census 2011 is 74.04, with that of males and females at 82.14 and 65.46 respectively. In rural areas the literacy rate is 68.91 (male: 78.57, female: 58.75) and in urban it is 84.98 (male: 89.67, female: 79.92) (Census India, 2011), distance problem (distance from houses to branches), most of the branches employees have high idle time. So the service delivery time which is 80 hours/week is not met.

Table 3.2 Estimates using ANOVA

The effect of employee engagement on turnover intent of employees (Indian Private banks)				
Category- Urban	R	F	Sig	Coefficient
Vigor	0.106	1.804	0.181	-0.126
Absorption	0.098	1.534	0.217	-0.138
Dedication	0.146	3.425	0.066	-0.19
Category- Rural	R	F	Sig	Coefficient
Vigor	0.346	21.038	0.001	-0.421
Absorption	0.36	23.13	0.002	-0.459
Dedication	0.359	22.99	0.000	-0.414
The effect of employee engagement on turnover intent of employees (Foreign banks)				
Category- Urban	R	F	Sig	Coefficient
Vigor	0.773	6.376	0.018	-0.512
Absorption	0.621	17.57	0.0001	-0.372

Dedication	0.610	16.623	0.002	-0.372
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Source: Primary data

Table 3.2 shows that there is no significant impact of employee engagement over turnover intent of sample respondents with an obtained value of F-value (1.804) has a significant p-value of -0.126 which is greater than the alpha (0.05). This affirms that effective employee engagement does not vary with regards to employee's turnover intent to stay and leave at 5% level of significance. However, if the rural sector banks are considered the employee engagement is significantly impacting the turnover intent of the sample selected respondents. Each construct of employee engagement moderately affects the turnover intent with significant F test values at 5 % level of significance.

Table 3.3 The effect of job satisfaction on employee engagement-estimates using ANOVA

Type of bank -Indian Private Bank			
Category- Urban	R	F	Sig
Vigor	0.40	7.065	0.00
Absorption	0.34	5.325	0.00
Dedication	0.397	6.824	0.00

Category- Rural	R	F	Sig
Vigor	0.641	108.1	0.00
Absorption	0.348	82.66	0.00
Dedication	0.412	108.5	0.00
Type of bank-Foreign banks			
	R	F	Sig
Vigor	0.43	6.374	0.01
Absorption	0.21	7.452	0.011
Dedication	0.243	1.76	0.195

The table 3.3 evidently shows job satisfaction affecting employee engagement significantly (5% level of significance) with each construct with a moderate level of correlation between the two. Mokayal et al. (2014) studies show Low engagement and job satisfaction can contribute to multiple organizational problems and have been associated with increased levels of turnover and absenteeism, adding potential costs to the organization in terms of low performance and decreased productivity. The present study contradicts, showing satisfaction and engagement to be positively

correlated and significant. Although there may be room for satisfaction within the engagement construct, engagement connotes activation, whereas satisfaction connotes satiation (Erickson, 2005).

Table 3.4 Engagement levels

Type of bank -Foreign Bank				
Constructs	Level of vigor	Level of absorption	Level of dedication	Overall engagement
Leve l	5.16(high) Once a week	4.05 (average) A few times a month	5.82 (very high) A few times a week	5.00 Once a week
Interpretation	Ready to invest efforts, not easily fatigued, and persist while in difficult times	Completely immersed and so find it difficult to detach from work	Sense of significance , enthusiastic, feeling of inspiration and challenges for the job	Vigor and Dedication contribute to being engaged once a week. (Gallup survey for engagement)

Source: Primary data

The researcher has proposed and validated a model considering variables under study- employee engagement, job satisfaction, organizational commitment and turnover intent of employees. Proposed model for engagement and turnover intent of employees (AMOS SPSS PATH ANALYSIS)

Table 3.5 Regression weights measures.

Variable		Variable	Estimate
Job Satisfaction	□-	Employee engagement	0.586
Commitment	□-	Employee engagement	0.323

Turnover Intent	□-	Employee engagement	-0.129
Turnover Intent	□-	Commitment	0.189
Turnover Intent	□-	Job Satisfaction	-0.336

(Source: primary data: Questionnaire)

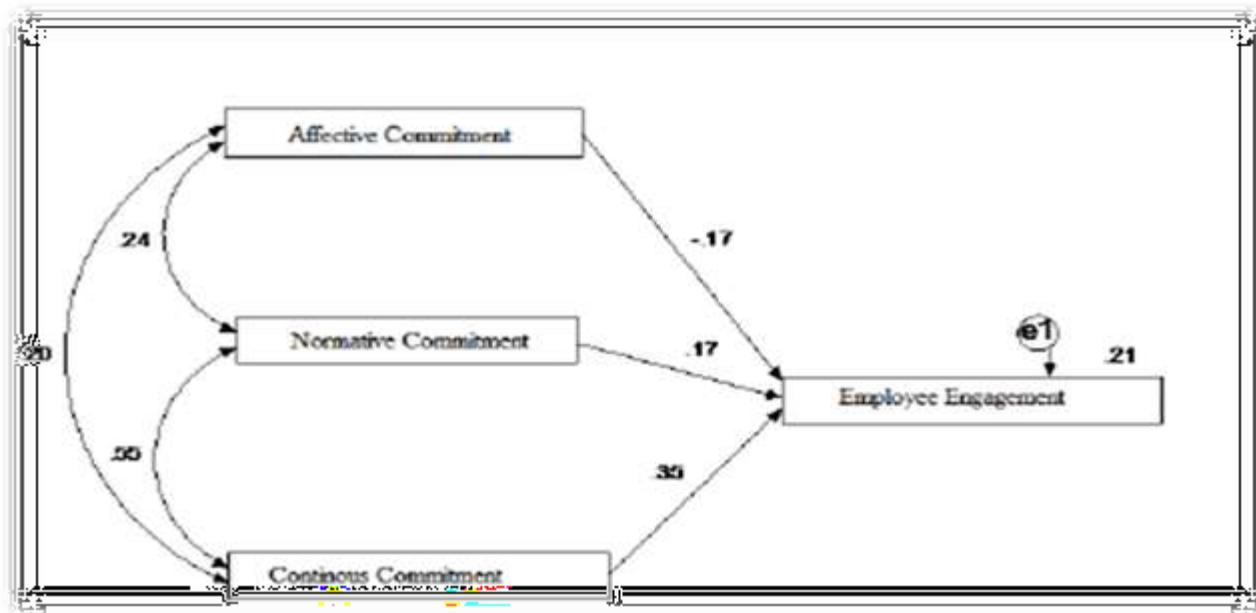
From the regression table 3.5 above and the figure it can be analyzed that

- Employee Engagement has impact on Job Satisfaction.
- Employee Engagement has impact on Commitment.
- Employee Engagement has no impact on Turn Over intent
- Commitment has impact on Turnover intent.
- Job Satisfaction has negative impact on Turnover intent; it means that if less job satisfaction, more turnover intent would be there.

Table :3.6 Regression Weights: (Group number 1 – Default model)

Variable			Estimate	S.E.	C.R.	P
Employee engagement	□-	Affective Commitment	-.290	.085	-3.418	***
Employee engagement	□-	Normative Commitment	.220	.077	2.874	.004
Employee engagement	□-	Continuous_ Commitment	.454	.077	5.891	***

Source: Primary data



(Source: SPSS output for primary data)

From the regression table and the figure, it can be analyzed that: Affective Commitment has the negative impact on Employee Engagement as it has negative value. A number of research studies have shown employee engagement to be positively associated with intent to remain with one's organization (e.g., Hackman & Oldham, 1980; Harter et al., 2002; Schaufeli & Bakker, 2004). Normative Commitment has no impact on Employee Engagement as it is not significant. Continuous Commitment has the positive impact on Employee Engagement. Coffman and Gonzalez-Molina (2002) argued that the greater an employee's level of affective commitment, the stronger their engagement with the job. This contradicts with the present study results. As per the Inter correlation and regression weight analysis continuous commitment has a significant and major impact on the turnover intent of the sample selected respondents.

Suggestions

It is necessary that the human resources practices that are designed, validated in terms of employee engagement should be communicated with an object of making the employees aware and to comprehend them for the benefits after the practices and or surveys conducted by the corporate office or regional head office to the bank branches in both rural and urban areas. Awareness of practices like employee engagement should be done at these selected banks. Different activities like 'employee gatherings with family', celebrating the non-financial reward practices like 'employee of the week/month/year' through the bank billboards arrangements, Sports day arranged for engaging employees physically and mentally will help engage employees. The Indian banks and foreign banks communicated that Engagement surveys are carried out on online basis by the corporate offices. Literature however says that since it is a cognitive concept (a latent

variable in terms of measurement) the surveys should be carried out in consecutive manner (bi-annually or quarterly). This would help the banks to measure engagement levels in an aggregative manner and then act upon.

Conclusion

Thus, the preliminary investigation by the researcher concludes that employee engagement is necessary and that turnover intent can be reduced by having sound and effective employee engagement and commitment practices. It is however envisaged that there is a lack of focus on the definition, measurement of the variable and that the application of this concept is its growing stage especially in the banking industry as a service-based organization. This study provides an analytical framework for employee engagement along with turnover intent. The researcher has covered a comprehensive approach in presenting the variables under the study in a model which show the inter and intra impact of the variables. The model proposes that seeing to employee engagement will help this line function to manage commitment levels of employees. Also, that since organizational commitment is an intermediating variable it will help the banks to define, design and implement separate practices for the samples under study. This is overall will have a positive impact upon reducing the employee's intent to leave the bank branches and reduce the turnover rate at bank branches

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Role of Indian Government in combating Covid-19 Epidemic

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Abstract

COVID-19 pandemic is one of the few in the history of mankind and presents an enormous global challenge requiring intervention on unprecedented levels and is spreading fast globally. SARS-CoV-2 is a novel virus spreading exceptionally fast and carries high mortality.

The COVID-19 pandemic in India is part of the worldwide pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case of COVID-19 in India, which originated from China, was reported on 30 January 2020 (Kharb, Kapoor, & Madan, 2020).

The worldwide Coronavirus pandemic has a very deep impact in India so far, the world's second most populous country with an estimated population of 1.38 billion.

Keyword

Coronavirus, COVID-19, Government of India, Policy, SARS-CoV-2, Pandemic, Quarantine and isolation, Social distancing, proactive measures, public health initiatives, future perspectives.

Introduction

As of 29/07/2020, there are 4,46,84,011 active cases, 32,856,483 recovered cases and 11,76,726 reported fatalities worldwide whereas, there are 75,52,212 active cases in India, 66,00,000 recovered cases, and 1,14,837 reported fatalities (worldometer, 2020).

The healthcare set ups globally are being overwhelmed to treat the serious patients with the needs of medical devices such as ventilators for which there is a global shortage. The COVID-19 pandemic has clearly shown the need for further research, developing new vaccines and treatment to accelerate progress towards achieving sustainable development goals and universal health coverage. To prevent the disease is the only option countries have at the moment for which nationwide lockdown have been implemented. The Government of India has taken several steps from implementing lockdown, announcing a relief package of Rs.1.7 lakh crores, and rapid

improvement in testing capacity among many others. In this article we present the initiatives taken by government to combat COVID-19 pandemic specifically related to the health products.

Purpose

This manuscript highlights potential areas of health research which are likely to be impacted by COVID-19. The main objectives of this paper are to provide knowledge about Central Public Health strategies, policy and guidelines followed to tackle COVID-19 situation, Government Implementation and response on it, Government necessary precautions against the pandemic, Measures needed to be followed by the government and what are the Government future perspectives against such viruses. It may help improve the understanding of this epidemic and describe the psychological impacts of this pandemic.

The report will give us a brief idea about what proactive measures are being followed by the government to combat the pandemic with the help of global approaches and guidelines from the Ministry of Health and Family Welfare, and the Ministry of Home Affairs.

So, basically this paper reviews and shares specific measures for successful prevention and control of COVID-19 in India, which could provide useful learning for other countries.

Objective

- ❖ To understand the Central Public Health strategies, policy and guidelines followed to tackle COVID-19 situation.
- ❖ To study the Government necessary precautions against the pandemic.
- ❖ To know the perspectives of public towards the Government measures taken in combating covid-19.

Literature review and Research gap

Coronavirus disease (COVID-19) is a communicable disease caused by a newly discovered coronavirus strain. WHO (World Health Organization) has declared COVID-19 to be an epidemic? 200+ nations try to contain the spread of the disease and consequent human life losses with social distancing through lockdowns. Our nation is capable enough to combat the pandemic with proactive measures in line with global approaches and guidelines from the Ministry of Health and Family Welfare, and therefore the Ministry of Home Affairs. In the unifying spirit of participation, the govt is engaging with all citizens to combat the virus. A dashboard of advisories, status across States is out there online which has helped the public a lot.

Several other resources & research papers helped me to have an idea on the process and techniques required in combating coronavirus (India Government, 05/05/2020), Global research on coronavirus disease (COVID-19) (World Health Organisation, 2020), Personal Protective Equipment: Challenges and Strategies to Combat COVID-19 in India, Can India stay immune enough to combat COVID- 19 pandemic (Rakshit & Basistha, 2020).

This research provides me with an overall view of the current situation of the country and the difficulties faced by the publics of the rural areas because of the inappropriate measures taken by the government in the back-ward areas and what necessary precautions are being undertaken in the ongoing process of combating the coronavirus and what are the government future perspectives against such viruses.

Current Scenario in India

The worldwide Coronavirus pandemic has a very deep impact in India so far. As of 29/07/2020, there are 75,52,212 active cases in India, 66,00,000 recovered cases, and 1,14,837 reported fatalities.

India presently has a fatality rate of 2.3% (compared to global average of nearly 4%) and less than 5 out of every 100 COVID patient needed to be ventilated. There are also continuing improvement in terms of testing, PPE, treatment and hospitalization access and overall rate of recovery. A probable natively developed COVID-19 vaccine has also been permitted for Phase I and II of human clinical trials.

COVID-19 has altered life, Medical and Rehabilitation practices remarkably. Many of the PRM departments have closed section of their clinical activities, and maintaining contact with their patients through telephone and messaging apps. Generally, 50 of the PRM residents/doctors, along with other PRM professionals, have been involved in the direct care of COVID19 patients IAPMR (Indian association of physical medicine and rehabilitation) has also been organizing Webinars periodically to improve their member's training and readiness I believe ISPRM can significantly help in improving knowledge and skills related to Covid-19 and rehabilitation practices.

PRM is establish in 1960s and (IAPMR) was formally registered in 1972 which isn't new to India but this field certainly has not gathered the popularity that it enjoys in the Western region (Kumar, Kumar, Christopher, & Doss, 2020).

Out of the 607 medical colleges in India PRM department is available in 21 of those in 23 states and Union Territories providing residency training for 96 candidates per year in PRM which is a three years' residency programmed here in India.

Central Public Health strategies, policy and guidelines

Public health strategy has primarily focused on diminishing and containing infection while gearing up for a strong unified response. The central government's critical actions in announcing timely ban on travel, sealing of borders and a near complete lockdown has resulted in relatively low known infections and casualties in India, given its population density. It has also permitted the state health departments to get their health infrastructure, human resources

Ministry of Health and Family Welfare (MHFW), its support institutions and multi-sectorial constituted entitled action groups have been at the forefront regularly releasing clinical and non-clinical guidelines and protocols based on the latest evidence. Disclosing free testing and treatment of Covid-19 under Ayushman Bharat as well as additional insurance cover of INR 50 lacs for our frontline healthcare and sanitation workers have been a welcome move. Loans negotiated from World Bank, (ADB) Asian Development Bank (~US\$2.5Bn), Emergency relief and Make in India packages (~US\$ 2Bn) announced by the Government will fund immediate supply needs and strengthen health infrastructure for the future (ZEENEWS, 2020)

Decentralized Government Implementation and response

The Central, state and district administration are seen to have energize the government and non-government machinery, engaged in partnerships and collaborations, swiftly provided

necessary approvals and embraced information and communications technology (ICT) and frugal innovation to advance their public health response.

(i) Contact tracing:

Several Governments have collaborated with expedite/advance private sector and academia to use ICT, Artificial Intelligence (AI), and Big data analytics for efficient risk triage, contact tracing, geo fencing and quarantine management of suspects. Arogya Setu at the national level, Tamil Nadu's COVID-19 Quarantine Monitor, Maharashtra's MahaKavach, chatbots in 24X7 command and call Centre's are among many solutions deployed.

(ii) Treatment:

States have mobilized Covid-19 specific hospitals in record time. Tie-ups with non-government hospitals, hotels and conversion of rail coaches into isolation centers are indicators of out-of-the-box thinking. Using Robots to deliver food and medicine in Covid-19 wards of government hospitals in Tamil Nadu, use of humanoids to interact with patients at hospital receptions are innovations to protect our healthcare workers. Facility Management solutions, volunteering and telemedicine apps have also helped states in addressing some of the healthcare delivery challenges effectively.

(iii) Testing:

Inadequacy in supplies of testing kits and capacity have resulted in much lower than desired levels of testing which currently stands at 570/ million population. India's relatively low positive case numbers could also be associate to this. The private sector has been leveraged to provide Covid-19 testing, some have offered drive through, and home sample collection, thought this has not been without hiccups. There is strong advocacy for higher rapid testing/ community testing as a strategy for phased exit from lockdown and infection containment. A slew of academic and private institutions has received approval for manufacturing low-cost testing kits.

(iv) Supplies:

States are seen to have gone all out in order to mobilize supplies of personal protective equipment (PPE), hand sanitizer, masks and ventilators e.g. textile manufacturers are making PPE; an alcohol manufacturing unit is making hand sanitizers; indigenous ventilator manufacturers, auto & auto component manufacturers are ramping up production of approved ventilators.

Government necessary precautions against Covid-19

Highlights:

- Current crisis of COVID19
- Government plays the most decisive role in combating the pandemic
- Steps taken by the Government to help and support the people during this situation of distress

Proactive steps have already been taken by the government in controlling the escalation of the novel coronavirus. These include- lockdown in order to implement social distancing and many schemes in order to feed the needy. Relief has been provided to all those people who have lost their wages due to the non-availability of work during the nationwide Lockdown. Keeping in mind the demand of these people, a national fund with the primary objective of combating the distress situation has been set up. Other effective measures also have been resorted to, such as barring travel to other countries that have been affected by COVID-19, closure of educational institutions, recreational locations, and other IT companies. The government has declared that there shall be no religious, social, or cultural gathering of more than 50 people. Originally, all these measures were implemented in specific states, but as the number of positively tested people increased, the restrictions were imposed nationwide.

While the government-imposed restrictions throughout the country, there were also measures taken to make the life of the people easier. Recently migrant labourers who were trapped in other parts of their countries were sent to their native lands through a special train align for this purpose. The essential necessities of people have been fulfilled through the means of the PM CARES fund. The administration has also assured that good care is given to people who have been quarantined in hospitals in order to ensure their speedy recovery. The banks have been conducted to refrain from collecting interest on loans during the lockdown period because of the economic depression in the country. There is also a national helpline number set up by the Union Government, to which people can call in case they have a dreadful situation that has not been addressed.

There has been an economic dip in the country due to the nation-wide lockdown announced by the central government. In a country like India, where the population is exceptionally dense, the vulnerability is even more dense. After the impact of COVID-19 has diminished, the economy can be boosted by reducing the use of imported products and increasing the use of Indian products. This state, it will serve two purposes, one being the reduction in the cost of importing and also it will provide work to the inmates of the country to manufacture and sell products. Even though NGOs, corporates, and individuals are doing their part in order to keep the country and its people together during this pandemic, the role of the government is crucial. This is because their orders and the restrictions that they inflict are binding on the people and thus will make a positive impact on the way the country is responding to the pandemic.

Measures Needed by Government for Covid-19

Response and recovery plans need to be more dynamic like the pandemic. Districts have been classified into red, orange and green zones to facilitate phased emergence from lockdown. A balance needs to be struck between opening up and managing the risk with strong guidelines, communication, surveillance, monitoring, preparedness, significant testing and analytics on hotspots, containment and clear zones. Return of migrant population to their homes requires public health systems to be alert and planned. Location specific easing and re-imposing restrictions to contain the spread is likely to be a cyclical process that is expected to get repeated over the next few months as the experience from developed countries like Singapore and Hong Kong also show. This requires strong messaging for governments and citizens to be ready for the challenges.

A cause of concern is that regular public health programs specifically routine immunization, care for pregnant women and infants, seem to have been side-lined. These need to be re-prioritized and delivered closer to the community to avoid undesirable consequences.

India can consider gainfully employing its unemployed in manufacture of sanitizers, masks, PPEs, testing kits, in running community kitchens, and even for contact tracing. SHG's, NGO's, Volunteer groups can be the possible channel for states to build capacity, contribute to the response and fund livelihoods (PIB, 2020).

To conclude, the pandemic does not seem to be leaving in a hurry, and we should use this time to strengthen health systems; accelerate the learnings from collaborating with private sector, use of technology and social media, and adopt new and efficient ways of working to emerge efficient, resilient and stronger.

Government future perspectives against such viruses

Infections caused by such viruses are an enormous global health threat. They are a major cause of death and have adverse socio-economic effects that are continually annoying. Therefore, potential treatment drives and approaches need to be developed. First, India is taking necessary precautionary measures to reduce viral transmission. Second, ICMR and the Ministry of AYUSH provided guidelines to use conventional preventive/precautionary and treatment strategies to boost immunity against COVID-19. These guidelines could help reduce the harshness of the viral infection in elderly patients and increase life expectancy. The recent report from the director of ICMR quoted that India would undergo randomized controlled trials using convalescent plasma of completely recovered COVID-19 patients. Convalescent plasma therapy is highly recommended, as it has provided moderate success with SARS and MERS; this has been rolled out in 20 health centers and will be increased this month (May 2020). India has an expertise in specialized medical/pharmaceutical industries with production facilities, and the government has established fast-tracking research to develop rapid diagnostic test kits and vaccines at low cost. In addition, the Serum Institute of India started the research on developing a vaccine against SARS-CoV-2 infection. Until we obtain an appropriate vaccine, it is highly recommended that we screen the red zoned areas in order to stop further transmission of the virus. Medical college doctors in Kerala, India, implemented the low-cost WISK (Walk-in Sample Kiosk) to collect samples without direct exposure or contact. After Kerala, The Defense Research and Development Organization (DRDO) developed walk-in kiosks to collect COVID-19 samples and named these collections as COVID-19 Sample Collection Kiosk (COVSACK). After the swab collection, the testing of SARS-CoV-2 can be achieved with the help of existing diagnostic facility in India. This facility is generally used for massive screening or at least in the red zoned areas without the need for personal protective equipment kits. India has attempted to augment its research facilities and shift toward testing the mass population, as recommended by medical experts in India and worldwide (Ministry of Health & Family Welfare, 220).

Research methodology

A small market research survey was conducted to understand the target audience. This study has been carried out to know the impact of Covid-19 on general public and whether they are satisfied

with the proactive measures taken by the government against the virus and as well as with the public health initiatives taken by the government.

SAMPLING:

- i) **Method:** The type of research is explorative. The respondents are selected by adopting a method of random sampling. The segmentation is for the adults, age group of 18+ years.
- ii) **Size:** The sample size is 100 respondents.
- iii) **Area:** The questionnaires have been distributed among respondents in various area of the town of different states.

DATA COLLECTION:

Collection of data is done through primary as well as secondary sources. Primary Data is collected through the structured questionnaires and interviews and Secondary Data are collected through internet and other published information.

PERIOD OF STUDY:

The study is conducted over a period of one month.

Scope of the study:

The study deals with the public profile, satisfaction and dissatisfaction against the work of public health sector and the measures taken by the central government.

Limitations of the study:

- ❖ The study is undertaken in 10 states of the country. The results therefore are confined to this area and need not necessarily applicable to other states.
- ❖ The findings of the study can be applicable to the period in which it has been done; it need not be applicable as such for another period.
- ❖ The time period is too small to carry out such a topic and to draw a meaningful conclusion.
- ❖ Sometimes interested respondents were also biased so the collected figures involve both positive and negative figures. It does not cover all the aspects of the public health sector.

Data Analysis

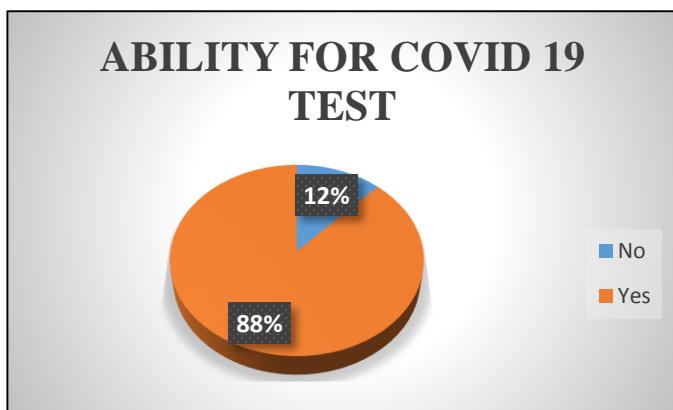
Analysis have been on the basis of the responses of the respondents and the results of the interviews. To arrive at the objectives, statistical tools is used for analyzing the data and information that are percentage, average, Charts, tables, bar diagram, etc.

Research Desing

The type of research is explorative. The respondents are selected by adopting a method of random sampling. The segmentation is for the adults, age group of 18+ years. The sample size is 100 respondents. The questionnaires have been distributed among respondents in various area of the town of different states.

Presentation of data, findings & analysis**(i) Ability for COVID-19 test**

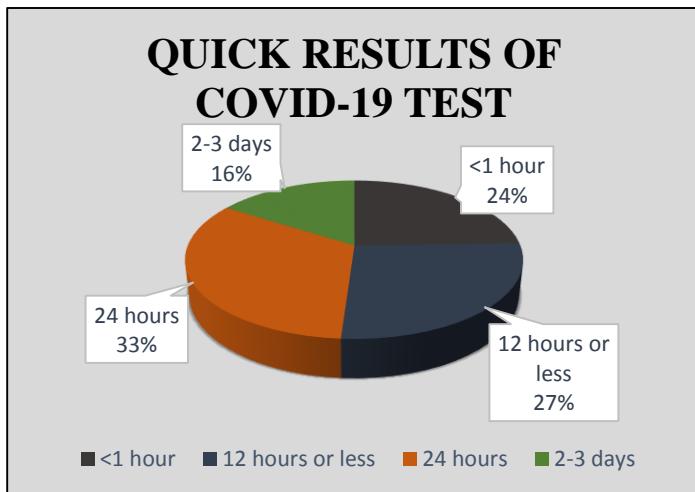
Yes	88
No	12

**Interpretation:**

Majority (88%) of the respondents from all over the states have answered 'Yes', which implies that their health center has the facility for covid-19 test.

ii) Quick results of covid-19 test

<1 hour	23
12 hours or less	25
24 hours	31
2-3 days	15
4-5 days	1
More than 5 days	5

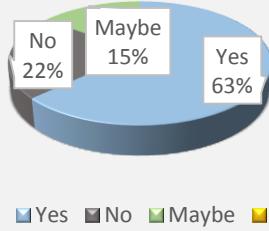
**Interpretation:**

More than 75% of the respondents are satisfied with agility of their respective health center in terms of providing covid-19 test results.

iii) Are doctors, nurses and/or other health workers trained on coronavirus disease management

Yes	63
No	22
Maybe	15

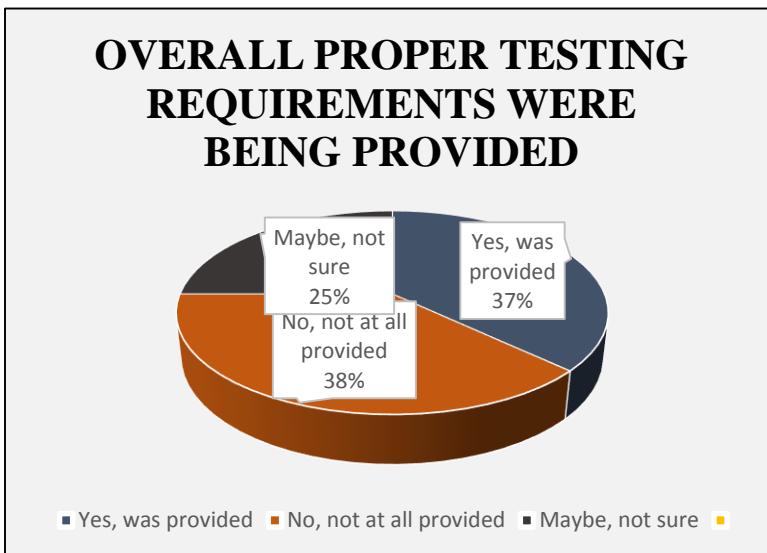
ARE ALL HEALTH WORKERS TRAINED ON CORONAVIRUS DISEASE MANAGEMENT

**Interpretation:**

More than 60% of the respondents are agreed to the fact that doctors, nurses and/or other health workers were being trained on coronavirus disease management.

iv) Overall proper testing requirements were being provided

Yes, was provided	37
No, not at all provided	38
Maybe, not sure	25

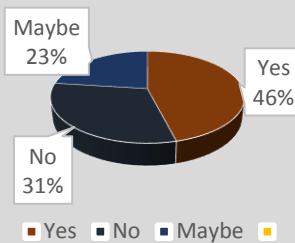
**Interpretation:**

Majority (38%) of the respondents are denying to the fact that overall proper testing requirements were being provided to the hospitals by the central government.

V) Across India are there appropriate quantity of protection equipment's for health workers

Yes	46
No	31
Maybe	23

ACROSS INDIA ARE THERE APPROPRIATE QUANTITY OF PROTECTION EQUIPMENTS FOR HEALTH WORKERS

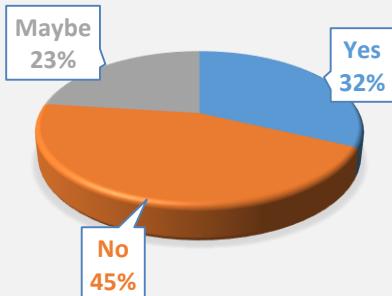

Interpretation:

46% of the respondents have agreed that there is appropriate quantity of personal protection equipment coveralls, masks, gloves, etc. available for health workers.

VI) Was government's lockdown step was a successful combating corona pandemic

Yes	32
No	45
Maybe	23

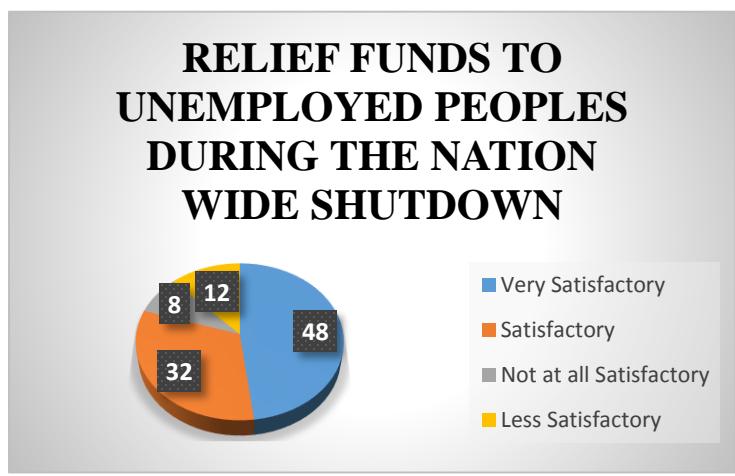
WAS GOVERNMENT'S LOCKDOWN STEP WAS A SUCCESSFUL COMBATING CORONA PANDEMIC


Interpretation:

45% of the respondent's state that Government's lockdown step was an unsuccessful combating step towards Novel Corona Pandemic.

VII) Relief funds to unemployed peoples during the nationwide shutdown

Very Satisfactory	48
Satisfactory	32
Less Satisfactory	12
Not at all Satisfactory	8

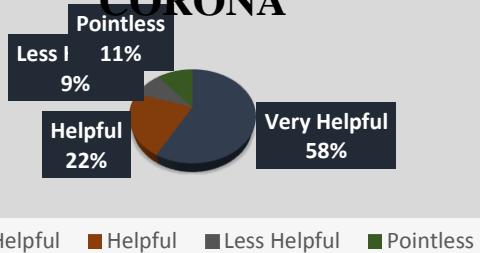
**Interpretation:**

Majority (80%) of the respondents are satisfied with the government's initiative towards providing relief funds to unemployed peoples during the nation-wide shutdown.

VIII) Effectiveness of the steps taken towards spreading of novel corona

Very Helpful	58
Helpful	22
Less Helpful	9
Pointless	11

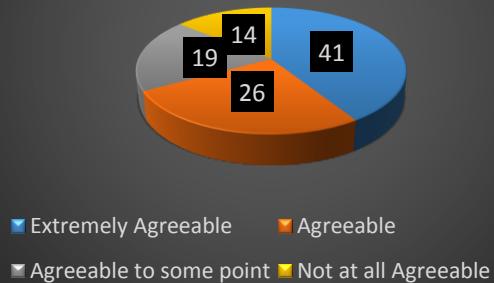
EFFECTIVENESS OF THE STEPS TAKEN TOWARDS SPREADING OF NOVEL CORONA


Interpretation:

Almost 80% of the respondents have considered that the steps taken towards spreading of novel corona very much effective.

Extremely Agreeable	41
Agreeable	26
Agreeable to some point	19
Not at all Agreeable	14

PROPER MEASURES ADOPTED FOR STUDENTS DURING LOCKDOWN

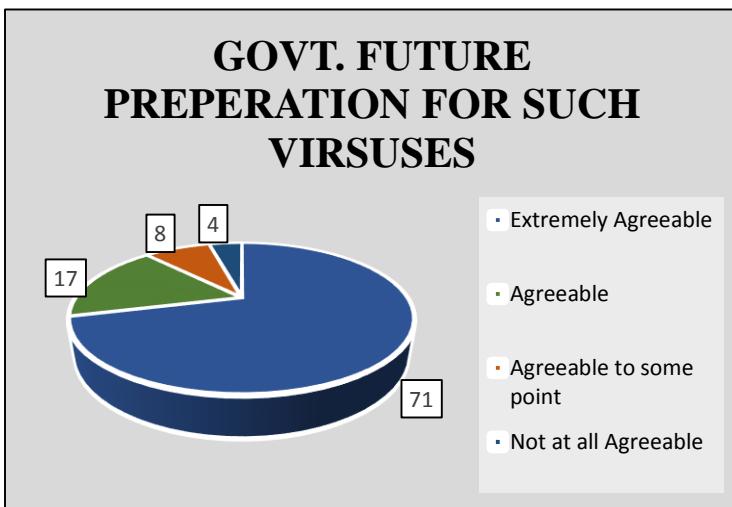

Interpretation:

More than 75% of the respondents consider that the measures adopted by governments for the students during lockdown was effective.

for such viruses	X) Govt. Future preparation
Extremely Agreeable	71
Agreeable	17
Agreeable to some point	8

Not at all Agreeable

4

**Interpretation:**

88% of the respondents want that the governments should be pre-prepare with provision of better health care facility in future.

Findings

- Out of 100 respondents, 61% of the people are Male and 39% Females.
- Majority (38%) of the respondents belong to the age group of 18-30 years.
- There are 10 respondents from each of the 10 different states.
- Majority (88%) of the respondents from all over the states have answered ‘Yes’, which implies that their health center has the facility for covid-19 test.
- More than 75% of the respondents are satisfied with the ability of their respective health centers in terms of providing covid-19 test results.
- More than 60% of the respondents agreed to the fact that doctors, nurses or other health workers were being trained on coronavirus disease management.
- Majority (38%) of the respondents are denying to the fact that overall proper testing requirements were being provided to the hospitals by the central government.
- 46% of the respondents have agreed that there is appropriate quantity of personal protection equipment coveralls, masks, gloves, etc. available for health workers.
- 45% of the respondent's state that Government's lockdown step was an unsuccessful combating step towards Novel Corona Pandemic.
- Majority (80%) of the respondents are satisfied with the government's initiative towards providing relief funds to unemployed peoples during the nation-wide shutdown
- Almost 80% of the respondents have considered that the steps taken towards spreading of novel corona very much effective.
- More than 75% of the respondents consider that the measures adopted by governments for the students during lockdown was effective.

- 88% of the respondents want that the governments should be pre-prepared with provision of better health care facility in future.

Suggestions

- Govt. should have provided free hand sanitizers, free masks at least to the people amongst the BPL sector or to the classes who living is dependent on daily wages.
- More and more testing kits should be provided and made affordable to all categories / classes of people at minimal cost.
- Rate of testing should be done in an appropriate manner. More and more testing is necessary and should be done in an organized manner.
- Moreover, for such worst pandemics there should have been adequate amount of PPE kits for the Doctors and nurses and other health workers which was seen to be insufficient during such critical times.
- Sudden lockdown was not a good idea. Thousands of people walked back home, with no means of transport due to the sudden lockdown. It was such a havoc and the situation was chaotic. Lockdown should have been postponed until the migrants could travel back to their respective homes.

More than 300 migrant workers lost their lives due to the lockdown, with reasons ranging from starvation, suicides, exhaustion, road and rail accidents, police brutality and denial of timely medical care. Various measures were taken by the central Govt. like arrangement of transportation was provided which was pretty much delayed.

- The amount of Relief Fund provided by the govt. wasn't even enough only for the poor.
- Govt. should prepare the country for such kind of dangerous pandemic in near future by making enough beds in the hospitals sufficient enough for more and more of the people and proper health kits should be provided.

ANNEXURES

Structured questionnaires on the covid-19 epidemic

Q1) Does your health center currently have the ability to test patients for COVID-19?

- a) Yes
- b) No

Q2) On an average in a week, how quickly is your health center able to obtain COVID-19 test results for SARS-CoV-2 virus detection (PCR, antigen)?

- a) < 1 hour
- b) 12 hours or less
- c) 24 hours
- d) 2-3 days
- e) 4-5 days
- f) More than 5 days

Q3) Are doctors, nurses and/or other health workers trained on coronavirus disease management?

- a) Yes
- b) No
- c) May be

Q4) Adequate testing facilities, proper testing kits, proper testing requirements like ventilations and hospital requirements were being provided?

- a) Yes, was provided
- b) No, not at all provided
- c) May be, not sure.

Q5) With hospitals across India are there appropriate quantity of personal protection equipment coveralls, masks, gloves, etc. for health workers?

- a) Yes
- b) No
- c) May be

Q6) What do you think about Government's lockdown step was a successful combating step towards Novel Corona Pandemic?

- a) Yes
- b) No
- c) May be

Q7) What is your thought towards Govt. providing necessary Relief funds to all those people who have lost their jobs and wages due to the non-availability of work, during the nationwide shutdown? Was it -

- a) Very Satisfactory
- b) Satisfactory
- c) Less Satisfactory
- d) Not at all satisfactory

Q8) Steps taken towards spreading of Novel Corona, E.g.: maintaining Social Distance, Using of Face mask, and awareness about frequently use of soap while washing of hands or use of hand sanitization?

- a) Very Helpful
- b) Helpful
- c) Less Helpful
- d) Pointless

Q9) Proper reforms and serious measures for the students who is at school, college and universities were provided during lockdown, are you satisfied with these measures?

- a) Extremely Agreeable
- b) Agreeable
- c) Agreeable to some point
- d) Not at all Agreeable

Q10) In future Govt. should be pre-prepare with provision of better health care facility such as hospital beds with better hygiene, medicines, vaccines, food and other basic necessities of the people.

- a) Extremely Agreeable
- b) Agreeable
- c) Agreeable to some point
- d) Not at all Agreeable

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