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Aims and Objectives : The Indian Journal of Commerce, started in 1947, is the quarterly publication of the All India Commerce Association to disseminate knowledge and information in the area of trade, commerce, business and management practices. The Journal focusses on theoretical, applied and interdisciplinary research in commerce, business studies and management. It provides a forum for debate and deliberations of academics, industrialists and practitioners.

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Papers based on application oriented research or field studies in the areas of industry, commerce, business studies and management are invited. The length of a paper including tables, diagrams, illustrations, etc., should not exceed 20 double space pages. Short communications (not more than 5 double spaced pages) relating to review articles, report of conferences, summary/views on various governments reports, debatable issues, etc., are also published. Book reviews and summary of Ph.D. dissertations not exceeding two double spaced pages, are welcome. Manuscripts sent for publication in this journal should not have been published or sent for publications elsewhere. All correspondence will be held with the senior (first) author only.

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First page should consist of title of the paper, name(s), of author (s) with all details and abstract not exceeding 150 words. Second page should start with the title of the paper again, followed by the text.

In captions for tables, figures, and column heading in tables, the first letter of the first word should be capitalised and all other words should be in lower case (except proper nouns). For example Table 5. Price ratios between edible groundnut kernel and other edible nut kernels. **Footnotes** in the text should be numbered consecutively in plain Arabic superscripts. All the footnotes, if any, should be typed under the heading 'Footnotes; at the end of the paper immediately after 'Conclusion'.

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The Influence of Pay Level Satisfaction and Stress on Turnover Intention and Organisational Commitment of Nurse during Pandemic Period

MINAKSHI RANA, BHARTI SUJAN, JAYA BHASIN AND SHAHID MUSHTAQ

Abstract: Present study aims to understand the impact of mergers and acquisitions on Profitability, liquidity and valuation of selected Indian pharmaceutical companies that can lead to know whether the M&As are beneficial to the acquirer companies or not. Analytical and Causal research design is used using various financial ratios and paired t-test based on secondary data collected from annual reports of selected Indian pharmaceutical companies. The result shows that among selected five M&As, Torrent's acquisition was successful in improving its financial performance as its financial performance was enhanced after the acquisition. But same cannot be said for the remaining four M&As as its performance are almost similar as before merger and in few ratios, it had worsen post M&As.

Key Word: Mergers, Acquisitions, Pharmaceutical Industry

Introduction

Today world is struggling to overcome the pandemic situation caused by 2019 coronavirus. First case of COVID-19 was reported in Wuhan China in 2019 (Xie *et al*., 2020) and within few days this virus has spread to nearly each country. On March 11, 2020, the World Health Organization has declared COVID-19 virus spread a pandemic as this virus has been barreled to almost every nation within short time period and has infected millions of people. It is believed that the best defense against COVID-19 outbreak is a strong health system. This situation has made the world realized about the significance of healthcare staff. Although it is evident that COVID-19 pandemic has put the physical and mental health of healthcare workers at higher risk (Greenberg *et al.*, 2020). Now they are working

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under an extreme pressure with limited resources. These front-line health workers are working with inadequate personal protective equipment (PPE) which directly putting them in risk of infection (Wang *et al.,* 2020). Researchers across the globe are continuously working for vaccine development and for the identification of treatment for novel coronavirus disease. Meanwhile pressure is on frontline healthcare workers as scenario is adverse for their physical as well as for mental health.

Previous research findings have reported that one of the reason of spreading this disease from Wuhan is shortage of healthcare staff especially nurses and physicians (Xie *et al*. 2020). Similar situation is witnessed in United States where shortage of nursing staff is seen (Maqbool, 2020). In past also, the problem of retention has become a key concern for most of the organizations (Alhamwan & Mat, 2015) and specifically in healthcare sector, nurse's turnover is broadly recognized as a major problem around the globe (Efendi *et al.,* 2019; Halter *et al*., 2017).

Therefore it becomes essential for the hospital industry to take necessary steps to retain their healthcare staff as high attrition among nurses has adverse impact on the healthcare sector. Previous research findings reported that mostly nurse's work include a direct contact with the corona patient (Huang *et al*., 2020), therefore it is necessary to handle the job affair of nursing staff very efficiently. Healthcare organizations should concentrate on factors which are directly linked to the commitment and turnover intention of nurses.

In this context, present study is positioned within the fields of talent retention strategies and its behavioural outcomes. Study has statistically examined the relationship between pay level satisfactions and stress on organizational commitment and turnover intention among nurses working in various private hospitals of Northern India.

Covid-19: Indian Scenario

India is second most populous country and it is well predicted that impediments of COVID-19 in Indian population is beyond imagination. Today Indian government has reported 8,78,254 confirmed COVID-19 cases (13 July, 2020) and this number is continuously increasing. One of the reason behind this adverse situation is shortage of nursing staff in India. In addition to this, Indian nurse have reported high level of stress as they are at high risk because of ill-equipment. As front line warriors of COVID-19, they are more exposed to deadly virus (The Hindu, 2020). Nurses working in Indian private hospitals are facing the problem of salary deduction, allowances cuts, and no arrangements of personal protection kits (The New Indian Express, 2020). It is evident from previous research that basic factors such as pay satisfaction are directly linked

to the commitment and turnover intention among nursing staff. Therefore insufficient pay and stress in working environment are considered as the underline reasons for the nurse's turnover. Presently Indian healthcare system is suffering than ever before as this service industry does not have sufficient nursing staff to cater the societal healthcare needs. Therefore it is essential for private hospitals to handle the job affair of its staff with care as these hospitals are considered as pillars of nation's healthcare system.

Additionally, in recent years Indian healthcare sector has been emerged as a hub of medical facilities as it has become an economical option for patients across the globe (Dawn & Pal, 2011). The increasing number of super-specialty hospitals and paramedical institutions have provided ample number of job opportunities. Although this development has also created a competition for medical institutes to retain the nursing talent. In India, this situation is problematic because healthcare sector is growing very fast and at the same time, industry is facing nurse's turnover at an alarming rate (Lakshman, 2016; Bhattacharya *et al*., 2012; Kumar, 2012). In this context, it has become essential for the organizations to implement effective retention strategies so that nurse's commitment to the organization can be ensured (Labrague *et al*., 2018).

Literature Review

Researcher opined that future of healthcare industry is dependent on skilled nursing staff (Catton, 2020; Nielsen & Dieperink, 2020) although these healthcare providers have reported high stress level in COVID-19 pandemic (Lai *et al*., 2020). In current pandemic situation medical staff around the globe is suffering from psychological distress, anxiety, depression and insomnia (Torales *et al*., 2020; Lu *et al*., 2020). In India also healthcare professionals have reported high level of stress as they are working in high risk with ill- equipment. It is reported that they are facing challenges of longer working hours, concern for family health, risk of infection, societal issues and insufficient personal protection kits (Viplav, 2020). In addition to this, the psychological and mental health of medical professionals is at higher risk because of moral injury and stress during this pandemic situation (Ramakrishnan, 2020). It is also reported that Indian healthcare providers are also facing physical as well as mental attacks in their own societies and working areas (Sarkar, 2020). Furthermore, nurses working in Indian private hospitals are facing the problem of salary deduction, allowances cuts, and no arrangements of personal protection kits (The New Indian Express, 2020). As front line warriors of COVID-19, they are more exposed to deadly virus (The Hindu, 2020) and these situations are continuously degrading their mental health as well as affecting their commitment toward the work. Therefore, it is crucial to have a genuine understanding regarding various factors which are directly associated with

their commitment and turnover intentions.

Previously researchers have identified various factors that are responsible for turnover among nurses. These are less career opportunities, low wages, heavy work pressure and poor work-life balance (Ramlall, 2003; Mathur & Agarwal, 2013; Dasgupta & Agarwal, 2014). Other than these, low commitment levels (Getie *et al*., 2015), lack of appreciation, poor career prospects (Ahmadi, 2014), insufficient wages and irregular working hours (Steinmetz *et al*., 2014) are also some underlying reasons for nurses attrition. It is also evident from the previous studies that researchers have also made their significant contribution in the field of talent retention through identification of factors that have a direct and positive impact on the reduction of nurse's turnover intention. Some of them are job satisfaction (Ahmadi, 2014; Getie *et al*., 2015; Vermeir *et al*., 2017), pay (Steinmetz *et al*., 2014; Alhamwan *et al*.,2015; Alhamwan & Mat, 2015; Getie *et al*., 2015), working climate (Kyndt *et al*., 2009), lesser workload (Almalki *et al*., 2012; Pillay, 2009) and recognition (Ahmadi, 2014; Kumar,2012; Leurer et al., 2007). Subsequently, career advancement opportunities within the organization and level of pay satisfaction has also been considered as an effective retention strategy for nursing staff (Collins *et al*., 2000; Dawson *et al*., 2014; Alhamwan & Mat, 2015; Alhamwan *et al*., 2015; Getie *et al*., 2015; Yang *et al*., 2015; Lakshman, 2016; Singh & Loncar, 2010; Delobelle *et al*., 2011; Almalki *et al*., 2012; Kumar, 2012; Saleem & Gul, 2013). It has been well established that continuous hopping of jobs and higher attrition rate among nursing staff is a serious issue (Mbemba *et al*., 2013; Alhamwan & Mat, 2015; Getie *et al*., 2015; Halter *et al*., 2017). Researcher also argued that to achieve the competitive advantage in medical organization it is important to reduce the stress among nursing staff as it is directly linked to organizational commitment among them (Alipour & Monfared, 2015). Moreover for medical organisations, organisational commitment is essential as it enhances organisational efficiency (Alipour & Monfared, 2015).

Therefore, it becomes essential to investigate the role of different retention factors on nurse's turnover intention. In this context, present reseach has been conducted with an aim to understand the relationship between pay level satisfaction, stress, organizational commitment and turnover intention of nurses. Present study is conducted in Indian context because attrition among Indian nurses is considered as a major barricade (Bhattacharya *et al*., 2012; Immanuel, 2015; Lakshman, 2016). In addition to this previous studies have also raised the concern of limited research in India context (Lakshman, 2016).

Therefore understanding regarding the stress, turnover intention and organizational commitment among nursing staff working in current pandemic scenario is essential as this identification will surely help to frame better policies

for these frontline warriors. In this context, inadequate empirical research on stress, pay satisfaction, commitment and turnover intention of nursing staff in the Indian context needs to be expanded.

Conceptual Framework and Hypotheses Development

Pay Level Satisfaction and Turnover Intention

The level of satisfaction with pay and monetary rewards plays crucial role in strengthening the nurse's retention. This concept is believed to be associated with Adam's equity theory as employee compare their inputs with tangible and intangible outputs in order to seek equilibrium within their organization (Singh & Loncar, 2010). Employees while rendering their services expect to have organizational justice in terms of pay satisfaction within their working premises (Singh & Loncar, 2010). Therefore any discrepancy in their effort-gain ratio as compared to other employees leads to dissatisfaction among them. Therefore pay satisfaction plays an important role in building the overall satisfaction of the employee. Various empirical studies stated that satisfaction with pay level is negatively related to the turnover intention of staff members (A'yuninnisa & Saptoto, 2015; William *et al.,* 2006). In nursing context also, turnover intention is believed to be significantly influenced by pay satisfaction (Singh & Loncar, 2010).

H_1: There exists a direct and negative relationship between pay level satisfaction and turnover intention among nurses.

Stress and Turnover Intention

Turnover intention considered as the willingness of the employee to leave the organization in near future (A'yuninnisa & Saptoto, 2015). Researchers have considered the turnover intention among employee as the measure to evaluate the actual turnover in organisation (Cho & Lewis, 2012; Griffeth et al., 2000). It is seen that stress among nurses significantly predict the turnover intention among them (Lou *et al.,* 2007). Therefore management of stress within the working premises is very crucial and it is directly related to the turnover intention among existing employees.

H_2: Stress has a direct and positive relationship with turnover intention among nursing staff.

Pay Level Satisfaction and Organisational Commitment

Organizational commitment is directly related to employee turnover (Aryee & Tan, 1992). The term organisational commitment has been defined as an individual's personal choice or willingness to stay in the current company (Allen & Meyer, 1991). Committed employees have a strong belief in the company's goals (Mowday *et al*., 1978) because of this reason such employees are actively

involved in company's affair and directly contribute toward the progress of organization (Vance, 2006). Although, in present scenario it is very difficult to encourage the employees to remain committed to their present organizations (Jawad *et al.,* 2012) because they switch their jobs for better career opportunities and financial growth. Furthermore, empirical evidence have established a connection between commitment and pay satisfaction (Vandenberghe & Tremblay, 2008). It is evident from previous studies that commitment among employees is significantly predicted by their pay satisfaction (A'yuninnisa & Saptoto, 2015; Vandenberghe & Tremblay, 2008).

H_3: There exists a direct and positive relationship between pay level satisfaction and organizational commitment among nursing staff.

Stress and Organisational Commitment

Stress among nurses is directly linked to organisational commitment. Previous studies on nursing staff have shown the linkage between the two variables through establishing a negative correlation (Al- Hawajreh, 2011; Ko *et al*., 2003). Researcher argued that organisations need to work on reduction of job stress among nursing staff because it declines the continuance, affective and normative commitment among them (Alipour & Monfared, 2015). Some other researcher have also reported that job stress among nurses is indirectly related to their organisational commitment (Saadeh & Suifan, 2020; Han *et al.,* 2015).

H_4: There exists a direct and negative relationship between stress and Organisational Commitment among nursing staff.

Organizational Commitment and Turnover Intention

Nurse's organizational commitment has a significant negative relationship with their intention to leave the organization (Labrague *et al*., 2018). Earlier studies also supported the association between the two variables (Han *et al.,* 2015; Omar *et al*., 2012). It has been observed that commitment among nurses leads to intention to stay in the present organization (Wang *et al*., 2012).

H_5: There exists a direct and negative relationship between Organisational Commitment and Turnover Intention among nursing staff.

Pay Level Satisfaction

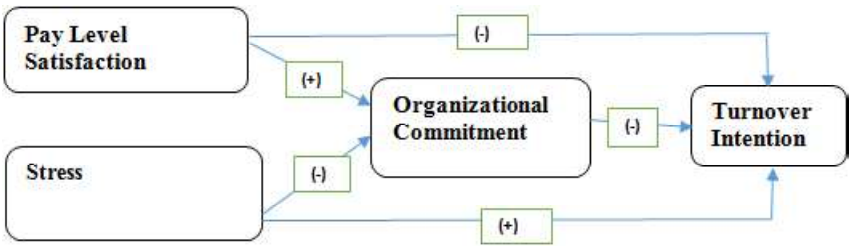

Exhibit 1: Conceptual framework for the study

Methodology and Measurement

Data collection and the Sample

Data was collected using the online questionnaire method. This method has been undertaken as in this pandemic contacting the people personally was not advisable. Convenience sampling method was followed to collect the data from the nurses of private hospitals in northern India. Before the actual data collection the questionnaire was assessed for its face and content validity. The research experts and academicians also assessed each item of the questionnaire for its representativeness, clarity and scope. A pilot study was also conducted on 30 nurses so as to asses any unclear or discriminating items within the scale. Changes were made accordingly and the final questionnaire was distributed among 400 nurses. Around 230 responses were received online out of which 197 were considered appropriate for the study forming a response rate of 49.25 percent.

The majority of the respondents that is around 81.8 percent were females and around 18.2 percent were males. Almost 89.8 percent of nurses in private hospitals were observed to have masters degree in nursing and also had professional training. Around 38 percent nurses were married with kids, 27 percent were married and 35 percent were unmarried nurses. The following data can be observed in the table 1.

Table 1 Respondents profile

	No of Respondents	Percentage
Gender		
Male	36	21.8
Female	161	78.2
Education		
Professionally Trained	177	89.8
Under Training	20	10.2
Marital Status		
Married with Kids	75	38
Married without Kids	53	27
Unmarried	69	35

Instrument Used

The questionnaire is divided into five segments. The first section A deals with items to assess the satisfaction of pay among nurses. Section B deals with stress level among the nurses where as section C deals with items pertaining to organizational commitment and Section D deals with turnover intention of the nurses. The last segment deals with demographic profile of the respondents.

From extent of literature review validated scales for level of satisfaction, stress, organizational commitment and turnover intentions were used. All the items of the scale were measured using a 5 point Likert scale. Items related to level of pay satisfaction from the scale developed by Heneman & Schwab's (1985). It covered items pay raise and level (for e.g. How satisfied are you with the size of your current salary?). Level of stress was measured using the scale developed by DASS-21; Lovibond & Lovibond (1995) but the scale was modified and some items were added according to the situation. In the current scenario of Corona virus where the nursing staff is highly prone to infection there are some other factors such as fatigue, stigma, long working hours, fear of exposure to infection, psychological distress and lack of proper equipments, that are adversely affecting the level of stress amongst the nursing staff. Organizational commitment was measured using the scale developed by Mowday *et al.* (1979). Turnover intention was measured using a 3-item scale by Lum *et al*. (1998).

Analysis and Discussion

The study is divided in three phases wherein the first phase of the study helps to understand the impact of pay level satisfaction and level of stress on organizational commitment. In the second phase of the study impact of pay level satisfaction and level of stress on turnover intention was analyzed. In the third phase mediating role of organizational commitment was examined on pay level satisfaction, stress level and turnover intention. SEM was used to analyze the relation between dependent, independent and mediating variables. Various authors have advised that SEM is considered as an appropriate tool to understand the relationship between multiple variables (Hair *et al.*, 1998; Joreskog and Sorbom, 1996). Before analyzing the relation between the dependent and the independent variables, the scale was tested for exploratory (EFA) and confirmatory factor analysis (CFA) followed by reliability and validity of the scale. Hypotheses were tested using structural equation modeling. KMO and Barlett's test of Sphercity helps to understand the relationship that exists between the items of a scale. Results of EFA revealed that the values of KMO are above the threshold value of 0.5 and the level of significance is less than 0.05 (O'Rourke & Hatcher, 2013, Malhotra & Birks, 2007). The results of EFA revealed that all the scales are uni-dimensional with Eigen value more than 1 heuristic. The results of EFA are reflected in the table number 2.

The scale was also assessed for CFA which revealed the values of CFI, NFI, TLI were all above the threshold value of 0.9 and the value of RMSEA, the bad indicator was 0.5. The values of CFI=0.97; NFI= 0.915; TLI= 0.961 and the value of RMSEA= 0.05 with significance value of 0.46 was assessed. It was also observed that the value of TLI was smaller than value of CFI which is also considered as a threshold for confirmatory factor analysis (Hair *et al.,* 2010; Byrne, 2001).

Table 2: KMO and barlett's test of sphercity

Item	FL	Cronbach's Alpha	CR	AVE	MSV
	KMO=0.717, BTS ÷2=330.355, df=6, sig=.000, TVE=61.698%				
PL1	.855	0.749	0.72	0.62	0.08
PL2	.913				
PL3	.901				
PL4	.495				
	KMO=0.838, BTS ÷2=390.218, df=21, sig=.000, TVE=47.753%				
ST1	.663	0.739	0.85	0.48	0.07
ST4	.613				
ST5	.765				
ST6	.517				
ST7	.719				
ST8	.788				
ST9	.724				
	KMO=0.791 BTS ÷2=349.536, df=36, sig=.000, TVE=36.054%				
COM1	.616	0.774	0.93	0.36	0.036
COM2	.346				
COM3	.589				
COM4	.682				
COM5	.634				
COM6	.516				
COM7	.644				
COM8	.681				
COM9	.623				
	KMO=0.518 BTS ÷2=19.851, df=3, sig=.000, TVE=36.054%				
TI1	.768	0.927	0.72	0.360	0.26
TI2	.786				
TI3	.355				

CFI=0.97; NFI= 0.915; TLI= 0.961; RMSEA= 0.05 PCLOSE= 0.46 Chi Square=1.4

The scale was also assessed for reliability and validity. The reliability of all the factors ranged between 0.74 and 0.92 Chronbach's alpha. Both the convergent and discriminant validities were also achieved for the scale. Factor loadings after rotated component matrix for all the factors were measured to be more

than the threshold value of 0.5 which confirmed the presence of convergent validity (Hair *et al*., 2008; Malhotra & Dash, 2011, Mentzer *et al*., 1999). To assess the discriminant validity, many authors have stated that value of average variance extracted should be more than the value of squared correlation. The value of AVE in the current study was more than the value of squared correlation thus confirming discriminant validity (Hair *et al.,* 2010; Fornell and Larcker, 1981).

The Structural Model

The estimation of structural equation modeling was done using AMOS 18.0. To assess the relationship between pay, stress level, organizational commitment and turnover intention alternate model approach was adapted. The alternate approach is considered to be one of the most appropriate methods by various authors(e.g. Bontis *et al*. 2007; Knight *et al.,* 1999; Mustapha *et al.,* 2010, Azmi, & Mushtaq, 2015) where in three models are used to assess the hypotheses. The three models are direct model (relationship between dependent and independent is assessed) partially mediated model (impact of independent variable on dependent and the mediating variable is assessed) and fully mediated model (impact of independent variable on the mediating variable which in turn impacts the dependent variable is assessed). The models were tested using AMOS18.0.

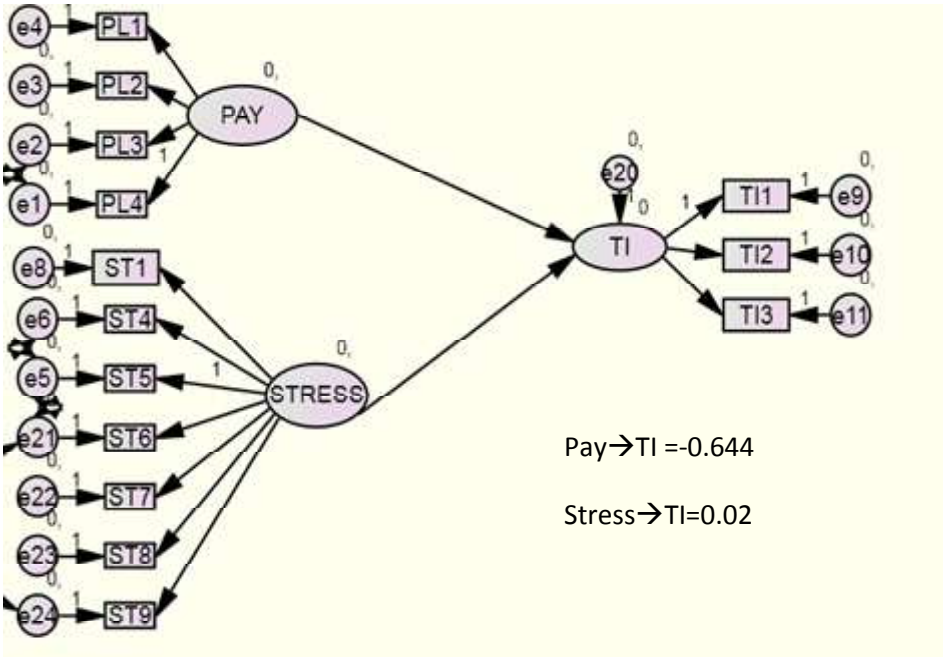

Exhibit 2: Direct Model (M1)

CFI = 0.987 NFI= 0.906 TLI=0.983 RMSEA=0.027 PCLOSE=0.94

Based on the direct model relationship between the dependent variable (turnover intention) and the independent variable (pay and stress) were observed. The hypotheses formulated were:

H_1: There exists a direct and negative relationship between pay level satisfaction and turnover intention among nurses.

H_2: Stress has a direct and positive relationship with turnover intention among nursing staff.

Based on the partially mediated model impact of independent variable (pay and stress level) on dependent (turnover intention) and the mediating variable (organizational commitment) is assessed. The hypotheses formulated were:

H_3: There exists a direct and positive relationship between pay level satisfaction and organizational commitment among nursing staff.

H_4: There exists a direct and negative relationship between stress and organisational commitment among nursing staff.

H_5: There exists a direct and negative relationship between Organisational Commitment and Turnover Intention among nursing staff.

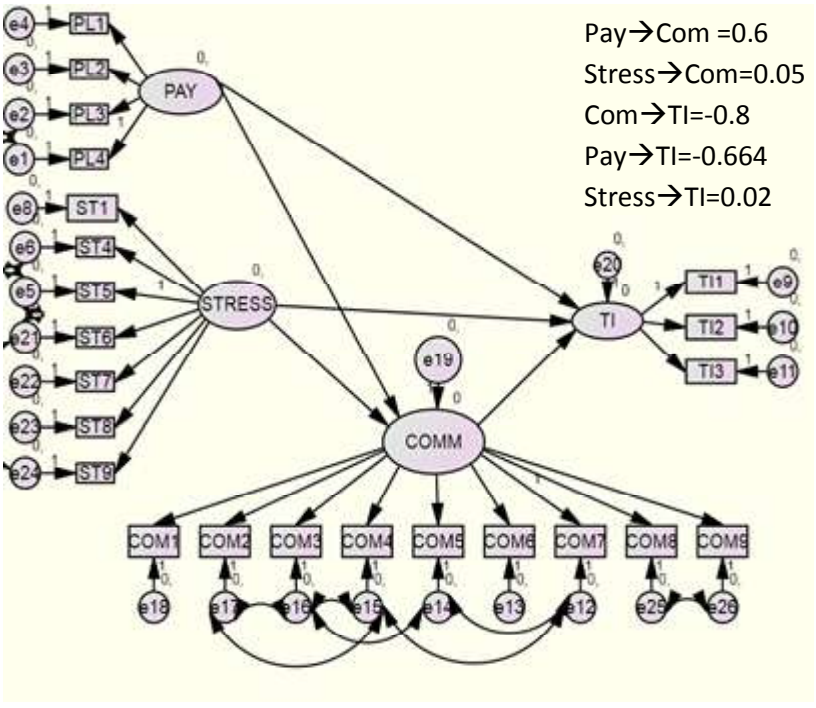

Exhibit 3: Partially Mediated Model (M2)

CFI= 0.913 TLI=0.897 NFI= 0.788 CMIN/DF=1.5 RMSEA 0.051 PCLOSE=0.405

Based on the fully mediated model impact of independent variable (pay and stress level) on the mediating variable (organizational commitment) which in turn impacts the dependent variable (turnover intention) is assessed. The hypotheses formulated were:

H_3: There exists a direct and positive relationship between pay level satisfaction and organizational commitment among nursing staff.

H_4: There exists a direct and negative relationship between stress and organisational commitment among nursing staff.

H_5: There exists a direct and negative relationship between Organisational Commitment and Turnover Intention among nursing staff.

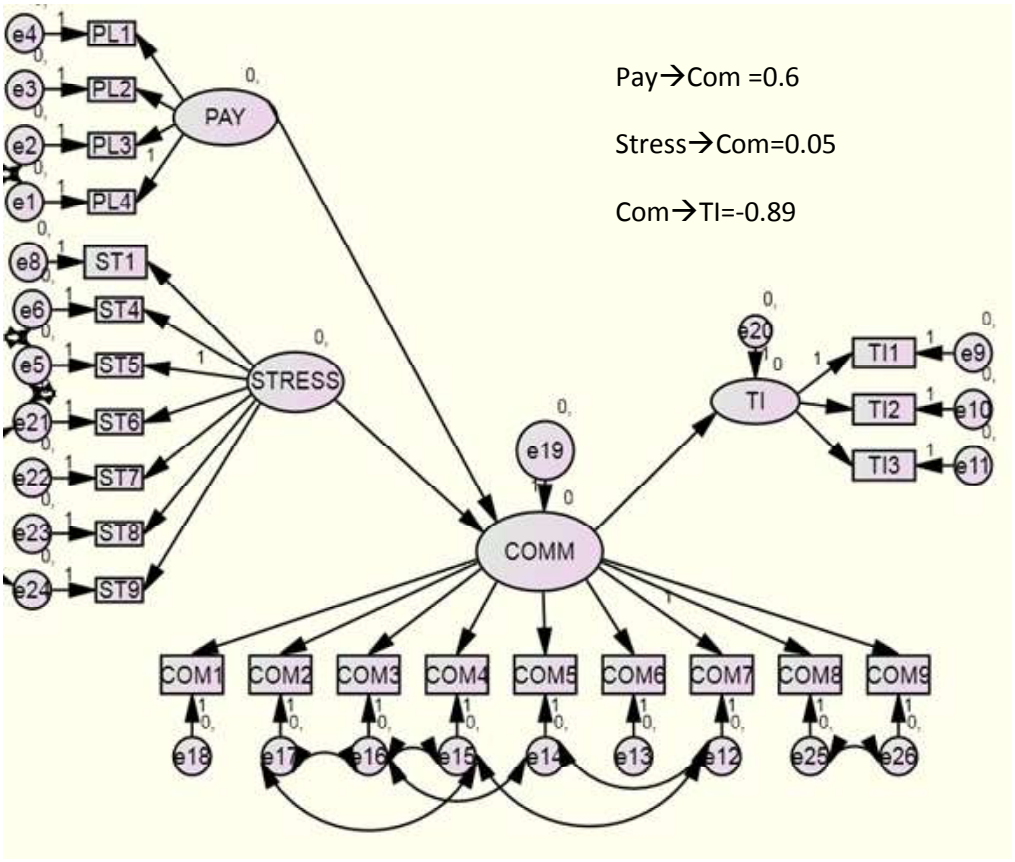

Exhibit 4: Fully Mediated Model (M3)

CFI= 0.913 TLI= 0898 NFI=0.786 RMSEA= 0.05 PCLOSE 0.413

Table 3: Results of the hypotheses

Hypotheses		Values	Sig.	Results
H1	PayàTurnover Intention =-0.644	-0.664	0.043	Supported
H2	StressàTurnover Intention=0.02	0.02	0.050	Supported
H3	PayàCommitment =0.6	0.6	0.001	Supported
H4	StressàCommitment=0.05	0.05	0.00	Not Supported
H5	CommitmentàTurnover Intention=-0.9	-0.9	0.007	Supported

Discussion

The results of all the three models indicated that there is a direct and a negative relation between pay level satisfaction and turnover intention (PayàTI= -0.664; p value 0.04) which also indicated that the hypothesis was supported. The aforesaid relation is also supported by various authors (for eg. A'yuninnisa & Saptoto, 2015; Singh *&* Loncar, 2010; William *et al.,* 2006). The relation between stress level and turnover intention indicated a direct and a positive relation with a value of 0.02 (p value =0.05) thus, supporting the hypothesis as indicated (by Cho & Lewis, 2012; Griffeth *et al.,* 2000 and Lou *et al*., 2007) whereas pay and organizational commitment resulted is a positive impact with a value of 0.6 (p value= 0.001) thus, supporting the hypothesis as predicted by A'yuninnisa & Saptoto, 2015; Vandenberghe & Tremblay, 2008. The relationship between stress level and commitment was expected to show a negative impact (Alipour & Monfared, 2015; Lavasani *et al*., 2008; Lu *et al.,* 2007) but in the current this relationship resulted in a positive impact (stressàCom= 0.05; p value= 0.00). The relationship between Commitment and turnover intention as expected and supported by other authors showed a negative impact of -0.89 (p value of 0.007) (Labrague *et al.,* 2018; Han *et al.,* 2015; Omar *et al*., 2012; Wang *et al*., 2012).

Many authors have suggested to compare the models when alternative models approach to SEM is followed. The alternate model approach helps in analyzing the different relations between the variables which may result in same values for goodness of fit but comparing all the three models is considered to be an essential practice when using alternate model approach (Hair *et al*. 2008; Ping, 2004; Diamantopoulos & Siguaw, 2000; Bagozzi & Yi, 1988). Overall according to the fit indices, all the three models fit the data but on comparison of all the three models it was concluded the model M1 is the best robust model among the three alternate models. The result can be seen in the table 4 indicated below

Table 4: Comparison of models

	CFI	NFI	TLI	CMIN/DF	RMSEA	PCLOSE
M1	0.987	0.906	0.983	1.4	0.027	0.94
M2	0.913	0.897	0.788	1.5	0.051	0.405
M3	0.913	0898	0.786	1.5	0.05	0.413

Conclusion

COVID-19 is a highly dangerous and contagious disease and nurses as a front line workers are more susceptible to infection. This pandemic has adversely affected the lives of the people across the globe. The doctors, nurses, policemen and other essential service providers are putting in continuous efforts to help the community survive in this pandemic. The doctors and nurses are working day and night to fight the deadly virus. Therefore in current scenario organizational policies and strategies can play a major role as it can reduce the turnover intention as well as enhances the level of commitment among them. Researchers have reported the problem of healthcare workers protection as these workers are at higher risk (Wu *et al.,* 2020). This research paper is an effort to understand the impact of factors like pay level satisfaction, stress level and its impact on the commitment towards organizations. After working for long hours and risking their lives, if the nursing staff is not satisfied with their salaries it may adversely affect the commitment towards their organization. Even in the current study the impact of pay satisfaction on commitment highlighted a positive impact (PayàCom= 0.6) which further strengthens that when there is satisfaction of pay it leads to higher commitment (A'yuninnisa & Saptoto, 2015; Vandenberghe & Tremblay, 2008). It was further analyzed that when nursing staff are satisfied with their pay it negates the possibility of intention to leave their jobs (Payà TI= -0.664). The nursing staff is committed to their jobs and one of the most prominent factor being pay satisfaction negates the intentions of turnover (A'yuninnisa & Saptoto, 2015; Singh & Loncar, 2010; William *et al.,* 2006). In fact it was expected that when the level of stress is high it leads to a tendency where the employees want to quit their jobs and search for new jobs where they expect less stress or low job pressure but their level of commitment is high (0.05) and in spite of facing such stressful situations the nursing staff do not want to leave their current jobs (0.02) and help the patients under their care. Many authors have highlighted that the present situation of nurses and doctors is full of stress, fatigue and psychological distress (Dobholkar *et al.,* 2020) but in spite of all these issues the nursing staff is highly committed to their job and do not have any intentions to leave their jobs (CommàTI= -0.89). In fact it's highly appreciable that the nursing staff, doctors, policemen and essential service providers are putting inconceivable efforts and are fully dedicated to fight this deadly virus.

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Pandemic and Indian Stock Market: Sector-Wise Performance

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Abstract: The outbreak of the COVID-19 pandemic has been detrimental to the financial markets throughout the globe. The World Health Organization (WHO) on March 11, 2020, declared COVID-19 a pandemic. This announcement severely affected the stock markets across the world, resulting in falling returns and high volatility. To explore this impact on the Indian stock market, the present study aims to analyse the impact of the COVID-19 announcement on NSE-500 sectoral indices stock returns using the market model of event study methodology. To study the short-term influence of COVID-19 during different periods, six-event windows (-10,0), (0,10) (-20,0), (0,20), (-30,0), (0,30) were set up consisting of 10, 20 and 30 trading days before and after the event day. Most of the sectors experienced negative cumulative abnormal returns during different event windows except for a few sectors that witnessed positive cumulative abnormal returns. The sectors that suffered heavily during the pandemic were Media, Services, Financial Services, IT, Healthcare Services, and Textile. The total stock returns declined sharply within a few days of the declaration of the pandemic.

Keywords: Abnormal stock returns; Pandemic; Event study Methodology; COVID-19; Black-swan event

Introduction

Coronavirus, also known as COVID-19, has swept across the globe, causing havoc in a number of countries. The virus swept the globe, prompting the World Health Organization to proclaim COVID-19 a pandemic on March 11, 2020, with various countries issuing travel bans, emergency declarations, lockdowns, and other restrictions. The virus originated in China in December 2019 (Shereen et al., 2020) The world has seen many pandemics before, the oldest known among them was the Spanish flu in 1918. SARS was first detected in China in 2002, and

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it quickly spread to the rest of Asia. Looking at the previous pandemics that the world has experienced before, it can be observed that they not only lead to the death of countless people but also cause financial loss to the economy. The reaction of investors to the risk presented by any pandemic outbreak plays a crucial role in determining its impact on the financial health of an economy (Smith, 2006). Shive (2010) developed an epidemic model of investor behaviour and found that socially motivated trades can forecast stock returns.

The stock markets throughout the world have headed for a tailspin since the news of the pandemic. The capital markets across the world tanked miserably and became highly volatile. COVID-19 has had a far greater influence on stock market volatility than any other pandemic of its type. The epidemic has had a significant influence on real-world economic activities. On the one hand, governments are adopting emergency steps to stem the spread of the disease, such as shutting down government offices. Governments, on the other hand, are putting in place support and stimulus measures in order to limit the harm to the economy. The pandemic has not only disrupted the supply chain and global trade but has also reduced the purchasing power and consumption from the consumer's end. Due to the decrease in consumer spending patterns, manufacturers have halted production to monitor consumer and business purchasing patterns. Investors, like manufacturers and consumers, have slowed their operations as a result of the pandemic's massive uncertainty. This viewpoint provides the impetus for this research. All the sectors have been affected by this pandemic but it is still unknown whether all the sectors are affected negatively or has there been a positive impact too.

Literature Review

Many pandemics have occurred in the past; in 2003, the SARS (Severe Acute Respiratory Syndrome) was expected to cost the world between $30-$100 million USD (Smith, 2006). Lee and McKibbin (2004), Siu and Wong (2004), Nippani and Washer (2004) examined the negative impact of the SARS outbreak on the economies of affected countries. Many recent studies concerning COVID-19 and stock returns have focused their attention on analyzing the impact of COVID-19 on the stock market after its outbreak (Chen et al., 2007; Al-Awadhi et al., 2020; Ashraf, 2020; Aravind & Manijkrishnan, 2020; Onali, 2020; Rameli & Wagner, 2020; Yan, 2020; Zaremba et al., 2020; Zhang et al., 2020). Most of the studies focused on specific or cross-country comparisons. However, only a few of these studies have explored the industry-specific impact of the pandemic. The impact of SARS on airline stocks listed on the stock exchanges of Canada, Hong Kong, China, Thailand, and Singapore was studied by Loh (2006). The influence of the pandemic on several sectors of the Chinese stock market was explored by Al-Awadhi et al. (2020), while Aravind and Manojkrishnan (2020) focused on the

effects of COVID-19 on pharmaceutical industry stocks listed on the NSE. Nevertheless, a comprehensive study exploring the impact of COVID-19 on multiple sectors of the Indian stock market is still lacking. The present study aims to address this gap, by analyzing the impact of the COVID-19 pandemic announcement by the WHO, on the stock returns of NSE sectoral indices with the help of event study methodology using the market model. Abnormal stock returns over different event windows are analyzed to observe the impact of COVID-19 both before and after the announcement day.

Data & Methodology

The present study aims to analyze the impact of COVID-19 on stock returns of the NSE sectoral indices. For this purpose, all 500 companies included in NIFTY-500 were bifurcated into 19 sectors as per the National Stock Exchange. The bifurcation is shown in Table 1. The data comprises daily closing prices of shares of all the companies listed in NIFTY 500 from 01st April 2019 to 24th July 2020. NIFTY 500 is selected as the benchmark index. Data used in the present study is collected from Prowess Database and investing.com (https://in.investing.com).

Table 1: Sectoral representation

Sector	No. of firms included	Sector	No. of firms included
1. Financial Services	88	11. Oil & Gas	18
2. Consumer Goods	73	12. Power	15
3. Industrial Manufacturing	49	13. Cement & Cement Products	15
4. Pharma	38	14. Fertilisers & Pesticides	12
5. Automobile	30	15. Textiles	10
6. Construction	30	16. Media & Entertainment	10
7. Services	28	17. Healthcare Services	7
8. IT	27	18. Telecom	7
9. Chemicals	21	19. Paper	2
10. Metals	21		

The present study employed event study methodology, which is widely regarded as an acceptable tool for evaluating the effect of an event (Basdas & Oran, 2014). The date of the event is taken as 11th March 2020, when WHO declared COVID-19 as a pandemic. To study the influence in different periods, we set up six windows (-10,0), (0,10), (-20,0), (0,20), (-30,0), (0,30) consisting of 30 trading days before and after the event day and estimation window is taken as t = -232 to t = -31. The Market model of event study methodology , which is the most common

analysis is used in the present study (Agrawal & Kamakura, 1995; Brown & Warner, 1985; Curran & Moran, 2007; Cheung, 2011; Das et al., 2017).

The estimation period is used to calculate abnormal returns in the post-event period. The abnormal returns calculated are further used to calculate cumulative abnormal returns during different event windows. The t-test is employed to ascertain the significance of these cumulative abnormal returns.

Firstly, the logarithmic returns of each company listed in NIFTY-500 are calculated as follows:

$$LR_{j,t} = ln\left(\frac{P_{j,t}}{P_{j,t-1}}\right) * 100 \quad (1)$$

Where $LR_{j,t}$ is the return of individual stock j on day t; $P_{j,t}$ & $P_{j,t-1}$ is the price of stock j on day t and t-1, respectively. Individual stock returns are then used to calculate the sector index returns by aggregating the individual company's stock returns adjusted for the number of companies in the industry is given in equation (2).

$$R_{i,t} = \frac{1}{n}\sum_{j=1}^{n} LR_{j,t} \quad (2)$$

Where $R_{i,t}$ = Daily returns of the sector i on day t

Similarly, the returns on the market index that is NIFTY-500 is calculated.

To measure the Abnormal Returns (ARs), we need to calculate the estimated returns of each sector. The expected stock returns of each sector are derived using the market model are as follows:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \quad (3)$$

$R_{m,t}$ = Returns of the NIFTY-500 index on day t (market returns)

$R_{i,t}$ = Daily returns of the index sector i on day t

α_i & β_i are the intercept and sensitivity coefficients to be estimated

$\varepsilon_{i,t}$ = Error term

After estimating the coefficients $\hat{\alpha}_i$ and $\hat{\beta}_i$ using ordinary least squares (OLS) regression model, expected returns and abnormal returns for each sector are calculated as follows:

$$E(R_{i,t}) = \hat{\alpha}_i + \hat{\beta}_i . R_{m,t} \quad (4)$$

$E(R_{i,t})$ = Expected return of sector i on day t

Abnormal returns is calculated as follows:

$AR_{i,t} = R_{i,t}$ " $E(R_{i,t})$ (5)

$AR_{i,t}$ = Abnormal return of the sector i on day t

Standardized abnormal returns for each industry ($SAR_{i,t}$) are calculated then. The abnormal returns (ARs) are standardized by dividing them from its standard deviation and then their significance is tested by using t-statistics.

Using the following statistics, the estimation of Standardized abnormal returns is done:

$$SAR_{i,t} = \frac{AR_{i,t}}{S_{AR_i}} \quad (6)$$

Standardized Cumulative abnormal return (CAR) of index i over from period 0 to t is calculated as follows

$$CAR_i(0, t) = \sum_0^t SAR_{i,t} \quad (7)$$

Analysis and Results

The monthly change in returns of various industries for the months- January, February, March, and April is presented in Table 2. We observe that in March 2020 all of the industries experienced negative returns. The worst performing industries were Paper, Financial Services, and Media, experiencing a fall of 39%, 37%, and 32%, respectively in returns. The negative change in returns of all the industries signals the negative market sentiment that was prevalent in the Indian stock market during the month of March, as the pandemic was declared. Industries rebounded after the initial drop and in April 2020, a positive change was observed for all industries except for media.

Table 2: Monthly change in returns

Industry	1 month change in returns (%)			
	January, 2020	February, 2020	March, 2020	April, 2020
Automobile	0.16	-6.61	-18.62	12.09
Cement & Cement Products	12.15	-0.11	-25.05	17.46
Chemicals	9.81	2.72	-19.25	21.59
Construction	4.63	-7.18	-24.90	8.16
Consumer Goods	3.92	1.78	-15.41	11.15
Fertilisers & Pesticides	7.32	7.87	-23.98	28.76
Financial Services	0.65	-0.61	-37.47	12.85
Healthcare Services	15.99	5.00	-17.31	2.92

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Industrial Manufacturing	4.14	5.64	-22.47	13.46
IT	7.03	-5.46	-27.17	18.35
Media	6.85	3.85	-32.64	-16.89
Metals	2.37	-1.84	-31.50	13.94
Oil & Gas	0.63	-7.43	-20.62	22.44
Paper	28.87	-13.08	-39.65	4.22
Pharma	1.17	7.97	-6.56	20.33
Power	0.32	-11.56	-26.82	27.63
Services	7.71	-4.83	-16.25	6.31
Telecom	3.95	-6.94	-23.44	38.36
Textile	4.53	-5.57	-24.81	10.00

We further analysed the cumulative abnormal returns and their significance for various industries/sectors, in different event windows to explore the impact of the announcement. The impact of the COVID-19 pandemic announcement on returns on the NSE sectoral indices is analysed with the help of event study methodology using the market model. To study the short-term influence of COVID-19 during different periods, six event windows (-10,0), (0,10) (-20,0), (0,20), (-30,0), (0,30) were set up consisting of 10, 20 and 30 trading days before, and after the event date. The results of the analysis are presented below:

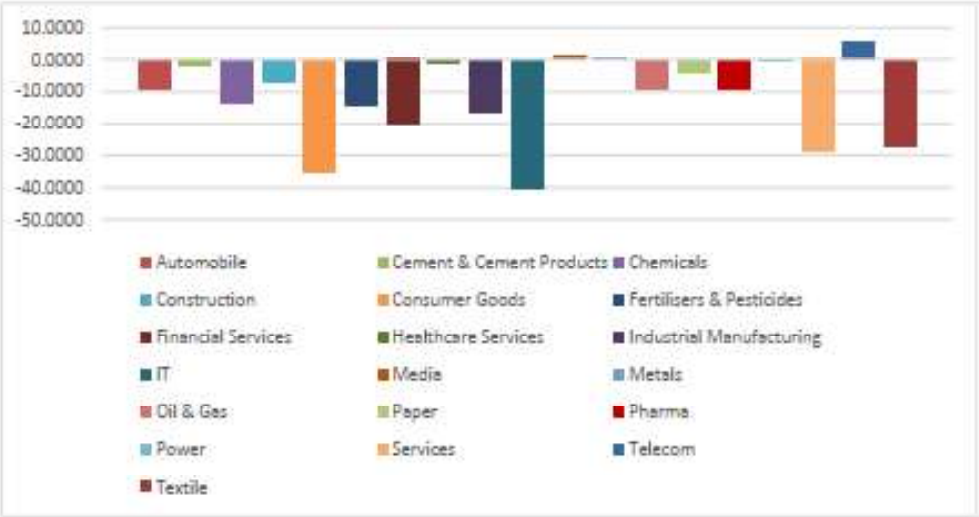

Figure 1 - CARs in (0, 10)

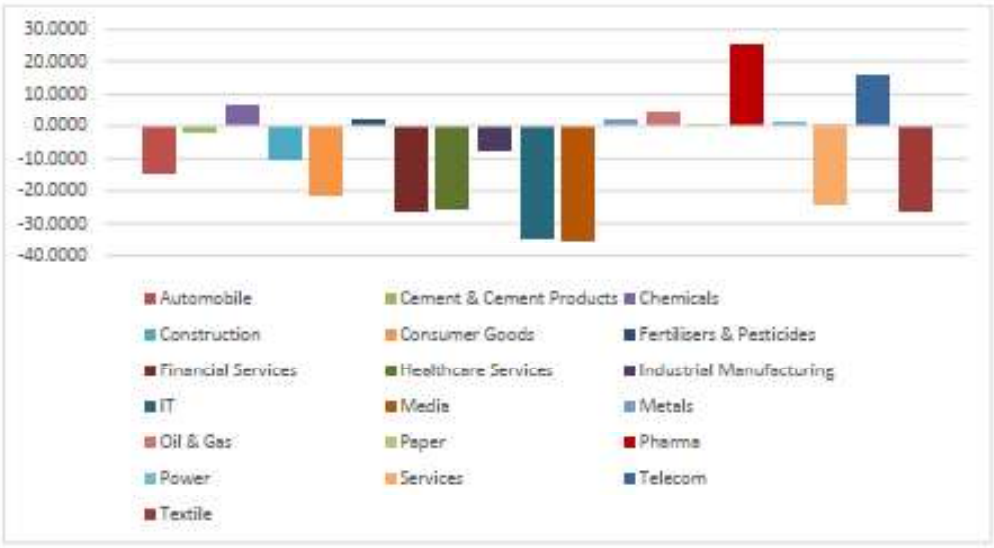

Figure 2 - CARs in (0, 20)

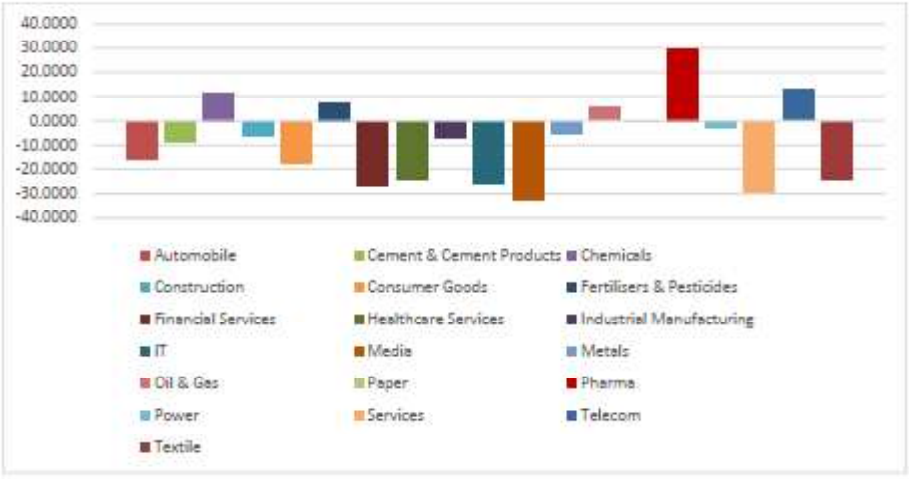

Figure 3 CARs in (0, 30)

Figure 1 shows the CARs of industries in the event window (0, 10). Majority of the industries are shown to have negative CARs in the first ten days of the announcement. IT and Consumer goods have the lowest CAR of -40% and -35% respectively, during this window. In figure 2, the CARs in (0, 20) are shown and we can see that during this window, Media and IT industries have suffered the greatest losses, at -35% and -34% respectively. However, after twenty days of the announcement, few industries were recovering and experiencing positive CARs. Pharma experienced a major change in CARs, going from a negative CAR

of 8% in (0, 10) to a positive CAR of 25% in (0, 20). During the event window of (0, 30), it is observed that the negative returns of the industries were lower overall (refer figure 3), however, still the majority of the industries were experiencing negative CARs.

Table 3: Standardized cumulative abnormal returns (SCAR) over the different event windows

Industry	(-10,0)	(0,10)	(-20,0)	(0,20)	(-30,0)	(0,30)
Automobile	2.8878 (0.8707)	-8.8339* (-2.6635)	1.4950 (0.3262)	-14.1371* (-3.0850)	-1.3525 (-0.2429)	-16.0652* (-2.8854)
Cement & Cement Products	6.8044** (2.0516)	-1.6666 (-0.5025)	6.2075 (1.3546)	-2.0369 (-0.4445)	2.7923 (0.5015)	-9.0284 (-1.6215)
Chemicals	-0.4364 (-0.1316)	-13.4447* (-4.0537)	-1.1097 (-0.2421)	6.2216 (1.3577)	-1.2452 (-0.2236)	11.5794** (2.0797)
Construction	-3.2396 (-0.9768)	-6.8841** (-2.0756)	-10.1888** (-2.2234)	-10.3633** (-2.2614)	-12.9788** (-2.3311)	-5.8295 (-1.0470)
Consumer Goods	-3.3824 (-1.0198)	-35.0397* (-10.5649)	-2.4654 (-0.5380)	-20.9473* (-4.5711)	-0.8738 (-0.1569)	-18.0307* (-3.2384)
Fertilisers & Pesticides	-0.3689 (-0.1112)	-14.1885* (-4.2780)	-3.7937 (-0.8279)	1.7745 (0.3872)	-8.3691 (-1.5031)	7.5253 (1.3516)
Financial Services	-3.7389 (-1.1273)	-20.2914* (-6.1181)	-4.4290 (-0.9665)	-25.8152* (-5.6333)	-3.2426 (-0.5824)	-26.6554* (-4.7875)
Healthcare Services	9.3248* (2.8115)	-0.6962 (-0.2099)	8.9667** (1.9567)	-25.1412* (-5.4863)	14.5495* (2.6132)	-24.4246* (-4.3868)
Industrial Manufacturing	-2.4182 (-0.7291)	-16.3372* (-4.9259)	-6.7474 (-1.4724)	-7.3858 (-1.6117)	-6.0329 (-1.0835)	-7.1283 (-1.2803)
IT	-10.9463* (-3.3004)	-40.2107* (-12.1240)	-12.7486* (-2.7820)	-34.2654* (-7.4773)	-12.4929** (-2.2438)	-25.6273* (-4.6028)
Media	15.6214* (4.7100)	1.3192 (0.3978)	14.5730* (3.1801)	-35.3998* (-7.7249)	22.4953* (4.0403)	-32.6129* (-5.8575)
Metals	-5.0820 (-1.5323)	0.1210 (0.0365)	-9.4586** (-2.0640)	1.5573 (0.3398)	-9.4369*** (-1.6949)	-5.5820 (-1.0026)
Oil & Gas	-7.9403** (-2.3941)	-8.8183* (-2.6588)	-13.0887* (-2.8562)	4.7860 (1.0444)	-14.5380* (-2.6111)	5.6068 (1.0070)
Paper	-0.4035 (-0.1217)	-4.1727 (-1.2581)	-0.5038 (-0.1099)	0.2937 (0.0641)	-1.2464 (-0.2239)	-0.4851 (-0.0871)
Pharma	-2.5293 (-0.7626)	-8.8952* (-2.6820)	-1.3785 (-0.3008)	25.1617* (5.4907)	3.1718 (0.5697)	29.7171* (5.3374)
Power	-10.8312* (-3.2657)	-0.0203 (-0.0061)	-18.3969* (-4.0145)	1.0635 (0.2321)	-23.5859* (-4.2362)	-2.8823 (-0.5177)

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Services	-11.1538*	-28.9808*	-11.3679**	-24.3912*	-10.2124	-29.0121*
	(-3.3630)	(-8.7380)	(-2.4807)	(-5.3226)	(-1.8342)	(-5.2107)
Telecom	2.4217	5.1589	-0.8495	15.3177*	-1.4036	13.0679**
	(0.7302)	(1.5555)	(-0.1854)	(3.3426)	(-0.2521)	(2.3471)
Textile	-6.7115**	-27.2418*	-7.2559	-25.8585*	-13.2231**	-24.0025*
	(-2.0236)	(-8.2137)	(-1.5834)	(-5.6428)	(-2.3749)	(-4.3110)

Note: *Indicates significance at 1%, **indicates significanceat 5%, ***indicates significance at 10%

Table 3 presents CARs of industries in different event windows as well as their respective t-statistic values to ascertain the significance of CARs. Event windows of (-10,0), (-20, 0), (-30, 0), (0, 10), (0, 20), and (0, 30) were used for this purpose. In the pre-event window of (-30, 0), Power experienced the greatest losses as its CAR was found to be at -23% and was significant at 1%. The media industry at the same time had the highest CAR of 22%. Power continued to experience losses in the event windows of (-20, 0) and (-10, 0) as well. Oil and Gas, IT, and Services were also experiencing negative and significant CARs during these windows. Media industry, on the other hand, had the highest CAR of 14% and 15% in the periods of (-20, 0) and (-10, 0), respectively. Historically, the Power industry in India has relied upon the imports of power generation equipment from China to provide electricity at a reasonable cost. However, with the outbreak of COVID-19 in China, and a lockdown being announced in the country in January, businesses were negatively impacted, resulting in a loss of imports for the Indian power sector. COVID-19 scenario in India during the months of January and February was still at a nascent stage, and no restrictions were imposed by the Government, and thus, most of the sectors were not experiencing any significant negative CARs during the pre-event day windows. Next, the post-event day windows of (0, 10), (0, 20), and (0, 30) were analysed. During the first 10 days of the announcement, 12 of the 19 industries suffered significant negative CARs, signalling the presence of a strong negative investor sentiment in the market. IT suffered the most, with a negative CAR of around 40%, followed closely by Consumer goods, Services, and Textile. None of the industries in this window experienced significant and positive CAR. The effect of the announcement was seen across the industries and the market, in general, suffered from a downward trend amidst the panic that was created. Cumulative returns during the first 20 days, however, showed more mixed results. On one hand, Media and IT were experiencing CARs of -35% and -34%, and on the other, Pharma saw a positive CAR of 25%. In the window (0, 30), after one month of the announcement, while industries were still experiencing negative CARs, their levels were lowering. The CAR of Media, improved from -35% to -32%, in addition, IT industry also saw an impressive improvement, with their CAR now being at -25%, as against the -34% during the period (0, 20). Pharma, Telecom and Chemicals were the only industries that were experiencing positive and significant CARs during the

first month of the announcement. Pharma stood at the top with a CAR of 29% (significant at 1%), whereas, Telecom and Chemicals had CARs of 13% and 11.5%, respectively. Lockdown in India was announced on 24th March 2020, curbing free movement of citizens and imposing strict restrictions on businesses. In the above observations, the Media industry can be observed as being one of the most negatively impacted industries. As the lockdown was imposed, there was a lack of new content on television as well as postponement and even cancellation of major sports events, which led to a sharp reduction in revenues for the industry. Investors were quick to react to the changing environment for the Media Industry, resulting in high negative returns in the market. The IT sector was also majorly affected during this period, as the offices were shut down and the companies were in search of alternate methods of continuing business operations. The demand for IT solutions from foreign customers also took a hit as COVID-19 spread across the globe. However, the IT sector showed signs of improvement in the latter part of the first month, with a lower negative CAR. The industry adopted the 'work from home' model, and with businesses being underway again, investor sentiments could have been affected positively by this move. Consumer goods, financial services, and the Automobile industry were also experiencing negative and significant CARs during these windows. With the lockdown being imposed, income of consumers was negatively hit, and overall demand in the economy suffered as low disposable income meant less demand for goods that were not essentials. In addition, this also meant that borrowers were more prone to default now, and consequently, EMIs of various types of loans were deferred, which resulted in the negative movement of the returns of the Financial Services industry. On the flip side, industries that were showing positive and significant CARs were Pharma, Telecom, and Chemicals. As the pandemic was spreading across the nation, the demand for pharmaceutical products was on the rise. Medicines and medical equipment were one of the most sought-after goods by the individual consumer, and at the same time hospitals were looking to replenish their inventories in response to the growing COVID-19 threat. Telecom sector's rise in the pandemic can be attributed to the rising demand of internet and data services during the lockdown period. As more and more businesses were adopting the 'work from home' approach, higher and better internet services were being demanded by the consumers, resulting in an impressive growth in the telecom sector. Lastly, we observed Chemical industry was also experiencing positive CARs during the studied period, which can be attributed to the increasing import tariffs and worsening relations of China with the other major economies of the world. China led India in the chemical industry and as the threat of COVID-19 was rising, China was being targeted by world leaders, primarily the United States of America. The negative sentiment against China, provided a positive turn for the Chemical industry in India, as other economies could now look to India for their chemical raw material needs, resulting in a positive change in the stock market.

The results and observations in the paper indicate the massive impact that COVID-19 had on various industries in India. While a few industries were able to gain from the pandemic outbreak, most industries suffered due to reduced disposable income and consumer demand in the economy.

Conclusions

The results show that during the pre-event period, the Power sector was suffering the most, owing to the disruption of power generation equipment imports from China due to the virus outbreak. Post the announcement, a majority of the industries suffered from negative CARs indicating a wide impact of COVID-19 on the stock market as a whole. IT, Media, and Consumer goods were the worst hit sectors post the pandemic announcement. This period saw the introduction of a complete lockdown in India, leading to a state of panic among the investors. Businesses were shut down, the disposable income of consumers was falling, and there was a lack of new content on television. Amidst the panic, while most of the industries were suffering, investor confidence in the Pharma sector was growing strong as the outbreak spread across the country owing to the growing demand of medicines and medical equipment. A few sectors namely IT and Telecom experienced an impressive improvement in their CARs in the latter period as the 'Work from Home' model was being adopted by different organisations. While the impact of COVID-19 varies across industries as well as event windows, it is observed that the effect of the pandemic has been largely negative on the Indian stock market, however, a handful of industries were able to benefit from the changing business environment due to the virus outbreak.

The results of the study show that the negative impact on businesses and consumer income has spilled over to the markets and as the lifestyle of people began adjusting to the pandemic scenario, the market as well-made similar adjustments. The implications of the study findings of the present study make it clear to the businesses that they must devise their business strategies in a manner that shall help them to sustain their businesses in cases of occurrence of such black-swan events in the future. Also, the present findings have implications for the Government to plan development activities for the economy in case such black swan events hit the economy.

Limitations of the Study

The study can be extended to understand which industries are sensitive to such events world-wide by doing cross-country comparisons. Moreover, the research can also be extended to a longer period of time when different announcements regarding lockdowns were made by the Government.

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Impact of Commodity Futures Traded on NCDEX in India

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Abstract: The introduction of commodity futures market in India has travelled a long journey and many changes have been implemented in the trading system in this regard. Commodity futures market, in India, which started working in 1875, provides a platform for various stakeholders of commodity to hedge their price risk. The commodity futures market holds a vital place in the economy and it becomes imperative that it should be analysed to seek answers. The main theme of this paper is to analyse the impact of commodity futures price on the spot price in, national-level commodity exchange, NCDEX (National Commodity & Derivatives Exchange Limited). This study assesses the price discovery aspect of commodity futures market. It is assumed that the commodity futures market will develop more faster and it will be a good choice for all the market participants in the near future for price discovery and it will explore its way in the Indian economy too.

Keywords: Futures Contract, Hedging, Cointegration, Spot Price, Stationarity

Introduction

Commodities in agricultural sector are significant for countries as they are providing foodstuff, creating revenue- producing prospects to the parties attached in agrarian deeds. Similar in other countries, the Indian commodity area practised fabulous growth regarding an additional refined configuration. In 1991, the Administration interference has meaningfully weakened after the beginning of liberalisation and commercial improvements. The effect of farming product is of countless prominence in the stabilisation of Indian economy which is exposed over food articles in origin of Wholesale Price Index (WPI) and Consumer Price Index (CPI) in India. The steady efforts were managed globally to create the requirement of handling the danger of agrarian market.

A futures contract is a pact to trade a specific amount of an inherent asset at a particular period in the future at a predestined value. The futures contract is a uniform monetary agreement operated in a recognised exchange. (Hull, 2003)

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In a futures contract dual factions arrive, in a lawfully obligatory, uniform treaty to sell or acquire a specified product or monetary instrument of certain capacity at a forthcoming day. The value is the individual variable which is secure once the agreement is started. The deal is counterbalance by a reverse business before the period of delivery. The listed exchange performs like a third participant for both the parties. The purchaser is really buying the contract from the exchange and the seller is trading the contract to the exchange.

The value at which the contract is operated in the futures market is termed as the futures price. Futures contracts have one, two and three-month's termination cycles, besides they generally terminate on the final Thursday of the respective month. (Vohra & Bagri, 2012)

Review of Literature

Malhotra & Sharma (2016) opined that the futures prices do not stabilise the volatility in the spot prices of oil and oilseeds. Mentha oil, refined soya oil, crude palm oil and mustard oil were selected as commodities. GARCH (Generalized Autoregressive Conditional Heteroskedasticity) model was used to test the volatility between the futures and spot markets. Granger Causality was studied to find out the relationship between the futures trading activity and spot price. It was observed that there is bi-directional volatility between the spot and futures market. The speculators, with mis-information in futures market, de-stabilised the underlying spot market. Mattos *et al.,* (2016) investigated the bearing of harvest testimonies from the United States of America and Brazil on corn and soyabean futures marketplaces from 2004 to 2014. It indicated that the United States of America conveys constantly affected corn and soyabean futures price instability, but Brazilian crop state's effect on unpredictability was of lesser extent. A Threshold Autoregressive Conditional Heteroskedasticity (TARCH) model was used to study the impact of crop reports and the help of dummy variable was also taken. Further research can be done by taking the high frequency data of various other countries having any kind of dependence in terms of pricing or trading of concerned goods or both. Bosch & Pradkhan, (2017) discovered that there is an impact on the convergence rate between the commodity spot and future prices based on the trading activities by hedgers, speculators and index traders. It was tested through auto-regression model of Garbade and Silber having lag one and cross-sectional regression of Fama and Macbeth. The results depicted that the trading activities of speculators, having information, were increasing the convergence between the futures and spot prices. On the other hand, the hedgers produced different results because their trading activities were based on private information.

Gupta *et al.*, (2017) found that the hedging played a significant role in the Indian commodity futures market. The commodities related to agriculture and non-agriculture sector was selected and various econometric techniques, named as ordinary least square, vector auto-regression, vector error correction model, vector auto-regressive multivariate generalised auto-regressive conditional heteroscedasticity model, were used to examine the hedge ratio and hedging effectiveness. Sanjuan-Lopez & Dawson, (2017) suggested that the speculation through index trading could impact the returns and volatility in the case of corn, soyabean and wheat futures market. The weekly data from 2006-14 had been collected from Chicago Board of Trade (CBOT) and the multivariate generalised autoregressive conditional heteroscedasticity model was used.

Objective

The present study is being taken up to discover the association amid the spot and futures prices of agrarian commodities.

Research Methodology

NCDEX is traded in many commodities. Out of these, Barley, Castor, Coriander and Guar Gum are selected from NCDEX based on their active trading and availability of the spot and futures price. The secondary data on daily spot price and futures price were collected from CMIE (Centre for Monitoring Indian Economy) database related to commodities sector and Capitaline CSS database. The related data point was occupied for an era of 10 years, beginning from September 2009 to August 2019. The precise aera may differ for various commodities, dependent on the accessibility of transacting information. If there are additional trading prices then the final price or the closing price is studied for the analysis. If there is at all omitted observation, owing to non-trading, in any day, the usual exercise is to eliminate that particular break from the sample and it has been employed here also. For stationarity, the Augmented Dickey–Fuller (ADF) test, on the chain of log futures and spot price, was applied. In the present study, Johansen approach has been applied to test the cointegration (Brooks, 2014). The data has been analysed with the help of Eviews-8.

Findings

Barley

The Table explains the basic statistics for Barley. Jarque-Bera and its probability are showing the non-normality in the data of Barley. Log spot price, log futures price and return futures price may generate negative return as the skewness is negative in these prices. The distribution of skewness is approximately symmetric for log spot price, log futures price and return futures price. On the other hand,

it is highly skewed for return futures price. Kurtosis is mesokurtic in case of log spot price and it is near to normal distribution for log futures price, but it is leptokurtic for return spot and return futures price.

Table 1: Descriptive statistics for Barley

	Log Spot Price	Log Futures Price	Return Spot Price	Return Futures Price
Mean	7.140210	7.214615	0.029038	0.026211
Median	7.122463	7.220008	0.010088	0.000000
Maximum	7.549872	7.583756	14.07697	10.56581
Minimum	6.602724	6.736018	-16.20375	-25.73180
Standard Deviation	0.193398	0.167812	2.430712	1.490122
Skewness	-0.153490	-0.245507	0.053920	-2.500516
Kurtosis	2.637924	3.016743	8.325672	54.81454
Jarque-Bera	25.97937	27.82850	3270.151	312299.4
Probability	0.000002	0.000001	0.000000	0.000000
Observations	2767	2767	2766	2766

Test for Stationarity

ADF is applied on log futures and log spot price in Barley. The results, on both the prices, are intimated through Table 2. On the basis of t-Statistic and probability value, there is a presence of non-stationarity in the prices of Barley.

Table 2: ADF test for Barley

Series	Lag Length based on Schwartz Information Criteria	ADF test statistic *t* statistics	MacKinnon (1996) one-sided *p*-value
Log Futures Price	1	0.800384	0.8852
Log Spot Price	4	1.494255	0.9671
Return Futures Price	0	-49.57289	0.0001
Return Spot Price	3	-36.20025	0.0000

H_0: Series have a unit root.

C.V.: 1% 2.565799, 5% 1.940938 and 10% 1.616622

It also outlines the stationarity in return futures and return spot price. The null hypothesis can be rejected on the basis of t-Statistic and probability value. So, the futures and spot price are become stationary after the first differencing.

Test for Cointegration

JCT (Johansen Cointegration Test) is applied on log futures and log spot price in table 3. Trace and Maximum Eigen Value both are illuminating the same result. There is a cointegration between these two prices in Barley. Null hypothesis of no cointegrating equation can be rejected based on the concerned statistic and its probability value. As a result, there exists some kind of relationship between log futures and log spot price in this commodity.

Table 3: Johansen cointegration test for Barley

Hypothesised Number of Cointegration Equation (s)	Eigen Value	Trace Statistic	0.05 C.V.	Probability Value
No one*	0.015508	44.32189	12.32090	0.0000
At most 1	0.000411	1.136170	4.129906	0.3336
Trace test signifies 1 C.E.(s) at the 5% level Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized Number of Cointegration Equation(s)	Eigen Value	Maximum-Eig. Stat.	5%Crit. Value	Prob.
No one*	0.015508	43.18572	11.22480	0.0000
Maximum 1	0.000411	1.136170	4.129906	0.3336

Sample (adjusted): 9/05/2009 8/29/2019Ob.s: 2763 following adjustmentSeries: LOGFUTURESPRICE LOGSPOTPRICEInterval in Lags (after 1st diff.): 1 to 3Unrestricted Cointegration Rank Test (Trace)

Maximum-eigen value test signifies 1 C.E.(s) at the 5% level* Symbolizes refusal of the hypothesis at the 5% level

Castor

Table 4 represents the higher kurtosis (89.96894) for the return spot price by comparing with the kurtosis of all the other three types of prices. Even the Jarque-Bera statistic is 206465.4 in return spot price which is large as compare to the statistic of other prices. The maximum return of 38.96365 and minimum return of -40.80775 indicate that there may be some outlier(s) and it was found that there were two outliers, one on October 19, 2017 and another on April 14, 2019. Although there was not any significant news related to these months which can describe the change in the price particularly for these dates. So, these outliers have been removed from the spot prices of Castor and the corresponding futures prices were also removed for further analysis.

Table 4: Descriptive statistics for castor

	Log Spot Price	Log Futures Price	Return Spot Price	Return Futures Price
Mean	8.367080	8.451873	0.066529	0.058989
Median	8.343375	8.427815	0.013971	0.000000
Maximum	8.638685	8.743532	38.96365	3.919276
Minimum	8.142500	8.254789	-40.80775	-4.077575
Standard Deviation	0.120489	0.121545	3.090400	1.343423
Skewness	0.342493	0.369593	-0.622189	0.017187
Kurtosis	1.897823	1.923047	89.96894	3.889553
Jarque-Bera	46.02932	46.63678	206465.4	21.62825
Probability	0.000000	0.000000	0.000000	0.000020
Observations	656	656	655	655

Table 5: Descriptive statistics for castor after removing outliers

	Log Spot Price	Log Futures Price	Return Spot Price	Return Futures Price
Mean	8.367694	8.451540	0.066733	0.059170
Median	8.343590	8.427815	0.007810	0.000000
Maximum	8.638685	8.743532	16.52755	3.919276
Minimum	8.151996	8.254789	-15.12970	-4.223449
Standard Deviation	0.120152	0.121334	2.110538	1.347288
Skewness	0.345984	0.367682	0.184872	0.005925
Kurtosis	1.891936	1.919205	14.73056	3.894511
Jarque-Bera	46.50555	46.56695	3747.750	21.77458
Probability	0.000000	0.000000	0.000000	0.000019
Observations	654	654	653	653

Table 5 illustrates the descriptive statistics for Castor after removing the outliers. The change in the basic statistics of return spot price can be seen in this table. The anomaly which is seen in table 4 is not present now. Negativity in skewness is also gone. The non-normality is present in the data of Castor. The skewness is showing the distribution as approximately symmetric for all the prices. Kurtosis is mesokurtic for log spot and log futures price. It is leptokurtic for the other two types of prices.

Test for Stationarity

As an econometric tool, ADF is applied to test the stationarity in the case of Castor. On the basis of t-Statistic and probability value, table 6 renders the non-stationarity in the futures and spot price.

Table 6: ADF test for castor

Series	Lag Length based on Schwartz Information Criteria	ADF test statistic *t* statistics	MacKinnon (1996) one-sided *p*-value
Log Futures Price	0	1.103635	0.9303
Log Spot Price	2	0.993095	0.9157
Return Futures Price	0	-23.20547	0.0000
Return Spot Price	1	-22.02355	0.0000

H_0: It has a unit root.

C. V.: 0.01 2.568508, 0.05 1.941309 and 0.10 1.616373

As per this table, futures and spot price transform into stationarity after the first differencing. The null hypothesis can be rejected based on the t-Statistic and probability value at all the level of significance.

Test for Cointegration

Table 7 produces the result of cointegration on the basis of JCT in log futures and log spot price of Castor. The null hypothesis of no cointegration equation can be rejected in both the Trace and Maximum Eigen Value statistic and its probability value. Alternatively, the null hypothesis of at most one cointegrating equation cannot be rejected on the basis of both the tests. So, there exists some kind of relationship between log futures and log spot price in Castor.

Table 7: Johansen cointegration test for castor

Hypothesised Number of Cointegration Equation(s)	Eigen Value	Trace Statistic	0.05 C. V.	Probability Value
No one*	0.123187	86.60786	12.32090	0.0001
Maximum 1	0.001372	0.895125	4.129906	0.3980
No one*	0.123187	85.71273	11.22480	0.0001
Maximum 1	0.001372	0.895125	4.129906	0.3980

Sample (adjusted): 1/09/2017 8/30/2019Ob.s: 652 following adjustment Series: LOGFUTURESPRICE LOGSPOTPRICEInterval in Lags (after 1st diff.): 1 to 1Unrestricted Cointegration Rank Test (Trace)

Trace test signifies 1 of C.E.(s) at the 5% levelUnrestricted Cointegration Rank Test (Max. Eigen Value)

Maximum-eigen value test signifies 1 C.E.(s) at the 5% level* Symbolizes refusal of the hypothesis at the 5% level

Coriander

Table 8 outlines the basic statistical properties of log spot price, log futures price, return spot price and return futures price. Standard deviation is high for return spot price as compare to other prices' standard deviation. Skewness is approximately symmetric for all the prices except return futures price. For return futures price, skewness in the distribution is moderately skewed. Kurtosis is mesokurtic for log spot and log futures price, but it is leptokurtic for both the return prices. Jarque-Bera statistic is high enough to consider all the four types of prices having non-normal distribution which can also be seen through probability.

Table 8: Descriptive statistics for coriander

	Log Spot Price	Log Futures Price	Return Spot Price	Return Futures Price
Mean	8.642486	8.717031	-0.010301	-0.018720
Median	8.641108	8.756210	0.013349	-0.025665
Maximum	9.097284	9.058005	34.17011	14.19016
Minimum	8.303629	8.341887	-51.51694	-9.353303
Standard Deviation	0.162628	0.184947	6.558134	1.926257
Skewness	0.023358	-0.225142	-0.527920	0.603273
Kurtosis	1.874499	1.746211	12.81449	8.227441
Jarque-Bera	48.37814	67.66204	3710.799	1096.111
Probability	0.000000	0.000000	0.000000	0.000000
Observations	915	915	914	914

Test for Stationarity

Table 9: ADF test for coriander

Series	Lag Length based on Schwartz Information Criteria	ADF test statistic *t* statistics	MacKinnon (1996) one-sided *p*-value
Log Futures Price	0	-0.329355	0.5667
Log Spot Price	2	-0.192152	0.6169
Return Futures Price	0	-28.14455	0.0000
Return Spot Price	2	-25.28449	0.0000

H_0: It has a unit root.

C.V.: 0.01 2.567495, 0.05 1.941170 and 0.10 1.616466

Table 9 represents the non-stationarity in log futures and log spot price with help of a statistical tool named as ADF. As a result, the null hypothesis of having a unit root is not rejected for both the prices. On the other hand, return futures and return spot price are not accepting the null hypothesis of having unit root which depict the presence of stationarity in both the prices after first difference.

Test for Cointegration

Table 10: Johansen cointegration test for coriander

HypothesisedNumber of Cointegration Equation(s)	Eigen Value	TraceStat.	0.05C. V.	Probability Value
No one*	0.068230	64.60752	12.32090	0.0000
Maximum 1	9.25E-05	0.086954	4.129906	0.8086
Trace test signifies 1 C.E.(s) at the 5% level of significanceUnrestricted Cointegration Rank Test (Max. Eig. Val.)				
HypothesizedNumber of Cointegration Equation(s)Eigen ValueMaximum-EigenStatistic0.05C.V. Probability Value				
No one*	0.068230	64.52056	11.22480	0.0000
At most 1	9.25E-05	0.086954	4.129906	0.8086

Sample (adjusted): 1/05/2016 8/30/2019Ob.s: 913 following adjustmentSeries: LOGFUTURESPRICE LOGSPOTPRICEInterval in Lags (after 1st diff.): 1 to 1Unrestricted Cointegration Rank Test (Trace)

Maximum-Eig. Val. test signifies 1 C.E.(s) at the 5% level of significance* Symbolizes refusal of the hypothesis at the 5% level of significance

The above-mentioned table represents the presence of relationship between log futures and log spot price for Coriander. The null hypothesis of having no cointegrating equation between them is rejected by Trace and Maximum Eigen Value statistic. On the other hand, the null hypothesis of having at most one cointegrating equation cannot be rejected based on the statistics. So, there exists some kind of relationship between these prices for Coriander.

Guar Gum

Table 11 drafts the basic statistical properties for log spot price, log futures price, return spot price and return futures price of Guar Gum. Standard deviation is low in log spot and log futures price as compare to the other two prices. Skewness in the distribution is moderately skewed for log spot and log futures price. Skewness in the distribution is approximately symmetric for both the return prices. Kurtosis is mesokurtic for log spot and log futures price, but it is leptokurtic for both the return prices. Jarque-Bera is high for all the three prices except return futures price which is rendering the non-normality in the distribution of these three prices.

Table 11: Descriptive statistics for Guar Gum

	Log Spot Price	Log Futures Price	Return Spot Price	Return Futures Price
Mean	8.967688	8.976148	0.042377	0.022368
Median	9.026814	9.021477	0.000000	0.000000
Maximum	9.239414	9.256174	6.790776	5.963419
Minimum	8.523155	8.643473	-6.498698	-7.278315
Standard Deviation	0.161109	0.145046	1.634156	1.778180
Skewness	-0.784321	-0.526433	0.193232	-0.058016
Kurtosis	2.669726	2.206135	4.662999	3.436879
Jarque-Bera	85.76444	58.03074	97.16401	6.810893
Probability	0.000000	0.000000	0.000000	0.033192
Observations	801	801	800	800

Test for Stationarity

Table 12 outlines the same result of accepting the null hypothesis which is depicting the presence of unit root in log futures and log spot price of Guar Gum. So, there is non-stationarity in the both the prices. This table also represents the return futures and return spot price for Guar Gum. In this, the null hypothesis is not accepted of having the unit root in these prices. As a result, there is stationarity in both the prices.

Table 12: ADF test for Guar Gum

Series	Lag Length based on Schwartz Information Criteria	ADF test statistic *t* statistics	one-sided *p*-value
Futures Price (log)	0	0.325998	0.7794
Spot Price (log)	0	0.699787	0.8664
Return Futures Price	0	-27.19263	0.0000
Return Spot Price	0	-28.12824	0.0000

H_0: It has a unit root.

C.V.: 0.01 2.567856, 0.05 1.941219 and 0.10 1.616433

Table 13 drafts the relationship between log futures and log spot price for Guar Gum. Johansen Cointegration test depicts the presence of relationship between these prices. The null hypothesis of having no cointegration is rejected by Trace and Maximum Eigen Value statistic, but the null hypothesis of having at most one cointegration equation cannot be rejected based on the p-value in both the statistic. So, there is a presence of some kind of relationship between these prices of Guar Gum.

Test for Cointegration

Table 13: Johansen cointegration test for Guar Gum

Hypothesised Number of Cointegration Equation(s)	Eigen Value	Trace Stat.	0.05 C.V.	Prob.
No one*	0.033248	27.26732	12.32090	0.0001
Maximum 1	0.000399	0.318160	4.129906	0.6348

Tr. test signifies 1 C.E.(s) at the 5% level of significanceUnrestricted Cointegration Rank Test (Maximum Eigen Value)

Hypothesized Number of Cointegration Equation(s)	Eigen Value	Maximum-Eig. Stat.	5%C.V.	Prob.
No one*	0.033248	26.94916	11.22480	0.0001
Maximum 1	0.000399	0.318160	4.129906	0.6348

Sample (adjusted): 5/06/2016 8/27/2019Included observations: 797 after adjustmentsTrend assumption: No deterministic trendSeries: LOGFUTURESPRICE LOGSPOTPRICEInterval in Lags (after 1st diff.): 1 to 3Unrestricted Cointegration Rank Test (Trace)

Maximum-eigen value test signifies 1 C.E.(s) at the 5% level of significance* Symbolizes refusal of the hypothesis at the 5% level of significance

It can be seen that all the four commodities are indicating towards the non-stationarity in their data related to futures and spot price but the status is changed into stationarity after first differencing. JCT is pointing towards the presence of relationship between these two prices for these commodities. Both the Trace statistic and Maximum Eigen Value reject the null hypothesis of having no cointegration equation and do not reject the hypothesis of having at most one cointegration equation based on the probability value. So, the futures price has some kind of effect on the trading of these commodities based on their spot prices.

Conclusion

Spot and futures prices are discovered to be cointegrated of order one which indicates that there is a long-run equilibrium association between them. Indian commodity futures markets are in the developing stage. On the basis of these results, investors can decide about investment in commodity futures market and the regulating agencies can build policies based on the market efficiency of these commodities in NCDEX.

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Determinants of Dividend Policy An Analysis of Indian Companies

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Abstract: The main purpose of the study is to identify the key determinants of dividend policies of Indian companies. 93 companies included in the NIFTY 100 index comprised a sample for the study. A 10-year period ranging from 2010 to 2019 was considered for the study. Pooled OLS and fixed effect models were applied to identify the key determinants of dividend policy. The results of pooled OLS suggest that profitability and past dividends are positively associated with the dividend payout ratio. On the other hand, it finds that size, liquidity, and risk are not associated with the dividend payout ratio. The results of the fixed effect model suggest that the dividend payout ratio is negatively related to liquidity and positively related to the price-earnings ratio. They also indicate that profitability, firm size, and risk do not seem to have any impact on the dividend policy of the firms.

Keywords: Dividend payout ratio, size, profitability, liquidity, risk,

Introduction

Dividend policy has always attracted significant attention from academics, practitioners, and theorists in finance literature. It has always been a matter of great inquiry as to what extent dividend payments affect the value of the firm and what should be the ideal dividend payout. If we subscribe to the view that dividends do matter and have a positive impact on the value of the firm then the next logical question would be: what determines dividends? Darling (1957) extended the hypothesis that for large industrial companies dividends will change positively with a change in current profit, past profits, rate of amortization recoveries, and changes in anticipated future earnings. Further, he observed that dividends will vary in a negative direction with a change in the sales level. Miller and Modigliani (MM) (1961) showed that in a perfect market, assuming rational investor behaviour, a dividend decision does not affect the value of a share.

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DeAngelo, and DeAngelo (2004) suggested that cash generated from previous projects and marginal productivity of new investments should be considered as primary drivers of payout policy. Faulkender, et al. (2006) found that firms displaying greater agreement between CEO and investors have significantly low leverage and dividend payout ratios. Al-Kuwari (2009) investigated the determinants of dividend policies of listed companies of emerging stock exchanges. The results suggest that firm size, profitability, and government ownership are directly related to dividend payments. Kumar (2006) attempted to analyze the relationship between ownership structure and payout policy in the context of Indian companies. The study finds a positive relation between dividend and earnings trend, and a negative relationship between corporate ownership and dividend payments.

Literature Review

Rozeff (1982) analyzed growth, beta, and agency costs as important determinants of dividend policy. The study finds that a firm's past and future growth rate in sales, beta, and insider ownership of stock are negatively related to dividend payout. It further finds a positive relationship between the number of common stockholders and dividend policy. Barclay, et al, (1997) empirically analyzed the determinants of leverage and dividend policies. Their study revealed that there is a significant relationship between the market-to-book ratio and dividend yield. The abnormal earnings demonstrated a negative and marginally significant relationship with dividends. Holder, et al, (1998) attempted to identify the important determinants of dividend policy. Their study reported that a greater degree of insider ownership results in a lower payout. A large number of shareholders cause a higher dividend payout. Similarly, higher free cash flow also results in a higher payout. D'Souza & Saxena (1999) examined the relationship between dividend payout, agency costs, market risk, and investment opportunities. The study finds that dividend payout is negatively related to agency cost and beta. It also suggests that investment opportunities do not affect dividend payout. Reddy (2002) examined the dividend behaviour of Indian firms during the period 1990-2001. The study reveals that large and profitable firms tend to pay higher dividends irrespective of growth opportunities. It corroborates the notion that dividend omissions indicate future earnings. It also suggests that current losses are important determinants of dividend reduction for companies with a good track record. Farinha and Foronda (2005) analyzed the relationship between insider ownership and dividend policy by taking a sample of companies following the Anglo- Saxon tradition. The study finds that the pattern of the relationship between insider ownership and dividend policy is negative-positive-negative in the case of companies following Anglo Saxon tradition. Anil and Kapoor (2008) assessed the impact of dividend policy on the wealth of

shareholders in the context of the Indian information technology sector. The study reveals a negative relationship between dividend yields and the market value of the stocks.

Eriotis (2005) examined the impact of distributed earnings and the size of the firm on the dividend policy of Greek firms. Both distributed earnings and size jointly explained a 95.4% variation in dividends paid by Greek firms. Using ordinary least square methods Amidu and Abor (2006) they found a positive association between dividend payout ratio and profitability, cash flow, and tax. Whereas, growth in sales and market-to-book value ratio were negatively associated with dividend payout ratio. Osobov and Denis (2007) conducted an internal study across countries to identify the key determinants of dividend policy. They find firm size, profitability, growth opportunities, and earned equity mix as significant determinants of dividend policy. It thus suggests that large firms with high profits growth opportunities are more likely to pay dividends.

Al Malkawi (2007) found size, age, and profitability as important determinants of dividend policy in Jordan. Li and Zhao (2008) found a negative relationship between information asymmetry and dividend policy. Apart from this, they also found that the larger the firm size and the higher the asset growth, the greater will be the possibility of dividend payout. On the contrary, the market-to-book ratio was negatively associated with the propensity to pay dividends. Kumar and Jha (2012) empirically analyzed the determinants of dividend policy in the case of information technology companies in India. The study finds that net profit after tax, cash flow, and depreciation expenses significantly affect dividend payout. Mehta (2012) conducted empirical analyses of determinants of dividend policy in the context of UAE companies. Using correlation and regression analysis, he finds profitability and size as the most important determinants of dividend policy of UAE firms. Nnadi, et al, (2013) find a positive relationship between profitability, age of the firm, and dividend payout. On the contrary, financial leverage shows a negative impact on the dividend policy of the firm. The study finds Information asymmetry as insignificant in determining dividend policy.

Vaidean and Moza (2015) analyzed the determinants of dividend policy using panel data analysis in the context of listed Romanian companies. The study reveals that earnings per share, return on assets, return on equity, and size are positively related to the dividend yield. On the other hand, quick ratio and price-earnings ratio demonstrate a negative association with dividend yield. Kumar and Sujit (2018) analyzed the determinants of dividend policy in the Indian context covering 15 industry sectors for the period 2015-16. The study finds that higher levered firms tend to pay lower dividends. It suggests a positive

relationship between firm size and dividend payments, between liquidity and dividend, and between profitability and dividends. Rój (2019) examined the determinants of dividend policy of the non-financial firms of Poland. The study suggests a positive relationship between firm size, profitability, and dividend policy and the negative relationship between leverage and dividend payments. Lestari (2019) attempted to identify the factors influencing dividend payout in the context of listed manufacturing companies in Indonesia. Using multiple regression analysis, the study finds that firm size, profitability, and leverage have a negative effect on dividend policy.

Objective

The main objective of the study is to identify the most important determinants of dividend policy in the context of Indian companies.

Research Methodology

Sample size

A sample comprises 89 companies included in the NIFTY 100 index. Only those companies were included in the sample for which the financial data were available for the study period. The study covered 10 years from 2010 through 2019.

Variables of the study

Dependent variable

Dividend pay out ratio was measured as equity dividends paid divided by profit after tax.

Independent Variables

Profitability: Following Mehta (2012) and Vaidean and Moza (2015), Return on Networth, Return on Total Assets, and Earnings per share were used as profitability measures.

Liquidity: For a firm to pay dividends, liquidity is an essential condition. We used the current ratio to measure the liquidity of the sample companies as suggested by Mehta (2012), Vaidean and Moza (2015), and Roj (2019).

Leverage: The debt-equity ratio was used as a measure of leverage in the study.

Size: The size was measured in terms of total assets held by the sample companies at the end of the financial year.

Risk: Beta and price-earnings ratios were considered as measures of risk.

Past dividends: The dividend in period t is influenced by the dividend paid out in period t-1. Considering this, we lagged dividend payout ratio by one year to derive the lagged dividend payout ratio.

Results and Discussion

To examine the relationship between the dependent variable and independent variables, it is essential to ensure the normality of the data. Following the two-step method suggested by Templeton (2011), all variables were tested for normality. Table 1 presents the results of the normality test. As can be seen, except for the debt-equity ratio (NRDER) all other variables were found to be normally distributed ($p>0.05$). Hence, we drop the debt-equity ratio as one of the explanatory variables in our analysis.

Table 1: Tests of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
NRONW	.023	825	.200*	.994	825	.001
NRROA	.021	825	.200*	.994	825	.002
NRCR	.012	825	.200*	1.000	825	1.000
NRDER	.137	825	.000	.944	825	.000
NRTA	.009	825	.200*	.999	825	.983
NRBETA	.014	825	.200*	.999	825	.995
NREPS	.023	825	.200*	.991	825	.000
NRPER	.007	825	.200*	.999	825	.999
NRDPR	.018	825	.200*	.996	825	.037
NRDPRLAG	.019	825	.200*	.996	825	.056

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

NRONW = normalized return on net worth

NRROA = normalized return on total assets

NRCR = normalized current ratio

NRDER = normalized debt-equity ratio

NRTA = normalized total assets

NRBETA = normalized beta

NREPS = normalized earnings per share

NRPER = normalized price-earnings ratio

NRDPR = normalized dividend payout ratio

NRDPRLAG –normalized lagged dividend payout ratio

Regression Model

We applied the following panel data model to analyze the relationship between dependent and independent variables.

$NRDPR_{it} = \alpha + \beta_1 NRONW_{it} + \beta_2 NRROA_{it} + \beta_3 NRCR_{it} + \beta_4 NRTA_{it} + \beta_5 NRBETA_{it} + \beta_6 NREPS_{it} + \beta_7 NRPER_{it} + \beta_7 NRDPRLG_{it} + \varepsilon it$

In the above equation, subscript i indicate the name of the company, and t indicates a year. ε_{it} Indicates error term associated with i^{th} observations and in period t.

Table 2: Results of pooled OLS regression

Dependent variable: NRDPR				
Variable	Coefficient	Robust Std. Error	t-ratio	p-value
const	21.187	10.404	2.037	0.042 **
NRONW	-0.273	0.189	-1.441	0.150
NRROA	1.595	0.513	3.111	0.002***
NRCR	-1.368	1.035	-1.321	0.187
NRTA	0.000	0.000	1.849	0.065
NRBETA	-11.585	8.181	-1.416	0.157
NREPS	-0.101	0.032	-3.156	0.002***
NRPER	0.044	0.025	1.794	0.073
NRDPRLG	0.573	0.056	10.151	0.000***
R-squared		0.407		
Adjusted R-squared		0.401		
S.E. of regression		53.221		
F(8, 736)		63.135		
P-value(F)		0.000		
Durbin-Watson		2.017		

**p<0.05, *** p<0.01

Table 2 depicts the results of pooled OLS regression with robust standard errors. The regression model was statistically significant (F = 63.135, p<0.05). The model predicts that a 40.7% variation in the dividend payout ratio is jointly explained by a set of independent variables (R squared = 0.407, p<0.05). The results of the t-test indicate the significance of individual independent variables in explaining

variation in the dividend payout ratio.

One unit change in return on asset is expected to increase the dividend payout ratio by 1.595 units (Coefficient = 1.595, t = 3.111, p<0.01). One unit increase in earnings per share is expected to decrease dividend payout ratio by -0.101 units. (Coefficient = -0.101, t = -3.126, p<0.01). One unit change in dividend payout ratio in period t-1 is expected to increase the dividend payout ratio in period t by 0.573 units (Coefficient = 0.573, t = 10.151, p<0.01).

To compare the appropriateness of panel data models following tests were conducted. Table 3 represents the results of these tests.

Table 3: Comparative tests of pooled OLS versus Fixed effect model, pooled OLS versus random effect model, Random effect model versus fixed effect model

Pooled OLS versus fixed effect model	Pooled OLS versus random effect model	Fixed effect model versus the random effect model
F test:F(88, 648) = 3.93437 with p-value 3.76174e-024 Decision: Fixed effect model is preferable to the pooled OLS model.	Breusch-Pagan test: LM = 5.70406 with p-value = prob(chi-square(1) > 5.70406) = 0.0169257Decision: Random effect model is preferable to the pooled OLS model.	Hausman test:H = 339.162 with p-value = prob(chi-square(8) > 339.162) = 1.86006e-068Decision: Fixed effect model is preferable to the random effect model.

As can be seen from Table 3, the fixed-effect model is more preferable in this study.

Table 4: Results of the fixed effect model

	Dependent variable: NRDPR			
Variable	Coefficient	Robust Std. Error	t-ratio	p-value
const	76.846	17.120	4.489	0.000***
NRONW	-0.528	0.451	-1.171	0.242
NRROA	-0.039	1.437	-0.027	0.979
NRCR	-6.227	2.541	-2.451	0.015**
NRTA	0.000	0.000	-1.233	0.218
NRBETA	-9.600	16.713	-0.574	0.566
NREPS	-0.106	0.082	-1.297	0.195
NRPER	0.127	0.051	2.477	0.014**
NRDPRLG	0.096	0.068	1.407	0.160
R-squared		0.613		

Contd...

Adjusted R-squared	0.556
F(96, 648)	10.714
P-value(F)	0.000
S.E. of regression	45.791
Durbin-Watson	1.740

**p<0.05, *** p<0.01 ,

Table 4 presents the results of the fixed-effect model. The results suggest that the model is statistically significant (F = 10.714, p<0.05). The model predicts that approximately 61.3% variation in the dividend payout ratio is explained by independent variables. The results of the t-test are summarised below:

For one unit increase in current ratio, dividend payout ratio is expected to decrease by 6.227 units (coefficient = -6.227, t = --2.451, p<0.05). For one unit increase in price-earnings ratio, dividend payout ratio is expected to increase by 0.127 units (coefficient = 0.127, t = 2.477, p<0.05).

The results of the Durbin-Watson test indicate that the model does not suffer from the problem of autocorrelation (D-W = 1.740).

Conclusion

The study attempts to identify the key determinants of dividend policy of Indian companies. The results of pooled OLS regression indicate that profitability (return on total assets and earnings per share) are positively related to the dividend payout ratio. These results are consistent with the findings of Amidu and Abor (2006); Osobov and Denis (2007); Al Malkawi (2007); Al-Kuwari (2009); Mehta (2012); Vaidean and Moza (2015); Kumar and Sujit (2018); and Rój (2019). The results of the study contradict the findings of Lestari (2019).

The results indicate that size is not a significant determinant of the dividend payout ratio. It is inconsistent with the results of Eriotis (2005); Osobov and Denis (2007); Al Malkawi (2007); Li and Zhao (2008); Al-Kuwari (2009); Mehta (2012); Vaidean and Moza (2015); and Rój (2019). Further, the results also suggest that there is no relationship between liquidity and the dividend payout ratio. This is inconsistent with the results of Vaidean and Moza (2015) Kumar and Sujit (2018).

The results of the fixed effect model suggest that profitability and size do not affect the dividend payout ratio. This is inconsistent with the findings of Amidu and Abor (2006); Osobov and Denis (2007); Al Malkawi (2007); Al-Kuwari (2009); Mehta (2012); Vaidean and Moza (2015); Kumar and Sujit (2018); and Rój (2019). This contradicts the findings of Lestari (2019). These results reveal that beta does

not have any association with the dividend payout ratio. It contradicts the results of Rozeff (1982) and D'Souza & Saxena (1999). These results find that liquidity is negatively related to dividend payout ratio which is consistent with Vaidean and Moza (2015) and inconsistent with Kumar and Sujit (2018). It also finds that the price-earnings ratio is positively related to the dividend payout ratio. This is again in contrast to the findings of Vaidean and Moza (2015) that demonstrated a negative relationship between price-earnings ratio and dividend.

Managerial Implications

Given a negative relationship between liquidity and dividend payout ratio, managers will prefer to maintain a moderate current ratio, allowing them to invest relatively less amount in current assets without worrying about its impact on dividend payout. Managers may not factor in systematic risk while determining payout policy as beta does not seem to have any relationship with the dividend payout ratio.

Scope for Further Study

The study considered select factors while analyzing their impact on dividend payout. There are other factors too, that have bearing on dividend payout ratio. Future studies should analyze the impact of other factors viz. cash flow, tax, growth in sales, institutional holdings on dividend payout ratio.

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Corporate Social Responsibility and Financial Performance: Validation from Listed Indian Companies

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Abstract: The paper analyses the relationship between corporate social responsibility and financial performance. The sample consists of 63 Indian companies listed on NSE 100 ESG Index for the period 2017-18 and 2018-19. The ESG (Environmental, Social, Governance) scores is used as a measure of corporate social responsibility performance of a firm. The financial performance is evaluated by using both accounting-based measures (return on assets and return on capital employed) as well as market-based measure (Tobin Q). Since size, as well as the age of a firm can confound the relationship between CSR and financial performance, the study incorporates them as control variables. A cross-sectional data model was developed and linear regression analysis was used to test the influence of corporate social responsibility on financial performance. There is a significant positive relationship between corporate social responsibility performance of a firm and its financial performance both in terms of firm profitability as well as market value. Also, it was found that the size of the company is positively and significantly correlated with CSR and all three measures of financial profitability, but, surprisingly no significant association was found between age and other variables.

Keywords: Corporate Social Responsibility, Financial performance, NSE 100 ESG Index, ESG scores, Cross-sectional data model.

Introduction

The idea that the corporations are also a part of a larger ecosystem and hence are as much accountable and responsible for the sustainable development of an economy has been increasingly accepted in the past few decades. It is widely recognized that since companies depend on society for the supply of numerous resources that are critical for their survival and growth, they are duty-bound to perform those activities that are beneficial to it. Further, these corporations also impact the environment and must, therefore, adopt environment mitigation and

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restoration activities and processes. The clamour for 'good corporate citizenship' has grown in the wake of increasing social problems ranging from poverty, inequality, corruption, unemployment and underemployment and environmental issues from carbon emissions, depletion in ozone layer, loss of natural habitats, loss of biodiversity, climate change, deforestation and land degradation, water, air pollution etc. Numerous corporate scams and scandals ranging from BCCI, Enron, WorldCom, Vivendi, Satyam and finally global financial crisis provided fuel to already burning fire. Now, the performance of a company is judged not only in terms of its financial performance as exhibited by return on capital employed, return on equity, return on assets, etc but also non-financial performance as measured by social and environmental metrics.

Corporate social responsibility (hereafter CSR) generally refers to the strategies implemented by corporations to conduct their business in a way that is ethical, society friendly and beneficial to community in terms of development (Ismail, 2009). It encapsulates a firm's commitment to protect and improve social welfare by generating sustainable benefits for stakeholders (Lin et al., 2009). India is one of the few countries in the world who first took the lead to legislate CSR expenditure on the part of companies. Section 135 of Companies Act, 2013 requires eligible companies to spend at least 2 percent of the preceding three-year average net profits on CSR activities. These activities are specified in Schedule VII of the Companies Act and includes activities aimed at eradicating hunger, promoting healthcare, education, gender equality, environmental sustainability, protection of national heritage, slum area development efforts etc. In case it fails to spend the stipulated sum, the reasons for it must be disclosed in its annual report. However, it is argued that corporates embrace responsibility not just to comply with regulations or to placate different pressure groups but also because of several benefits which accrue to them in the long term. The aligning of CSR as a core corporate strategy improves reputation, acceptability, brand image and infuses competitive advantage. It lends legitimacy and promotes a sense of pride, self-worth, solidarity and motivation among its employees. A socially responsible firm is able to avail cheaper credit from financiers and attract investors as ESG investing has become a reality. It involves identification and investment in socially responsible, environmentally conscious firms with robust governance practices in place under the premise that these firms create long term value. In this sense CSR presents itself not just as an obligation to firms but also as an opportunity.

To provide legitimacy to CSR on sound economic grounds, several studies have been conducted in the past to explore the relationship between CSR and financial performance of a firm under different settings. However, most of these studies have been focussed on developed countries (Marti et al., 2015). In an emerging country like India where resources are already scare and CSR in oft cases require heavy capital investment, corporations can be further encouraged to practice

CSR if adequate studies are conducted on CSR's linkage to financial performance. This paper attempts to examine this relationship and to achieve this the remaining paper is structured as follows: The next section reviews the available literature on CSR and corporate financial performance. On this basis, it develops the hypothesis. Section 3 highlights the objective of the study. Section 4 provides the research methodology. Results and discussion are attempted in Section 5 followed by Section 6 which concludes and provides implications of the study. Finally, section 7 highlights the scope for future research.

Review of Literature and Hypothesis Development

CSR has evolved as an important management concept and has sparked an intense debate on its utility or futility in terms of its impact on financial performance on a firm. However, empirical evidence has been inconclusive and still emerging. Although majority of the studies have propounded that CSR provides a competitive edge and improves the reputational capital of a firm leading to better profit margins in the long term (Lakar and Maji 2017; Andersen and Dejoy 2011; Waddock and Graves 1997), few have found a negative correlation between CSR and profitability (Henderson, 2011; Reich, 2008) and have, therefore questioned CSR while still others have found no association or mixed association (Waddock and Graves, 1997) and have concluded that since CSR has no impact on long-tern firm value, it can best be practiced as corporate philanthropy. In this section, we review the existing literature on CSR and its relationship with financial performance of an organisation.

Positive relationship between CSR and financial performance

CSR favourably influences firm performance is embedded in the popular quote by Benjamin Franklin 'doing well by doing good.' The supporters of the 'social contract theory' of CSR argue that corporations use resources of society and hence are bound by the 'social contract' wherein they must through their operations create benefits for society. This formed the base of a more common theory called 'stakeholder theory' which propounded that a corporation must satisfy the interests of all stakeholders and not just stockholders. It views the firm as a 'relationship managing entity' since it is supposed to manage relationships with varied interest groups called stakeholders. Stakeholders include 'all groups and entities that affect or are affected by an organisation's actions and decisions.' (Freeman, 1984). It further segregates stakeholders into two groups- primary stakeholders who have a direct and more pronounced relationship with a corporation like employees, customers, suppliers, financiers and secondary stakeholders whose involvement with a business is peripheral like environmentalists, media, NGOs and critics.

Cornell and Shapiro (1987) theorized that an organisation can improve its financial performance by satisfying the interests of its varied stakeholders. A positive relationship with primary stakeholders results in reducing the bargaining costs, remove operational bottlenecks and result in profitable business results. It reduces the commercial risk and improves corporate image all of which translate into positive financial performance. Luo and Battacharya (2006) argue that CSR influences a firm performance through customer satisfaction. Pronounced social actions of firms have a causative result in terms of consumer behaviour which affords a competitive advantage to a firm. Du et al (2007) assert that cause-related marketing by a firm leads to product differential and better brand positioning. 'Consumer inference making' proposition suggests that consumers prefer to purchase those products and brands, who, other variables being constant, have positioned themselves as socially responsible and environment friendly. This further supports the argument in favour of CSR being an important contributor to sales growth and profitability. In a similar study Miller and Sturdivant (1977) highlighted that consumers penalise socially indifferent and irresponsible business concerns through campaigns, boycotting the products and litigations leading to business losses and bankruptcy.

The positive relationship between CSR and firm performance from the point of employee satisfaction is explored by Berman et al (1999). All those activities that are aimed at improving relationship with employees directly attribute to operational efficiency and long-term profitability. Employees feel pride and achievement when they are associated with socially reputed firms leading to satisfaction of higher-level needs. They evaluate their self-worth based on the social standing of their firms. If employee welfare dimension of CSR is taken care of it result in low turnover, improved bargaining power with labour unions and high productivity. These findings are consistent with 'social identity theory' which proposes a positive interaction between membership in bodies and perceived social identity and prestige through cognitive processes (Ashforth and Mael 1989). Waddock and Graves (1997) analysed the financial performance using three parameters namely, return on assets, return on equity and return on capital employed and concluded that good financial performance is the result as well as the contributor towards 'corporate social performance.' Profitable firms have the necessary resources to carry out activities under various dimensions of CSR which contribute to its positive social image as compared to firms with fewer financial resources. This further strengthens its profitability position and value in the long term. Thus, CSR and financial performance, in this sense, share a reciprocal rather than a cause-effect relationship. The proposition that CSR helps in building customer patronage, attract and retain quality workforce who value self-actualisation needs over financial incentives alone, avoid costly class action suits, reduces volatility and diversifiable risk thereby improving a company's

bottom line are further corroborated by findings of Govindarajan and Amilan (2013); Boutin-Dufresne and Savaria (2004); Laskar and Maji (2017); Andersen and Dejoy (2011); Hart and Ahuja (1996).

Negative relationship between CSR and financial performance

Contrary to this, few studies have put forward arguments that highlight negative association between CSR and financial performance. The arguments are based on 'trade-off theory' which postulates that investment of scarce resources by an enterprise on environment protection measures like restoring ecosystems, reducing carbon footprints, construction of recycling plants and social welfare measures like provision of education, food, etc put unnecessary pressure on the bottom lines. This result in additional costs which unjustifiably places the company in a disadvantageous position in comparison to companies who do not pursue CSR or pursue it on an adhoc basis (Aupperle et al. 1985).

Friedman (1970) emphatically argues that the sole responsibility of a company is profit maximisation. To achieve this the corporate resources should be allocated to those activities which enhance profitability. CSR leads to cost escalations which far outweighs any perceived benefits. This hinders the process of efficient allocation of resources and ultimately profitability.

Henderson (2001) found over emphasis on CSR by managers misleads them the goal of profit maximisation. The managers, when loaded with wide ranging goals lose focus of the main goal, that is financial performance, resulting in impaired performance. They become more focussed on satisfying stakeholders' interests. It vehemently criticises the stakeholders' theory and asserts that it has made almost everyone a stakeholder. Satisfaction of desires of all stakeholders is not humanly possible as they may have differing demands in response to a situation. For example, while owners of a business may want to sell a loss-making unit, employees may resist it. In such situations it becomes difficult to priortise as both are important stakeholders. Brammer and Millington (2008) found empirically that pursuance of social projects by corporations' result in excessive role diversification of managers and a manger with multiple goals is a manager with no goal. Further, 'doing social good' is a responsibility of Government and they have adequate resources and statecraft rather than managers who are management experts. Any opposite endeavour is bound to be disastrous for the future prospects of a company. Negative relationship between the two constructs have been empirically brought about by similar other studies some even suggesting that CSR is an expenditure undertaken by enterprises to fool public that much is being done by private sector for social good than is infact the case.

Neutral or mixed relationship between CSR and financial performance

Few empirical studies have found no or insignificant association between CSR and profitability. McWilliams and Siegel (2001) propose a 'demand and supply of social welfare' theory which states that society's demand from firms for welfare activities depend on market conditions as evidenced by societal progress whereas supply of these services on the cost of provision and firm experience. As the society progresses and market matures, an equilibrium is reached which neutralises the benefits of CSR with the costs. Neutral relationship between the two constructs is also consistent with the findings of Mahoney and Roberts 2007; Nelling and Webb 2009; Griffin and Mahon 1997 and others.

Some studies have proposed a mixed relationship between the various dimensions of CSR (economic, ethical, legal) and financial performance suggesting that there are so many complex variables at play that it is difficult to have a blanket conclusion as to whether or not CSR impacts profitability. Peloza and Papania (2008) found that different dimensions of CSR impact profitability differently depending on industry type. Service industry was found to reap the benefits of CSR more in comparison to manufacturing. Still others (Brik et al., 2011; Barone et al., 2007; Bhattacharya and Sen, 2004; Maignan et al., 1999) argue that firm size (measured by total assets and sales volume) and age have significant influence on CSR. Stakeholders expect larger and more experienced firms to practice CSR as compared to smaller ones. Thus, firm size and age are important control variables that impact CSR resulting in high business performance. Thus, from the discussion, it can be concluded that the extant literature is rich as far as exploration of the relationship between CSR and financial performance is concerned. Some studies have found positive, some negative, some neutral, some even mixed relationship between CSR and variables of performance. Further, some studies have propounded that CSR is both a forecaster as well as consequence of a firm's financial performance (Waddock and Graves,1997). On this basis, following hypotheses have been framed:

H_1: There is a significant positive relationship between the CSR performance of a firm and its future financial performance in terms of profitability and value.

Objective

The objective of the paper is to examine whether CSR influences the performance of a company in terms of its profitability.

Research Methodology

Sample and Data Source

The study examines the annual CSR and performance data of 63 Indian companies listed on NSE 100 ESG Index for the period 2017-18 and 2018-19 (see Appendix). The constituents of NSE 100 ESG index are derived from its parent NSE 100 Index. In order to qualify, the companies should have ESG (Environmental, Social and Governance) scores. These scores are published by NSE Indices Limited, in association with Sustainalytics. For arriving at an ESG Score, on each E, S, G dimension, a company is rated on the basis of three parameters: preparedness, disclosure and performance. 'Preparedness' parameter analyse the company's goals, targets and structures in place to achieve each E, S, G dimension. 'Disclosure' parameter measures the adequacy and transparency of its business reports and other communication, while 'performance' parameter investigates the controversies into which a company is embroiled and the effectiveness with which it has handled them. On the basis of these parameters a company is assigned an overall ESG score which ranges from 0 to 100. However, those companies having less than 40 ESG score are not included in this index. Similarly, companies involved in major controversies resulting in reputational risks and potential harm to investors are also excluded. Companies involved in the business of alcohol, tobacco and weapons are also not included. The index is reconstituted twice a year and the stocks who do not meet the above eligibility criteria are excluded (Source: NIFTY 100 ESG Indices Methodology Document, September, 2019). The study uses these ESG Scores as a barometer of a company's CSR involvement as the stock market indices ratings incorporate both quantitative as well as qualitative approaches to measure CSR and are thus most comprehensive.

Variables Description

Dependent variables

Financial performance of a company can be evaluated by using either accounting-based or market-based measures or both. The most commonly used accounting-based performance measures are return on assets, return on equity and return on capital employed whereas Tobin's Q, PE ratio are common market-based measures of performance evaluation. There is little consensus in literature as to which is a better barometer of financial performance. While accounting based measures are generally seen as backward looking and reflective of historical performance, (Inoue et al. 2011), market-based measures are considered forward looking and indicative of future or long-term performance (Lee et al. 2009). The study uses both accounting as well as market-based measures and in this way, it is more comprehensive. Return on assets (ROA) and return on capital employed (ROCE) are chosen as accounting-based measures of profitability as they are

considered to be one of the broadest measures of a firm's operating performance (Russo et al.,1997). Tobin's Q is considered to evaluate performance from market perspective which is, again, consistent with earlier studies. Book value of total assets is used as a proxy for replacement cost of assets (Chung and Pruitt, 1994). Prowess database was used to extract data about net profits, book value of assets, net worth etc.

Control Variables

The relationship between CSR and financial performance can be confounded by a number of variables, the most common ones being firm size and age. Larger firms have more resources available to practice and disclose CSR information. Moreover, scholars have evidenced that stakeholders expect more social contribution from large firms as compared to smaller firms. This results in competitive advantage and high financial performance. Hence firm size, measured as the natural log of total assets (Wahba and Elsayed 2015), is used as a control variable in the study. Similarly, firm age is an important control variable as a firm's life cycle influences CSR and efficiency. The older firms have more experience and are mature enough to take up social initiatives. Firm age is calculated as a difference between year of analysis and year of incorporation. The data regarding firm age and size was obtained from Prowess database. Table 1 summarises the measurement of each variable used in study.

Table 1: Variables description

Dependent Variables	Explanation
Return on Asset	Net Profit/Average Total Assets
Tobin's Q	(Total assets + Market Capitalization – Networth)/Total Assets
Return on Capital Employed	(Net profit/Capital employed)*100
Independent Variables	Explanation
Corporate Social Responsibility	Environmental, social and governance performance score collected from the NSE 100 ESG Index database
Control Variables	Explanation
Age	Difference between year of analysis and year of incorporation
Size	Log of total assets (firm size)

This study adds to the extant literature in two ways. First, there may be time lag between social initiatives taken up by a firm and its impact on financial performance. This study assumes a time lag of one year which is consistent with overarching hypothesis of earlier studies (Blackburn et al, 1994). Second, the study incorporates both accounting (ROA and ROCE) as well as market-based

measure (Tobin's Q) to analyse the impact of CSR on performance and hence in this sense is more comprehensive and eliminate the inconsistencies of earlier studies which used mostly accounting based measures.

Empirical Tests and Model Specification

The key techniques and tests used for analysing the data are as follows:

Variance Inflation Factor (VIF) is used to measure the multicollinearity among the predictor variables of a regression model. The minimum VIF value is one. If the VIF value is greater than 10, it indicates serious problems of multicollinearity in the regression model. The variance inflation factor was calculated for each predictor variable. The VIF for CSR, size and age was 1.038, 1.006 and 1.044. Each value is well within the acceptable range indicating the absence of any problems due to multicollinearity.

Linear Regression is used to predict the value of a response/dependent variable using one or more than one explanatory/independent variables. This study has used simple linear regression to predict the value of one dependent variable using one independent variable and two control variables. Following the theoretical structure as defined, the models are as follows:

$$ROA_{it} = \beta_0 + \beta_1 CSR_{it-1} + \beta_2 SIZE_{it-1} + \beta_3 AGE_{it-1} + \varepsilon \quad \ldots(1)$$

$$ROCE_{it} = \beta_0 + \beta_1 CSR_{it-1} + \beta_2 SIZE_{it-1} + \beta_3 AGE_{it-1} + \varepsilon \quad ...(2)$$

$$TQ_{it} = \beta_0 + \beta_1 CSR_{it-1} + \beta_2 SIZE_{it-1} + \beta_3 AGE_{it-1} + \varepsilon \quad ...(3)$$

where ROA_{it} denotes the dependent variable-return on assets for company i in period t; $ROCE_{it}$ is the dependent variable-return on capital employed for firm i in period t; TQ_{it} is the dependent variable-Tobin's Q for firm i in period t; CSR_{it-1} is the independent variable for company i in period t-1 and $SIZE_{it-1}$ and AGE_{it-1} are the control variables size and age for company i in period t-1. $\hat{a}_0$, $\hat{a}_1$, $\hat{a}_2$, $\hat{a}_3$ are the parameters or the coefficients of the explanatory variables.

Results and Discussion

Reliability Test

The Cronbach Alpha coefficient is used to determine the internal consistency or reliability of a group of scale or test items (Cronbach, 1951). The higher the Cronbach Alpha number, the better the data's internal consistency. On analysing the data, Cronbach's Alpha was found to be 0.722 which exceeds the recommended level of 0.70.

Descriptive Statistics

Table 2 illustrates the descriptive statistics of the variables- independent, dependent and control. These findings show the central tendency and the dispersion of the indicators. The calculated mean of the independent variable, CSR is 59.16. The mean for financial performance as measured through ROA, ROCE and Tobin's Q are 0.042, 12.564 and 3.423 respectively. The average age of the companies is approximately 48 years and 13.067 is the mean size.

Table 2: Descriptive statistics of the variables

	N	Min.	Max.	Mean	Std. Dev
Independent Variable					
CSR	63	45	93	59.16	10.198
Dependent Variables					
Return On Capital Employed	63	-24.560	76.040	12.564	16.267
Return On Assets	63	-0.039	0.247	0.042	0.047
Tobin's Q	63	0.952	16.987	3.423	3.477
Control Variables					
Age	63	12	123	47.75	26.546
Size	63	10.519	17.113	13.067	1.612

Correlation Results

Correlation is a measure of linear association that is used to determine the degree of association between two variables. It is scaled from -1 to +1, with -1 denoting perfect negative correlation and +1 denoting perfect positive correlation. Positive correlation means that when the value of one variable rises, the value of the other variable rises as well, whereas negative correlation means that when the value of one variable rises, the value of the other variable falls.

Table 3 represents the Pearson correlation matrix for the dependent, independent and control variables. As per the analysis, it was found that CSR is significantly correlated with ROA, ROCE and Tobin's Q at 5% level of significance.

Table 3: Pearson correlation matrix

	ROA	Tobin's Q	ROCE	CSR	Age	Size
ROA	1					
Tobin's Q	0.757**	1				
ROCE	0.910**	0.819**	1			
CSR	0.341*	0.121*	0.246*	1		
Age	-0.004	0.069	0.013	0.192	1	
Size	0.179**	0.190**	0.240**	0.257*	-0.074	1

*Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Regression Results

In order to predict the relationship between a dependent and an independent variable, regression analysis is used. It is of two types: Simple Linear Regression (only one independent variable) and Multiple Linear Regression (more than one independent variable). The predictive link between CSR and the dependent variables was found using regression analysis in this study.

To test the hypothesis of CSR-future profitability link, three regression models are estimated using both accounting and market-based measures of future profitability. ROA, ROCE and Tobin's Q were regressed on CSR and the control variables (size and age of the companies) in the first, second and third regression respectively.

Model 1 has been used to investigate the relationship between ROA and the predictor variables. The results suggest that the predictor variables explain 53.3% variation in Return on Assets (R^2=0.533) and the model appears highly significant (F=11.060, p<0.001). The regression results as shown in Table 4 show that the coefficients of CSR, size are statistically significant from zero at the 0.05 level since their p-value is less than 0.05 i.e., CSR and size affect the dependent variable. The regression equation for the dependent variable, ROA is

$$ROA_{it}=0.287+(0.402)\ CSR_{it-1}+(0.116)\ Size_{it-1}$$

Model 2 has been used to investigate the relationship between ROCE and the predictor variables. The results suggest that the predictor variables explain 61.6% variation in Return on Capital Employed (R^2=0.616) and the model appears highly significant (F=11.292, p<0.001). The regression results as shown in Table 5 show that the coefficients of CSR, size are statistically significant from zero at the 0.05 level since their p-value is less than 0.05 i.e., CSR and size affect the dependent variable. The regression equation for the dependent variable, ROCE is

$$ROCE_{it}=63.797+(0.276)\ CSR_{it-1}+(1.568)\ Size_{it-1}$$

Model 3 has been used to investigate the relationship between Tobin's Q and the predictor variables. The results suggest that the predictor variables explain 63.2% variation in Tobin's Q (R^2=0.632) and the model appears highly significant (F=13.057, p<0.001). The regression results as shown in Table 6 show that the coefficients of CSR, size are statistically significant from zero at the 0.05 level since their p-value is less than 0.05 i.e., CSR, size affect the dependent variable. The regression equation for the dependent variable, Tobin's Q is

$$TQ_{it}= 18.654 + (0.038)\ CSR_{it-1}+(1.337)\ Size_{it-1}$$

Table 4: Regression analysis of ROA and CSR with control variables as size and age

	Coefficient	Std. Error	p-value
Intercept	.287	.050	<.001
CSR	.402	.000	.012
Size	.116	.003	<.001
Age	.000	.000	.358

Table 5: Regression analysis of ROCE and CSR with control variables as size and age

	Coefficient	Std. Error	p-value
Intercept	63.797	17.180	<.001
CSR	.276	.169	.020
Size	1.568	0.050	<.001
Age	–.047	.065	.475

Table 6: Regression analysis of Tobin's Q and CSR with control variables as size and age

	Coefficient	Std. Error	p-value
Intercept	18.654	3.573	<.001
CSR	.038	.035	0.023
Size	1.337	.218	<.001
Age	.000	.014	.991

Conclusion and Implications

The fact that companies have to necessarily pursue sustainable practices in order to survive and thrive in today's world cannot be challenged. The numerous and varied stakeholders' groups reward as well as penalise companies on the basis of their CSR efforts. If these efforts translate into improved financial performance for companies, they can be further encouraged to view CSR as an opportunity rather than an obligation. This study empirically tests the relationship between CSR and financial performance in the Indian context. Many studies have been conducted in this area with inconclusive or inconsistent results because of model misspecification or data constraints (leading to debatable methods of CSR performance evaluation) or usage of only accounting-based measures to study the relationship. The present study is an improvement over the earlier ones on two counts. First, it uses ESG scores as an indicator of CSR performance which is most comprehensive as opposed to just one or few indicators viz. content analysis of disclosure reports or expenditure on employees or R & D. Second, it incorporates both accounting-based (ROA and ROCE) as well as market-based

measure (Tobin's Q) for impact analysis and hence is a more comprehensive assessment. The study considers time lag on the assumption that CSR efforts will yield returns after a time gap. Further, the study incorporates age and size of a company as control variables to mitigate their plausible impact which can confound the relationship between CSR and financial performance, consistent with earlier studies. It was found in terms of correlation with CSR that ROA is the most correlated (0.341*) measure, followed by ROCE (0.246*) and Tobin's Q (0.121*). The results of the regression study show that there is a positive significant relationship between CSR and ROA, ROCE, and Tobin's Q. Thus, overall, the study concludes that CSR has a positive influence on financial performance, both in terms of profitability as well as market-value of a firm. The study justifies CSR on sound economic grounds.

It is worthwhile to point out here that although it was found that the size of the company is positively and significantly correlated with CSR and all three measures of financial profitability which reiterates our statement that larger firms have more resources available to practice and disclose CSR information, surprisingly no significant association was found between age and other variables. This is in contradiction with many studies who found that firm age plays an important role as far as CSR activities are concerned.

The study has useful implications for businesses, investors and others. Socially responsible businesses create intangible assets in the form of customer trust and patronage; employee pride and achievement, reduced absenteeism and turnover and higher operational efficiency; lower cost of finance, all of which translate into competitive advantages and tangible enhanced financial performance over a long period of time. Thus, this study exhorts the companies to integrate CSR as their core business strategy. It has implications for investors as they prefer socially responsible companies and thus substantiates ESG based investing.

Scope for Future Research

The impact of CSR efforts may not be captured in a time frame of one year. Future studies can incorporate a longer time frame and conduct panel regression analysis to enrich extant literature. Also, the present study has incorporated age and size as control variables, whereas, the relationship between CSR and performance can be impacted by many other factors like industry, leverage etc. They can be considered for further studies.

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Appendix

List of Selected Companies

1. ABB India Ltd., 2. ACC Ltd., 3. Adani Ports & Special Economic Zone Ltd., 4. Ambuja Cements Ltd., 5. Aurobindo Pharma Ltd., 6. Axis Bank Ltd., 7. Bajaj Finance Ltd., 8. Bank Of Baroda, 9. Bharat Forge Ltd., 10. Bharat Petroleum Corpn. Ltd., 11. Bharti Airtel Ltd., 12. Britannia Industries Ltd., 13. Cadila Healthcare Ltd., 14. Cipla Ltd., 15. Coal India Ltd., 16. Colgate-Palmolive (India) Ltd., 17. Cummins India Ltd., 18. DLF Ltd., 19. Dr. Reddy's Laboratories Ltd., 20. Eicher Motors Ltd., 21. Exide Industries Ltd., 22. GAIL (India) Ltd., 23. Godrej Consumer Products Ltd., 24. HDFC Bank Ltd., 25. Hero Motocorp Ltd., 26. Hindalco Industries Ltd., 27. Hindustan Petroleum Corpn. Ltd., 28. Hindustan Unilever Ltd., 29. Housing Development Finance Corpn. Ltd., 30. ICICI Bank Ltd., 31. Indiabulls Housing Finance Ltd., 32. Indusind Bank Ltd., 33. Infosys Ltd., 34. JSW Steel Ltd., 35. Kotak Mahindra Bank Ltd., 36. LIC Housing Finance Ltd., 37. Mahindra & Mahindra Financial Services Ltd., 38. Mahindra & Mahindra Ltd., 39. Marico Ltd., 40. Motherson Sumi Systems Ltd., 41. NMDC Ltd., 42. Nestle India Ltd., 43. Power Finance Corpn. Ltd., 44. Power Grid Corpn. of India Ltd., 45. Punjab National Bank, 46. REC Ltd., 47. Reliance Industries Ltd., 48. Shriram Transport Finance Co. Ltd., 49. State Bank of India, 50. Sun Pharmaceutical Inds. Ltd., 51. Tata Chemicals Ltd., 52. Tata Consultancy Services Ltd., 53. Tata Consumer Products Ltd., 54. Tata Motors Ltd., 55. Tata Power Co. Ltd., 56. Tata Steel Ltd., 57. Tech Mahindra Ltd., 58. Titan Company Ltd., 59. Ultratech Cement Ltd., 60. Vedanta Ltd., 61. Wipro Ltd., 62. Yes Bank Ltd., 63. Zee Entertainment Enterprises Ltd.

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Consumer Perception Towards CSR in the Fast Moving Consumer Goods (FMCG) Sector

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Abstract: CSR is divided into philanthropic, ethical, and environmental CSR and the consumer perception is divided into willingness to buy, consumer loyalty, and repurchase intention. A structured and self-administered questionnaire is prepared to collect the responses. A total of 244 responses were received analyzed with the statistical package of social sciences (SPSS) version 23.0, and analysis of moment structure (AMOS) 21.0. The findings suggest that CSR positively impacts willingness to buy, consumer loyalty, and repurchase intention. Willingness to buy is impacted positively by all the categories of CSR. It can be observed that consumer loyalty is not positively related to environmental CSR. Ethical, and environmental CSR do not impact the repurchase intention in a positive way.

Keywords: CSR, willingness to buy, consumer loyalty, repurchase intention, FMCG sector

Introduction

CSR has evolved from the role of the government to the inclusion and the contribution of the private sector. A shift was there from the financial welfare to the social welfare in the context of CSR. Over the past two decades, CSR has increasingly caught attention to address various societal problems. The declining role of the government put pressure on various non-profit organizations (NPOs), non-governmental organizations (NGOs) and the private sector in general. However, the goal of the business sector in development of the economy has evolved over a period of time (Berger et at., 2004). CSR became crucial because of various accounting scandals that have happened in the 1990s and also in the recent past. Globalization being the integration of the domestic economy with the world economy increased the calls for the contribution towards social welfare by various private organizations where the companies could use specific resources to eradicate or at least improve the conditions of the society when it comes to

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underprivileged sections of the society (Hillman & Keim, 2001). As per Holme and Watts (2000), CSR as a concept can simply be defined as the organizations' commitment to contribute to sustainable development with the help of the contribution of employees because the CSR initiatives are expected at an organizational level which ultimately helps in improving the quality of life. Here, sustainable development is related to the better quality of life. The CSR efforts of the companies should aim to improve the quality of life of various stakeholders. The private sector in general has begun to admit that let alone the profitability aspect along with maximization of shareholder value do not state that the companies are doing well. The capability of the companies to make profits along with improved ethical and environmental concerns and initiatives also helps the organizations to excel and benefit in the long term. CSR is being implemented at a greater extent in the developed nations but there is a dire need of implementing CSR initiatives in the Indian context. CSR is not yet a management concept engulfed in the vision and mission statements in the Indian environment. It has evolved in the recent past and is developing in the current scenario. CSR is being understood in the Indian context starting from the role of government and then shifting the role towards private sector. The private sector has grown because of less state intervention that has been there and reduced control over the economic efforts. The reason why FMCG sector has been chosen out of all the sectors in the Indian economy is because the sector needs to work on optimizing the supply chains and stock-keeping units simply known as SKUs. In the recent COVID times, the companies need to invest more in the e-commerce platforms than the physical stores because of the physical distancing requirements. The strategies of the marketing departments of the particular companies should align with the consumer preferences. A digital eco-system is preferable. Companies should focus on responsible and sustainable packaging. The blind spots or the areas where the companies are lagging behind need to be identified by the companies. The relationship between consumers and the FMCG sector can be justified in the COVID times as consumers receive more benefits in the form of quality products when it comes to FMCG companies practicing CSR in the Indian context. Consumers are surely becoming more and more aware of their choices and are becoming more prosocial and responsible in their actions. The consumers have a right to have full and accurate information about the products they are consuming. The CSR activities related to product development and quality has the biggest influence on the buying behavior or the preferences of the consumers.

Review of Literature

This section is concerned with the consumer perception of CSR in general, and also in the context of the FMCG sector as it is one of the sectors of the Indian economy to which the consumers are directly linked, and their feedback is very

crucial when it comes to analysing the consumer perception towards CSR. The effect of consumer perception of CSR initiatives (environmental, ethical, and philanthropic) analyzed on various dimensions (consumer, and corporate) or factors including consumer loyalty, consumer attachment, repurchase intention, and corporate performance (Chaudhary, et al. 2016). Also, value addition is thereby taking consumer perception of CSR as one of the mediators between green image, and corporate performance. Structural equation modeling has been used to measure constructs. The sample size is 250 consumers has been taken who had some awareness about CSR. For example, "recycled" is written on the back of the products or other eco-friendly practices adopted by the company. It was measured with the help of tactics in the questionnaires by randomly asking the respondents about the company labels/practices. The key findings suggest that the company culture as well as CSR capability of the company influences consumer perception, and hence the overall performance of the respective companies. Consumers as being one of the stakeholders need to be given a fair share of importance. The companies irrespective of the origin or sector can expect a higher firm performance level once the CSR capabilities, and the culture of the firms are synchronized. This study is based in Pakistan. The study tries to evaluate the impact of CSR activities by taking into account various consumer, and corporate-related dimensions which include consumer loyalty, corporate performance, and consumer attachment.

The next case that is going to be discussed is the Deepak (2017) thesis of stakeholder perception towards CSR in the context of AMUL (FMCG sector) based in Gujarat. The common thing that remains are the methodology adopted while analyzing the consumer or stakeholder perception. The conclusion stated that AMUL is doing tremendously good when it comes to CSR. The level of CSR awareness and satisfaction among the beneficiaries is found to be satisfactory. The company in this capacity is doing everything it can but there is a need to adapt to international standards in the context of CSR. Also, active participation is required on the part of people, and active involvement from the community will ultimately help in the decision making, and assessment of needs keeping in mind the changes, and the needs as per the society as a whole. The influence of consumers' and how they perceive corporate social responsibility (CSR). The motive is to provide some information on the effect of perceived CSR by consumers on the intention of purchasing of consumers which is short term in nature, and also the reputation of the corporations which is long term in nature while considering various factors such as brand image, brand loyalty of consumers, and consumer satisfaction. The sample of the study considered the perception of 429 consumers selected based on non-probability sampling. Confirmatory factor analysis was used. The research tool used was structural equation modeling. The impact (direct as well as mediated) is significant. The

study is valuable in the sense that how perception towards CSR influences the perceived reputation as well as purchase intention of consumers. The research limitation associated is that perception can be divide into two categories (cognitive as well as effective). The same can be considered in the context of the perception of consumers towards CSR. The consumer perception towards CSR based on the actions of retailing firms. The empirical analysis in this study demonstrated that expenditure towards CSR policies increases consumer satisfaction, value, and loyalty towards the company. To achieve the same, cause, and effect relationships were used. The sample was based on 408 super and hypermarket consumers. The research tool consisted of PLS modeling. The findings suggest that CSR strategies and policies increase consumers' perceived value towards the company as well as the loyalty, satisfaction, and commitment of consumers towards the company. In the context of originality, this paper is useful in the competitive differentiation of the company by improving the relationship of consumers with the companies. The interrelationships of CSR, and consumer value are not studied to such an extent that it is enough. A real sample of consumers is required instead of artificial scenarios which are necessary for analyzing the real consumer perception of CSR (Ervera-Francés, & Piqueras 2019).

The concept of CSR has been emerging, and evolving in the recent past. It has become a great, and important practice when it is taken in the context of the FMCG sector. The main aim is to analyze the CSR domains of the FMCG companies and also consumer insights, and perceptions towards CSR of the FMCG (Indian) companies. CSR helps in uplifting the poor section of society. The study is based in south India. The main aim is to empirically evaluate the impact of CSR in the context of the FMCG sector. The other things that are considered are the factors considered by the consumers while also giving preference towards the CSR, and the gains from it, and also the awareness regarding CSR as perceived by the consumers in the sample (Ramu, & Vethirajan 2019). The impact of CSR activities with the help of the perception of consumers in the context of personal care products of FMCG companies. The perception of consumers belonging to various social and demographic profiles is also being evaluated in this study. Various factors are being considered like brand awareness and goodwill. There has been an impact of CSR on savings in cost, and better profits for the organizations. Ultimately, it led to market share increase, and better consumer satisfaction in the FMCG companies without a doubt. The other benefits could be increased productivity of the employees, greater consumer satisfaction, increased market share, community engagement, and a good public image of the companies. Other factors that get affected are the increase in costs, employee turnover as employees feel that involvement in CSR is not of much use but consumers have a completely different point of view. The conclusion states that the CSR involvement of the companies in the context of the FMCG

sector surely leads to greater consumer satisfaction (C, Vethirajan & Ramu, 2019). The study draws conclusions between CSR and the consumer perceptions for further research and the policymakers (Öberseder et al. 2013).

The constructs that have been selected based on the literature in the context of CSR are namely; philanthropic CSR, ethical CSR, environmental CSR, willingness to buy, consumer loyalty and repurchase intention, the sources of scale development for these will be discussed in the methodology section. The hypotheses will be discussed in detail as follows:

Willingness to Buy

Willingness to buy or purchase intention of the consumers is one of the key indicators when it comes to analyzing the impact of CSR on their buying behavior, and acts as a proxy behavior as to how they are going to act in the actual scenario as per Farris et al., 2010. The literature in the context of CSR proves that CSR behavior or the impact of CSR is really important when it comes to purchasing decision processes (Creyer and Ross, 1997). Therefore, the following hypothesis is proposed.

$H_{01(a)}$: Consumer perception of philanthropic CSR does not impact their willingness to buy in the context of the FMCG sector.

$H_{01(b)}$: Consumer perception of ethical CSR does not impact their willingness to buy in the context of the FMCG sector.

$H_{01(c)}$: Consumer perception of environmental CSR does not impact their willingness to buy in the context of the FMCG sector.

Consumer Loyalty

Consumer loyalty is defined as the intention, and the preference to repurchase a specific product because of a particular reason, and also recommend the same to your closed ones (Chen et al., 2008). The more satisfied the consumer is, the more loyal she/he is going to be towards the products of the particular companies. It is safe to say that consumer satisfaction leads to consumer loyalty (Flavián, 2006). The motive is to see whether CSR impacts consumer loyalty in the FMCG sector. Therefore, the following hypothesis is proposed.

$H_{02(a)}$: Consumer perception of philanthropic CSR does not impact their consumer loyalty in the FMCG sector.

$H_{02(b)}$: Consumer perception of ethical CSR does not impact their consumer loyalty in the FMCG sector.

$H_{02(c)}$: Consumer perception of environmental CSR does not impact their consumer loyalty in the FMCG sector.

Repurchase Intention

Repurchase intention is when the consumer is willing to buy a particular product more than once, and a lot of research is based upon the idea that the consumers prefer to repurchase the products only when it is offered at a lower price (Anderson, and Srinivasan, 2003). Therefore, the following hypothesis is proposed.

$H_{03(a)}$: Consumer perception of philanthropic CSR does not impact their repurchase intention in the context of the FMCG sector.

$H_{03(b)}$: Consumer perception of ethical CSR does not impact their repurchase intention in the context of the FMCG sector.

$H_{03(c)}$: Consumer perception of environmental CSR does not impact their repurchase intention in the context of the FMCG sector.

Methodology

A structured and self-administered questionnaire was floated via google forms among the target population. Here, the target population is the people who were assumed to have some knowledge of CSR, and its awareness regarding the amendments made in the context of CSR. The questionnaire was floated via google forms for a period of 2.5 months starting from March, 2021 to mid of June, 2021. 244 respondents have been taken into consideration for the primary data survey to attain the research objectives of the current study. The respondents for the primary survey have been selected based on the non-probability convenience sampling [Jiang, et al; 2013; Chaudary et al, (2016)]. The reason why convenience sampling has been chosen is because the target population was infinite as every possible person in the population uses the personal care products which are being manufactured by the FMCG sector. Another reason why this kind of sampling is chosen is because of the impact of COVID-19 which has been on the country as a whole. It was quite difficult to approach every person in the target population because of which the questionnaire was floated online via google forms to get the maximum responses possible. The respondents were assumed to be the consumers of the FMCG sector as no consumer can avoid buying goods of daily use. The age of the respondents had no bar so that diverse views could be considered, and an overall perspective regarding the consumer perception of CSR in the context of the FMCG sector could be analyzed. *244 respondents* reverted with the completed questionnaire out of which *201 responses* were left after data cleaning was done. The number was reduced to 201 as there was a filter question that was incorporated in the questionnaire. The number of respondents who were *filtered out was 35* (not being aware of CSR and mandatory requirement of contributing towards CSR as per section 135 of the Companies Act, 2013) in number. The *unengaged responses* were also removed which *were 8* in number. The analysis was done on 201 responses.

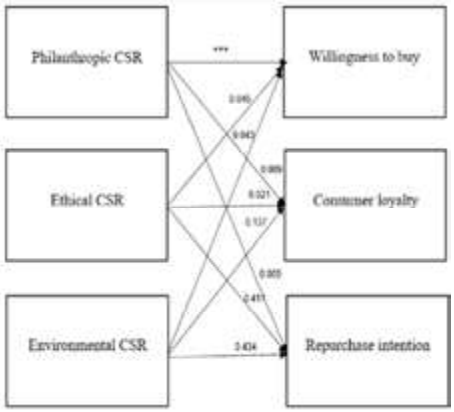

Figure 1: Hypothesized research model

The sample size is 244 respondents according to the minimum requirement of at least 200 sample size as per Shah and Goldstein, 2006. The data was collected in March-May, 2021.

Measures

The relevant research variables such as CSR and consumer perception were adopted from the existing literature which is already tested, reliable, valid and universally accepted. Modified items for philanthropic CSR were adopted from Samra Chaudary, et Al. (2017); (Lee et al., 2013b). Modified items for ethical CSR were adopted from R (Lee et al., 2013b) (Mohr et al., 1998). Modified items for environmental CSR were adopted from Sharma, S. (2016). Modified items for willingness to buy were adopted from Sharma, S. (2016). Modified items for consumer loyalty were adopted from (Valvi, and West, 2013). Modified items for repurchase intention were adopted from (Khalifa, and Liu, 2007; Zhou et al., 2009).

Analysis

The data is analyzed using SPSS (statistical package for social sciences) 23.0 is used to analyze the collected data. The reliability of the data is checked on SPSS version 23.0. Conceptual definitions or statements are checked are the basis of the assumption of the scale chosen. The reliability of the data is checked among the items of a respective construct or variable. By checking the reliability of the data stability can be assured for the results ahead. The internal consistency of the items is checked with the Cronbach's alpha which should ideally be more than 0.7 according to the literature (Taber K.S. 2018 & Hair et al., 2006). Analysis of moment structure (AMOS) version 21.0 was used to analyze the consumer

perception of CSR in the context of the FMCG sector with the help of structural equation modeling (SEM) which is a combination of measurement model (confirmatory factor analysis), and a structural model (path analysis). SEM can only be applied when a minimum number of observations is 200s, and also when a minimum of 3 statements are present in the construct. Both these conditions are being satisfied as the number of observations in the present study is 201, and a minimum of 3 statements are present in each of the six constructs. The table below shows each of the six constructs with their operational definitions.

Table 1: Variables with measurement items

Variable	Operational definition	
Philanthropic CSR (et al. (2017); Lee et al., 2013b)	P_CSR1	Has a strong sense of social responsibility.
	P_CSR2	Focuses on CSR as well along with profit generation.
	P_CSR3	Allocates some of the resources towards charitable or philanthropic activities.
	P_CSR4	Are active in community involvement.
Ethical CSR (Samraet al. 2017; R Lee et al., 2013b; Mohr et al., 1998)	ET_CSR1	Are required to disclose the useful information to all of its consumers.
	ET_CSR2	Follows the protocols laid down by the regulatory authority (Companies Act, 2013).
	ET_CSR3	Are reliable.
Environmental CSR(Samra, et Al.2017); R Lee et al., 2013b; Mohr et al., 1998)	EN_CSR1	Tries to offer environment-friendly products.
	EN_CSR2	Tries to put in efforts to maintain, and preserve the environment.
	EN_CSR3	Focuses on solid waste, and garbage management as a great concern.
	EN_CSR4	Has environment related mission, and vision.
Willingness to buy (Sharma, 2016)	WB1	You pay great attention to CSR involvement.
	WB2	You would prefer companies which are into philanthropic or charitable activities.
	WB3	You would stop buying from a company which you find socially irresponsible.
	WB4	You would pay more for socially responsible companies even if cheaper alternatives are is available from socially irresponsible companies.
	WB5	When faced with a choice between socially responsible, and irresponsible companies, you would go for the former one.
Consumer loyalty (Sharma, 2016; Valvi, and West, 2013)	CL1	You would continue purchasing from socially responsible companies even when lower price alternatives are is available in the market.

Contd...

	CL2	As long as the desired product/service is offered by your desired company, you would never think of switching to another company.
	CL3	You would never think of switching to a lower price alternative from a socially irresponsible company.
	CL4	You would never be hesitant to buy from a socially responsible company even when the prices of goods/ services are increased.
Repurchase intention(Khalifa, and Liu, 2007; Zhou et al., 2009)	RI1	You intend to repurchase goods/services from thecompanies you prefer regularly.
	RI2	You intend to recommend the goods/services from the companies, you prefer regularly to your friends, and family.
	RI3	*You intend to use the goods/services from the companies you prefer regularly in the future as well (whether offline or online mode).*

Results

Descriptive statistics

The univariate normality of the data was checked with the help of skewness and kurtosis. The recommended values of skewness lie within the range of -1, and +1. The recommended values of kurtosis lie within the range of -3, and +3. As per Podsakoff, et al., (2003) and Harman's single factor test, a single factor does account for less than 50 percent of the variances, then it can be said that there is no common method biasness which is present as the cumulative percentage is coming out to be 23.544. The descriptive statistics related to the demographic profile of the respondents' states that the females were observed to be more in number (137) as compared to the males (64) in the sample population. The maximum respondents (168) lie in the age bracket of 21-30 followed by 22 respondents in the age bracket of 31-40, and the remaining belong to the extreme age brackets of below 20, and above 50. The maximum respondents (98) belong to post-graduation and above followed by 64 belonging to the post-graduation followed by 38 from the graduation level and 1 from the diploma as per the level of qualification. The maximum respondents (97) lie in the category of above 90k, and above followed by equal respondents (37) in the category of below 50k, and the range of 50-70k followed by 30 respondents in the range of 70-90k in terms of family income per month.

Confirmatory Measurement Model

The reliability of the current study meets the standard criteria of 0.7 (Schmitt, N. 1996) as stated below in the table. While checking the reliability of the data, two

items were deleted from three constructs namely; philanthropic CSR, consumer loyalty, and repurchase intention. Validity in the context of research can be divided into two categories when it comes to primary data. The first one is convergent validity which should be above 0.5 ideally as per Hair, and Tatham, 1992, and is to be established within the construct itself. All the AVEs cross this standard benchmark of 0.5. The composite reliability (CR) should be greater than AVE for all the factors. The second kind of validity is discriminant validity which exists when the square roots of all the AVEs are greater than the correlations of the items or the statements as per Brown, 2006. Discriminant validity needs to be established to see whether the constructs that are formed are distinct from each other, and are trying to measure different things yet being related. To achieve or to arrive at good discriminant validities, there should be a moderate correlation between the variables as per Kline, 2005. Also, the AVEs of each of the factors should be greater than the maximum shared variance (MSV) for that factor.

Table 2: Reliability and validity results

Variable names	CR	AVE	Cronbach's Alpha
Philanthropic CSR	0.821	0.501	0.801
Ethical CSR	0.896	0.532	0.734
Environmental CSR	0.858	0.557	0.853
Willingness to buy	0.801	0.518	0.714
Consumer loyalty	0.899	0.535	0.701
Repurchase intention	0.806	0.507	0.719

The standard benchmark which is considered ideal for CMIN/df in the range of 1-3 (Segars and Grover, 1998). The p-value is coming out to be significant (0.000) which is because of the small sample size (Küster and Vila, 2011; Hu and Bentler, 1999). CMIN/df is coming out to be 2.123 for the default model. The goodness of fit (GFI) is coming out to be 0.905 which is acceptable as per Segars, and Grover 1993. The current measurement model has NFI value of 0.815 (Kushner et al., 1994). The current model has a CFI value of 0.915 (Küster and Vila, 2011). Some of the authors claim that ideal value of RMSEA should be less than or equal to 0.08 (Lin and Wang, 2006). The RMSEA is 0.075 as per the current study which is being satisfied as per the requirement. The above-mentioned values indicate that the measurement model is a good model fit.

Structural Model

The hypotheses are nine in number out of which six are being accepted at 99 percent confidence interval. The current structural model which is also known as path analysis depicts good model fits (CMIN/df 2.086, CFI 0.915, NFI 0.815,

GFI 0.898 and RMSEA 0.057) all for the default model. The standard benchmark which is considered ideal for CMIN/df in the range of 1-3 (Segars and Grover, 1998). The p-value is coming out to be significant (0.000) which is because of the small sample size (Küster and Vila, 2011; Hu and Bentler, 1999). The goodness of fit (GFI) is acceptable as per Segars, and Grover 1993. The current measurement model has acceptable NFI value (Kushner et al., 1994). The current model has a CFI value of 0.915 (Küster and Vila, 2011). Some of the authors claim that ideal value of RMSEA should be less than or equal to 0.08 (Lin and Wang, 2006). The above-mentioned values indicate that the structural model is a good model fit.The table below shows the summary of the testable hypotheses in the context of consumer perception of CSR in the context of the FMCG sector.

Table 3: Hypotheses summary

Hypotheses	p-value	Decision making (Support if the p- value is less than0.05)	Supported/ Not supported
H01 (a)	WB <- P_CSR	***	Supported
H01 (b)	WB <- ET_CSR	0.045*	Supported
H01 (c)	WB <- EN_CSR	0.043*	Supported
H02 (a)	CL <- P_CSR	0.009*	Supported
H02 (b)	CL <- ET_CSR	0.021*	Supported
H02 (c)	CL <- EN_CSR	0.137	Not Supported
H03 (a)	RI <- P_CSR	0.005*	Supported
H03 (b)	RI <- ET_CSR	0.417	Not Supported
H03 (c)	RI <- EN_CSR	0.434	Not Supported

***Significant at 0.001 level

*Significant at 0.05 level

Discussion

As it can be observed in the above table that CSR positively impacts willingness to buy, consumer loyalty, and repurchase intention. Willingness to buy is positively impacted by all the categories of CSR. It can be observed that consumer loyalty is not positively related to environmental CSR. Consumer loyalty is not enhanced by considering environmental factors. Ethical, and environmental CSR do not impact the repurchase intention in a positive way. The demands of the consumers being satisfied in the context of a particular sector irrespective of whether that sector is indulged in the environmental CSR initiatives. The repurchase intention which is simply a kind of purchase intention is not affected by ethical, and environmental CSR. As far as the companies that the consumers are preferring

in the context of the FMCG sector are indulged in philanthropic or charitable activities, the intention of repurchasing its products would be there. a consumer would be interested in a company's product if the company is involved in CSR, and would be willing to pay a higher price for the product when the company is indulged in CSR initiatives. The need to create a deliberate consciousness among the consumers for promoting CSR practices through the purchasing decision practices was also demonstrated in the study (Florina, G. 2010). A positive correlation is observed between CSR awareness, and consumer responses (R. Manimalar, Dr.S.Sudha 2015). Among various CSR fundamentals, and components, economic, and philanthropic aspects have a positive relationship with the repurchase intention of the consumers.The CSR fundamentals have become the legit reasons which explain the consumers repurchase intention especially for the consumer goods, FMCG sector in general, and the companies should incorporate CSR to increase the quantity and the quality of its consumer base. The positive relationship between the repurchase intention, and CSR ultimately leads to the brand as well as consumer loyalty (Thi, QuyVo & Van, Phung. 2016). The companies have incorporated CSR to be a strategic part of their company reputation as in the current scenario the companies need to focus on the charitable aspect as it leads to the survival of the companies. The study is based in China, the USA, and Japan. The findings suggested significant differences in some of the CSR factors. Ultimately, the results revealed that there is a positive impact of CSR on the repurchase intention (D. Amoroso, and F. L. Amoroso, and F. Roman 2017). there is a positive relationship between the company's CSR, and the consumers' willingness to buy. When the company puts in effort into the product itself, the effect can be directly observed in the buying preferences of the people (Chavadi, et al, 2018).

Over some time, the number of firms contributing towards CSR initiatives has taken a toll considerably. This has been possible because of the mandatory CSR requirement effective from 1st April, 2014. The CSR involvement has emerged to be the most crucial dimension that impacts the consumers' willingness to buy (Sharma, et al. 2018). the companies which operate, and contribute towards the philanthropic dimension can establish, and maintain good relationships with the consumers (Uhlig, et al. 2019). CSR and purchase intention are positively related (Bruno, J.M. et al. 2019). There is a positive relationship between the consumers' trust towards the socially responsible firms positively impacts their buying behavior or simply their willingness to buy. Ultimately, every company irrespective of the sector should integrate CSR in their marketing mix as it has proven that better consumer response is there when the companies are involved in CSR (Chaudhary, et al. 2020). There is a positive, and significant relationship between the extent of CSR, and consumer loyalty considering the mediating, and moderating variables (Tahir et al. 2021).

The novelty of this section is that there are not a lot of studies that have been conducted when it comes to consumer perception of CSR in the context of the FMCG sector. The studies that have been discussed above are mostly in the context of general consumer perception irrespective of any sector. The findings of this section are going to help the academicians, and the practitioners in the context of CSR to get an overall consumer perception in the context of the FMCG sector.

Managerial Implications

The managerial implications of the current study are relevant when it comes to adopting, and implementing CSR. The current research proved that the organizations in the context of the FMCG sector are concerned with increasing the loyalty of the consumers by actively engaging in CSR initiatives that will have a positive impact on the consumer perception of CSR. The main responsibility of the companies irrespective of the sector should be to indulge in fair legislative practices as they are providing goods and services to the responsible citizens of the country. The information and the findings provided by the present study can be easily used by the practitioners of the market, and public policymakers to generate a more positive image of CSR when it comes to Indian consumers by devising or revising the strategies, and acting upon them so that the companies are more responsive towards the needs and wants of the consumers. The consumer demands preferences should be kept in mind by the marketing department while taking decisions regarding the price of the product, advertisement-related decisions, and the product itself. The businesses themselves need to communicate to the consumers whether they have been exercising due diligence, and care else they need to face the consequences by the government controls. The best way of this for a firm is to engage in self-regulation. The well-being of the consumers in general, and not just in the context of the FMCG sector portrays the satisfaction of the consumers concerning various aspects like consumption, and maintenance of that consumption so that there is a positive impact towards the repurchase intention. The marketing department can organize various programs relating to maximum attainment of the overall consumer well-being. Various marketing activities can be devised by taking into account consumer preferences, and demands. When the consumers are satisfied in the context of CSR, they are going to spread a favorable word of mouth, and the goodwill of the firms will increase.

Scope for Further Research

The current study is restricted to the consumers located and based in Delhi. The sampling that has been used is convenience sampling therefore, in no way the findings are generalizable to a greater extent. To focus upon the variations in

consumer preferences, studies can be carried out where large samples from different locations and different periods are considered to get a wider perspective when it comes to consumer perception of CSR in the FMCG sector. When these two things are considered, it will be more helpful to the practitioners, and researchers of consumer behavior and preferences. The relationship between CSR, and the consumer perception which is analyzed is simplistic in nature, and there could be a series of relationships that could be established between these two. The relationships could include various moderating, and mediating effects between CSR, and consumer perception. These relationships seem interesting, they have not been analyzed in the current study. This offers a great opportunity for researchers and academicians in the field of CSR. The use of cross-sectional analysis has been implemented in the current study. Cross-cultural analysis can opt when it comes to further research on this topic. The study can be carried out across different locations, and nations to get better results that are also generalizable. The impact of CSR on consumer perception is industry-specific (FMCG sector). Other industries could have been included to get an idea about the overall perception of the consumers when it comes to different industries.

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Impact of Mergers and Acquisition on Financial Performance of Selected Indian Pharmaceutical Companies

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Abstract: Present study aims to understand the impact of mergers and acquisitions on profitability, liquidity and valuation of selected Indian pharmaceutical companies that can lead to know whether the M&As are beneficial to the acquirer companies or not. Analytical and Causal research design is used using various financial ratios and paired t-test based on secondary data collected from annual reports of selected Indian Pharmaceutical companies. The study attempts to understand the impact of mergers and acquisition in Indian pharmaceutical companies and whether the companies have successful impact of M&As on financial performance or not. The result shows that among selected five M&As, Torrent's acquisition was successful in improving its financial performance as its financial performance was enhanced after the acquisition. But same cannot be said for the remaining four M&As as its performance are almost similar as before merger and in few ratios, it had worsen post M&As.

Key Word: Mergers, Acquisitions, Pharmaceutical Industry

Introduction

India's Mergers & Acquisitions activity is expected to remain stable at over US$ 52 billion as per The Baker McKenzie report despite global turmoil M&A will decline to US$ 2.8 Trillion in the Year 2019 and US$ 2.1 trillion in 2020 (Indiatimes, 2019). In the year 2018, the Indian Corporates had a record of US$ 129.4 billion worth of announced M&A deals according to Thomson Reuters, which also increased the number of announced deals by 17.2% as compared to previous year. The year 2018 witnessed five M&A deals that exceed US$ 5 billion with combined value of US$ 39.8 billion. Last year, Domestic deals were at US$ 57.3

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billion, twice the amount from year 2017; Cross-border deals were of US$ 69.2 billion mainly due to inbound M&As. Most well-known inbound announced Acquisition was of Flipkart by US-based Walmart Inc. for US$ 16 billion. Other notable deals includes UltraTech Cement Ltd's acquisition of Binani Cement and Hindustan Unilever's acquisition of GlaxoSmithKline Consumer Healthcare Ltd. to name a few (Swaraj, 2019). The past year 2019 has remain stable as first nine months of this year have seen 322 deals of US$ 237.16 billion worth mainly dominated by IT sector, energy sector, infra and banking sector, pharma and manufacturing as these sectors have succeeded in achieving high value deals driven by distressed acquisitions of assets, acquisitions that accelerate top-level Growth through new and attractive market segments and new capabilities etc. This year also started with an acquisition by Zomato as this leading online food delivery company has purchased Uber Eats India for around $ 350 million (₹ 2,485 crore approx.) which is said to be covering 50% of market and value of orders giving a good competition to its arch-rival Swiggy. (Economic Times, 2020)

Merger and Acquisition are often used interchangeably but they are not same as merger is a combination of two corporations in which only one corporation survives and the merged corporation goes out of existence according to (Gaughan, 2007) while in Acquisition one organization purchases a part or whole another organization according to (Malik et al., 2014). In India, Ministry of Finance uses the term Amalgamation to refer merger and acquisition.

Indian Income Tax Act, 1961 explains Amalgamation as a mean to merge two or more companies with parent company which may be one or more that forms an entity of which all properties and liabilities of the acquired (amalgamating) entity/entities becomes the property of amalgamed (new formed) entity/entities; and shareholders holding not less than three-fourths in value of the shares in the amalgamating company or companies becomes shareholders of the amalgamated company by virtue of the amalgamation. (Ministry of Finance, 1961)

Review of Literature

Dhanlakshmi (2017) analyzed profitability performance of selected Indian Pharmaceutical companies with the help of two ratios: return on total assets, return of capital employed. The study included statistical test paired t-test with mean, standard deviation and co-efficient. The result of the study explained that out of the eight samples selected for the study only two sample showed significant difference in their profitability and remaining six companies showed no significant difference in return on capital employed while in return on total assets shows four samples showed significant difference in the ratio and remaining four showed no significant difference. thus the study suggests the acquirer firms to select the

pairing firms meticulously in order to increase the profitability. (Dhanlakshmi, 2017)

Gagnon and Volesky, (2017) studied merger and acquisition deals in the generic drug sector from the number and the size of the completed deals over selected study period. The study concentrated on completed deals to understand potential impacts of the dealings and had identified ten largest M&A deals in terms of amount involved. The study compared 345 M&A deals worth $160.30 billion classified in global context, M&A deals in US and M&A deals in global context excluding U.S. firms in pharmaceutical sector. The result of the study showed substantial movement of M&As in the year 2015 and 2016 as mean of growth compared to traditional greenfield investments which has led U.S. pharmaceutical sector to raise the price of drug product. (Gagnon & Volesky, 2017). Mishra and Chandra, (2010) examined impact of M&A on financial performance of Indian pharmaceutical companies over the period of 2000-2001 to 2007-2008 with the help of fixed effects model and random effects model to check whether two models differ significantly. The study also used a test statistic that had asymptotic $\div^2$ distribution. The variables of the said model includes current firm size, current market size, current market share, mergers and acquisitions, lagged selling intensity, lagged R&D intensity, lagged foreign technology purchase intensity, current export intensity and current import intensity. The model reveals that profitability of a firm directly depends upon its size, selling efforts; import & export intensities. However it also showed adverse effect on their market share and demand for the products. Thus the study concludes that mergers and acquisitions does not have significant long run impact on firm's profitability with possible variable of new firm entry in the market and x-inefficiency. (Mishra & Chandra, 2010)

Danzon et al. (2004) analysed the determinants of M&As in pharmaceutical and biotech industry with the aid of propensity scores to monitor the merger endogeneity. The study was based on 3083 firm years of which 1591firm years were of large scaled and 1492 firm years were small scaled. The study used multinominal logistic regression to model the probability of a firm's engagement in different type of merger for 3 years. The study variables were Tobin's q, the lagged percentage change in sales of the firm, the percentage of firm's marketed drug and percentage change in operating expense for regression model. The study reveals that higher propensity scored firms had slower growth regardless of the M&As. (Danzon et al., 2004)

Ashfaq et al. (2014) investigated impact of M&As on post-merger financial relative and absolute performance of non-financial firms of Pakistan. 16 samples were selected from 2000 to 2009 listed in Karachi stock exchange and three ratios: ROE, ROA and EPS were used to measure the performance. The study observed

that the absolute and relative financial performance of the sample firms were deteriorated post-merger at significant level indicating non-consideration of some factor following merger and also explains the poor execution of M&A process by the acquirers. (Ashfaq et al., 2014). Chavda and Raval (2019) analyzed the financial health of three steel companies post M&As. The study aimed to understand why companies prefers M&As as a tool for growth while it has more risk attached to it. Four accounting ratios were used: operating profit ratio, net profit ratio, debt-equity ratio and EPS for analyzing financial performance. The study showed JSWs merger with Ispat showed positive impact while SAIL had negative impact on financial performance due to merger. (Chavda & Raval, 2019). Aggarwal and Garg (2019) observed 68 M&As to know its impact on accounting based performance. The study evaluated seven variables classified in three categories: profitability, liquidity and solvency studied for 5 years pre and post M&As analysis as well as 3 years pre and post M&As analysis and paired sample 't' test is used for hypothesis testing. The study showed the significant impact in profitability and liquidity in long term but failed to had significant impact on solvency performance. It also revealed that service sector M&As have shown improvement compared to manufacturing firms in medium term. (Aggarwal & Garg, 2019)

Above review of literature shows that majority of the studies are based on the pharmaceutical industry to understand impact of merger and acquisition on profitability but fewer studies have considered pharmaceutical industries to understand the impact of merger and acquisition on overall financial performance. It was also observed that the existing literature available on pharmaceutical mergers are based on event study concentrating on share price in days prior and post M&A. Keeping that in mind, present study aims to cover pharmaceutical industry to understand the impact of merger and acquisition on its financial performance of acquirer companies with the help of ratio analysis and paired t-test to understand the significance of the mergers and acquisitions of selected Indian pharmaceutical companies.

Objectives

- To analyse the impact of M&A on profitability performance of selected Indian pharmaceutical (acquirer) companies.
- To assess the impact of M&A on liquidity performance of selected Indian pharmaceutical (acquirer) companies.
- To analyse the impact of M&A on valuation of selected Indian pharmaceutical (acquirer) companies.
- To assess the impact of M&A on activity performance of selected Indian pharmaceutical (acquirer) companies.

- To examine the impact of M&A on overall financial performance of selected Indian (acquirer) companies.

Research Methodology

Hypotheses

H_{01}: There is no significant difference between pre and post M&A profitability performances of selected Indian pharmaceutical (acquirer) companies.

H_{02}: There is no significant difference between pre and post M&A liquidity performances of selected Indian pharmaceutical (acquirer) companies.

H_{03}: There is no significant difference between pre and post M&A activity performances of selected Indian pharmaceutical (acquirer) companies.

H_{04}: There is no significant difference between pre and post M&A valuation ratios of selected Indian pharmaceutical (acquirer) companies.

Research Design

The study uses descriptive and causal research design based on secondary data collected from annual reports of selected Indian pharmaceutical companies. In this study various ratios for profitability, liquidity, activity and valuation of companies are used and for statistical analysis paired t-test is used.

For this study the companies are selected on following criteria,

Parent or the acquirer companies listed in Indian Stock Exchanges (BSE & NSE). The deals amounted of $ 100 million or more for have been considered for study. Only domestic M&As and outbound M&As of pharmaceuticals companies. Either all cash M&As and all stake acquisition of pharmaceutical companies and Convenient sampling technique is used for sample selection.

To select sample for the study, certain conditions were levied as stated in sampling technique. The study aims to understand the M&A scenario of Indian pharmaceutical companies which is said to be a heavily active industry for M&A as in terms on number of acquisition and deal amount involved hence the samples were selected from Indian pharmaceutical companies that went for M&A costing more than $100 million or more. Also while selecting samples for the study it was also considered that the acquisitions must be either all stake acquisition or a whole division acquisition as pharmaceutical companies often goes for M&A as mean to enter in foreign market or to Acquire APIs (Active pharmaceutical ingredients) for developing their medicinal portfolio as the process of developing and approving APIs is costly as well as time consuming (usually it takes minimum 10 years for a company to get approval of its new drug from synthesis). Considering above criteria following samples were selected.

The study is based upon secondary data sources such as annual reports and media (press) releases collected from the websites of selected Indian pharmaceutical companies. The Period of the study is 3 years prior to M&As and 3 years post M&As for paired t-test.

- Sun Pharmaceutical and Ranbaxy Merger ($ 4 billion)
- Lupin Pharmaceutical's acquisition of Gavin ($880 million) and Novel ($ 14 billion)
- Cipla Limited's acquisition of InvaGen and Exelan ($ 550 million)
- Torrent Pharmaceuticals acquired Elder Pharmaceuticals (Indian and Nepal division) ($ 324 million)
- Dr. Reddy's laboratories acquired UCB (Indian portfolio) ($ 128.38 million)

Tools and Techniques

Performance	Ratios
Profitability	Net Profit Margin
	Return on Equity
	Return on Capital Employed
	Return on Assets
Liquidity	Current Ratio
	Quick Ratio
Activity	Debt to Equity (activity ratio)
	Asset Turnover (activity ratio)
	Inventory Turnover (activity ratio)
Valuation	Market Cap to Net Operating Revenue
	Retention Ratio
	Stock Price to Book Value

For the testing of Hypothesis, the study uses paired t-test as present study compares the post M&A financial performance of the companies with prior M&A performance.

Data Analysis and Interpretation

Following are the ratio wise analysis of selected Indian acquires pharmaceutical firms.

A. Profitability

1. Net Profit Margin: (%)

Table No. 1 Net profit margin of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Net Profit Margin	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	37.93	30.7	24.12	20	19.85	25.02	30.9167	21.6233
Lupin	13.9	16.56	19.14	16.02	14.71	1.61	16.5333	10.78
Cipla	18.73	14.02	11.05	10.11	7.24	9.36	14.6	8.9033
Torrent	10.61	13.54	15.86	16.13	25.92	16.05	13.3367	19.3667
Dr. Reddy's	12.83	14.69	15.55	13.53	8.85	6.38	14.3567	9.5867

2. Return on Equity: (%)

Table No. 2: Return on equity of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Return on Equity	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	21.71	19.9	16.95	17.74	13.78	19	19.52	16.84
Lupin	25.25	26.49	27.08	20.25	18.94	1.85	26.2733	13.68
Cipla	17.14	13.82	10.95	11.8	8.02	9.91	13.97	9.91
Torrent	23.79	30.43	34.89	30.15	49.6	21.46	29.7033	33.7367
Dr. Reddy	23.97	24.96	23.71	16.95	10.53	7.53	24.2133	11.67

3. Return on Capital Employed: (in %)

Table No. 3 Net profit margin of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Return on Capital Employed	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	19.17	16.81	13.43	13.89	18.35	21.7	16.47	17.98
Lupin	22.24	24.23	25.54	19.26	17.99	10.42	24.0033	15.89
Cipla	16.46	12.8	9.98	14.48	7.82	9.78	13.08	10.6933
Torrent	16.6	20.87	22.93	14.78	47.13	13.4	20.1333	25.1033
Dr. Reddy	19.5	19.17	19.83	15.17	12.07	9.13	19.5	12.1233

4. Return on Assets: (%)

Table 4: Return on assets of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Return on Assets	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	16.12	14.28	10.69	9.25	8.18	11.34	13.6967	9.59
Lupin	14.74	17.99	18.29	9.99	9.61	0.95	17.0067	6.85
Cipla	13.25	10.35	7.51	6.43	4.78	6.17	10.37	5.7933
Torrent	9.24	11.44	13.09	9.49	19.13	9.62	11.2567	12.7467
Dr. Reddy	11.32	12.24	12.56	10.45	5.92	4.19	12.04	6.8533

B. Liquidity

1. Current Ratio: (in times)

Table 5: Current ratio of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Current Ratio	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	3.93	3.76	3.12	1.78	2.28	1.84	3.6033	1.9667
Lupin	1.71	2.32	2.1	1.95	1.95	2.4	2.0433	2.1
Cipla	3.03	2.2	1.95	1.14	2.61	2.82	2.3933	2.19
Torrent pharma	1.46	1.5	1.57	1.43	1.43	1.78	1.51	1.5467
Dr. Reddy's	1.52	1.78	1.74	1.86	1.15	1.52	1.68	1.51

2. Quick Ratio: (in times)

Table 6: Quick ratio of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Quick Ratio	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	3.13	2.94	2.6	1.43	1.79	1.46	2.89	1.56
Lupin	1.06	1.51	1.43	1.31	1.36	1.68	1.3333	1.45
Cipla	1.98	1.08	0.98	0.65	1.58	1.77	1.3467	1.3333
Torrent pharma	1.07	0.96	1.1	1.06	1.01	1.21	1.0433	1.0933
Dr. Reddy's	1.13	1.37	1.36	1.46	0.81	1.1	1.2867	1.1233

C. Activity Performance

1. Debt to Equity: (in times)

Table 7: Debt to equity of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Debt to Equity	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	0.02	0.01	0.13	0.3	0.25	0.22	0.053333	0.256667
Lupin	0.19	0.08	0.05	0.64	0.59	0.51	0.106667	0.58
Cipla	0.11	0.12	0.16	0.45	0.33	0.29	0.13	0.356667
Torrent	0.39	0.41	0.5	1.01	0.53	0.52	0.433333	0.686667
Dr. Reddy	0.5	0.53	0.37	0.27	0.4	0.4	0.466667	0.356667

2. Asset Turnover: (in times)

Table 8: Asset turnover of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Asset Turnover	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	48.67	54.11	54.74	55.95	51.3	50.98	52.5067	52.7433
Lupin	108.16	110.58	97.2	62.46	65.27	60.05	105.3133	62.5933
Cipla	71.01	75.35	72.18	65.26	68.42	66.29	72.8467	66.6567
Torrent	87.71	84.88	82.54	58.82	73.82	59.94	85.0433	64.1933
Dr. Reddy	88.19	83.34	80.77	76.37	65.07	63.34	84.1	68.26

3. Inventory Turnover Ratio: (in times)

Table 9: Inventory turnover ratio of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Inventory Turnover Ratio	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	3.84	4.38	5.15	4.84	4.44	4.58	4.4567	4.62
Lupin	4.95	5.3	5.1	4.32	4.77	4.31	5.1167	4.4667
Cipla	3.47	3.49	3	3.62	4.13	3.75	3.32	3.8333
Torrent pharma	5.07	3.48	4.16	4.36	4.92	3.73	4.2367	4.3367
Dr. Reddy's	5.48	5.52	5.85	6.09	4.98	4.91	5.6167	5.3267

D. Valuation

1. Market Cap to Net Operating Revenue: (in times)

Table 10: Market capitalisation to net operating revenue of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Market Cap to Net Operating Revenue	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	7.35	7.5	7.38	7.72	6.92	5.27	7.41	6.6367
Lupin	2.92	3.72	7.06	4.72	3.76	2.11	4.5667	3.53
Cipla	3.68	3.05	5.03	2.98	3.31	2.89	3.92	3.06
Torrent pharma	1.97	1.83	2.12	4.22	3.39	4.51	1.9733	4.04
Dr. Reddy's	2.52	3.26	3.96	3.33	3.07	2.42	3.2467	2.94

2. Retention Ratio: (in %)

Table 11: Retention ratio of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Retention Ratios	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	83.43	82.64	90.11	84.09	84.11	96.54	85.3933	88.2467
Lupin	86.37	85.35	85.97	85.07	86.77	-34.84	85.8967	45.6667
Cipla	89.6	88.43	86.39	86.69	80.76	86.58	88.14	84.6767
Torrent pharma	74.67	55.03	74.5	74.64	59.72	81.87	68.0667	72.0767
Dr. Reddy's	83.31	84.4	85.41	80.72	73.76	57.83	84.3733	70.77

3. Stock Price to Book Value: (in times)

Table 12: Market price to book value of selected pharmaceutical companies for 3 years prior and 3 years post M&A

Price/BV (X)	Pre M&A (X)			Post M&A (Y)			Average of X	Average of Y
Sun Pharma	4.82	5.65	6.41	8.28	5.98	4.5	5.6267	6.2533
Lupin	5.41	6.05	10.17	5.97	4.83	2.45	7.21	4.4167
Cipla	3.38	3.07	5.3	3.57	3.8	3.07	3.9167	3.48
Torrent pharma	4.46	4.14	4.66	7.89	6.49	6.03	4.42	6.8033
Dr. Reddy's	4.71	5.54	6.03	4.12	3.56	2.75	5.4267	3.4767

Hypotheses Testing

Table 13: Hypotheses testing of profitability ratios of selected pharmaceutical companies

Profitability		Mean	Variance	Mean Difference	T stat	D.F.	Null Hypothesis at 10 %	P value
Net Profit Margin	Pre M&A	17.949	53.889692	3.8966667	1.49920236	4	Failed to Reject	0.208196122
	Post M&A	14.052	53.889692					
Return on Equity	Pre M&A	22.736	37.606097	5.5686667	1.75740839	4	Failed to Reject	0.153681008
	Post M&A	17.167	92.425252					
Return on Capital Employed	Pre M&A	18.637	16.839363	2.2793333	0.9047333	4	Failed to Reject	0.41677169
	Post M&A	16.358	32.337903					
Return on Assets	Pre M&A	12.874	6.8342633	4.5073333	2.43533268	4	Rejected	0.071567815
	Post M&A	8.3667	7.9733611					

Table 13 shows the mean, mean difference and hypothesis testing of profitability ratios. In net profit margin, only Torrent Pharmaceutical's NPM was increased after the acquisition among the selected companies. Similar to net profit margin ratio, Torrent's return on equity was showing positive impact due to acquisition. Sun Pharmaceuticals and Torrent's return on capital employed was improved after M&A. In return on assets, except torrent, other four companies has shown decreased ratio after M&A. In asset turnover ratio, only Sun Pharmaceutical was able to sustain prior merger ratio as other four companies' ratio were decreased after M&A.

Thus, the result of hypothesis testing with the help of paired t-test of selected profitability ratios failed to reject null hypothesis at 10% level of significance that as the all ratios except return on assets as they do not show significant difference on profitability performance post M&As.

Table 14: Hypotheses testing of liquidity ratios of selected pharmaceutical companies

Liquidity Ratio		Mean	Variance	Mean Difference	T stat	D.F.	Null Hypothesis at 10 %	P value
Current Ratio	Pre M&A	2.246	0.691797	0.38333331	.206562202	4	Failed to Reject	0.294078
	Post M&A	1.863	0.09963					
Quick Ratio	Pre M&A	1.58	0.551361	0.268	0.994385649	4	Failed to Reject	0.376318
	Post M&A	1.312	0.041103					

Table 14 Shows the mean, mean difference and hypothesis testing of liquidity ratios. The current ratio of the selected pharmaceutical companies has not shown much change after M&A except Sun Pharmaceuticals as its current ratio decreased

after merging with Ranbaxy. In quick ratio, similar situation has been seen as except for Sun Pharmaceuticals all four companies have shown almost no impact after M&A. Overall liquidity performance of selected Indian pharmaceutical companies have shown no significant impact on liquidity performance post M&A.

Hypothesis testing with the help of paired t-test supports the result as at 10% level of significance, we failed to reject the null hypothesis that there is no significant difference of M&A on liquidity performance of selected Indian pharmaceutical companies.

Table 15: Hypotheses testing of activity ratios of selected pharmaceutical companies

Activity Ratio		Mean	Variance	Mean Difference	T stat	D.F.	Null Hypothesis at 10 %	P value
Inventory Turnover Ratio	Pre M&A Post M&A	4.5493 4.5167	0.769669 0.292156	0.032667	0.163185	4	Failed to Reject	0.878285
Asset Turnover	Pre M&A Post M&A	79.962 62.8893	372.5141 372.5141	17.07267	2.310898	4	Rejected	0.081951
Debt to Equity	Pre M&A Post M&A	0.238 0.4473	0.038364 0.031919	-0.20933	-2.24466	4	Rejected	0.088165

Table 15 shows the mean, mean difference and hypothesis testing of activity ratios. Dr. Reddy's Laboratory has decreased debt to equity ratio except all four companies has increased debt to equity ratio. similar scenario is seen for inventory turnover as the selected companies have shown less to none impact on inventory turnover ratio after M&A. Asset turnover ratio is also showing negative as the ratio has decreased post M&A.

Table 16: Hypotheses testing of valuation ratios of selected pharmaceutical companies

Valuation Ratios		Mean	Variance	Mean Difference	T stat	D.F.	Null Hypothesis at 10 %	P value
Market Cap to Net Operating Revenue	Pre M&A Post M&A	4.2233 4.0413	4.0953 2.2933	0.182	0.3165	4	Failed to Reject	0.7674
Retention Ratio	Pre M&A Post M&A	82.374 72.2873	65.8674 279.8006	10.0867	1.2364	4	Failed to Reject	0.2839
Price/Book Value	Pre M&A Post M&A	5.32 4.886	1.6142 2.4323	0.434	0.4718	4	Failed to Reject	0.6616

Thus, hypothesis testing at 10% level of significance may reject the null hypothesis of activity ratio in case of asset turnover ratio and debt to equity ratio stating there may be significant difference between pre and post M&A activity ratio of selected pharmaceutical companies but for Inventory turnover ratio we failed to reject the hypothesis.

Table 16 shows the mean, mean difference and hypothesis testing of valuation ratios. In Market capitalisation to net operating revenue ratio, except Torrent Pharmaceuticals, all four companies have decreased post M&A in compared to pre M&A ratio. Retention ratio shows that the out of selected Indian Pharmaceutical Companies, Sun Pharmaceuticals and Torrent Pharmaceuticals have increased its retained earnings but Cipla, Lupin and Dr. Reddy's retained earnings were decreased after M&As. The stock price to book value ratio showed similar result to retained earning ratio as Sun Pharmaceuticals and Torrent Pharmaceuticals have increased its ratio whereas other three pharmaceutical companies have failed to increase the ratio post M&A.

Thus, hypothesis testing at 5% level of significance failed to reject the null hypothesis of valuation ratio stating there is no significant difference between pre and post M&A valuation ratio of selected pharmaceutical companies.

Major Findings

In profitability performance, except for Torrent Pharmaceuticals all four companies have shown decreased profitability post M&A in compared to pre M&A ratios suggesting that the selected companies failed to improve its profitability with the help of M&As. In liquidity performance, all five selected Indian pharmaceutical companies have shown less to no difference in post M&A performance in compared to pre M&A performance signifying companies have failed to improve its liquidity after M&As. In Activity performance, except for Dr. Reddy's Laboratory all four companies have shown decreased activity performance post M&A in compared to pre M&A ratios suggesting that the selected companies failed to improve its activity performance with the help of M&As.

The valuation ratios have shown decrease in the valuation ratios except Torrent pharma as its valuation after the acquisition of Elder pharmaceuticals' Indian and Nepal division has increased post acquisition. Overall result shows that among selected five M&As, Torrent's acquisition was successful in improving its financial performance after M&As as its financial performance was increased after the acquisition. But same can not be said for the remaining four M&As as its performance are as same as before merger and in few ratios it got worse post M&As.

Conclusion

M&As have become a go to tool for pharmaceutical industry from expanding their business in domestic market to gain new market entry, to decrease the cost of drug development and for strategic repositioning. Indian Pharmaceutical companies have become an active player in wherein they are looking to enhance their capability with the help of M&As. These companies are also exploring new markets like Japan, Russia, Germany etc. that can help them expand their footprint in global context, diversify their business plan or can help to move up in the value chain. As M&As are said to be a cost-effective way to bring in a portfolio of branded generics, it is necessary to go for a partner that can increase the financial position of the company in long run. the study revealed that out f five M&As, one resulted successful in achieving positive outcome post M&A. whereas other four companies failed to obtain the better financial performance with the help of M&As. Indian Pharmaceutical have the potential to expand their operations and presence not only in India but also in International market as well through M&As but in order to achieve it, the companies must choose its partnering company well as it can make or break the company.

Limitations of the Study

The study is based on secondary data. So the reliability and findings are contingent upon the data published. The study consist 5 M&As in Indian Pharmaceutical Sector, of which acquirer companies are listed in Indian stock exchanges and whose ultimate parent company is Indian (Only domestic and Outbound). The time period of the study is of 6 years only i.e. three years before M&A and three year after M&A.

Further Scope of the Study

This study is limited to six years only, thus researchers can go for more years. The study is limited to only 5 M&As of Indian Pharmaceutical Companies so researchers can opt for more M&As and can explore other sectors. Researchers can also concentrate for any particular M&A by taking case study.

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Investigating Perception of Rural Households with Regard to Service Quality of Cooperative Banks in J&K

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Abstract: The present study is an attempt to assess the perception of rural households with regard to service quality of cooperative banks in J&K. In order to fulfill the objectives of the study both primary and secondary data were collected. The primary data were collected from 432 customers of Cooperative Banks operating in Jammu division of J&K using purposive sampling. EFA, CFA, SEM, ANOVA and Independent sample t-test were used for scale purification and data analysis. The finding of the study reveals that innovative banking services, service quality, feeling of security, responsiveness trustworthiness and confidentiality are the significant predictors of quality of cooperative banking services. Significant relationship was observed between quality of cooperative banking and customer satisfaction, quality of cooperative banking services and customer loyalty, trust & social bonds between customer and employees of the bank. Further, significant relationship was also observed between trust and social bonds and customer satisfaction. Output from One-way ANOVA showed that respondents differ significantly with regard to quality of cooperative banking services. Insignificant relationship found between male and female respondents as well as married and unmarried respondents.

Key Words: EFA, CFA, SEM, Cooperative banks, quality of financial services

Introduction

In recent years, it has been found that cooperative banking sector all around the world are under massive pressure to refurbish public confidence in the character that they play in the society. As cooperative banks strives to gain a competitive advantage, the challenge remnants to maintain customer experience and brand perceptions central to all strategic thinking in terms of service quality. Service quality measures describe whether financial products and services offered by

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cooperative banks match customer's needs, the range of options available to customers and his awareness and understanding of financial products. It relates to the relevance of the financial service or product to the lifestyle needs of the consumer. Quality of cooperative banking services can be seen as the degree to which a service meets customer's expectations. It can thus be defined as the difference between customer expectations of service and perceived service. Parasuraman et al. (1985) believed that if expectations are greater than performance, then supposed quality is less than pleasing and thus customer dissatisfaction occurs. Service quality has been recognized as having the potential to deliver strategic benefits such as improved customer retention rates and at the same time also enhances operational efficiency and profitability. Adrienne et al. (2003) recommend that e-service quality is amongst a firm's competitive capabilities that lead to business performance. Al- Hawari and Ward (2006) also demonstrates that service quality impacts on customer satisfaction, which in turn affects the financial performance of banks.

Review of Literature

Service quality (SQ) is an assessment of supposed expectations (E) of a particular service with apparent performance (P), which gives rise to the equation SQ=P-E (Lewis and Booms, 1983). It is believed that a business enterprise with towering service excellence can meet or surpass customer prospect. Improvements in service quality can be achieved by identifying customer needs and responding quickly and analytically to their needs and problems by establishing valid and reliable service performance measures to assess customer satisfaction (Oliver et al. 1994). Muhammad et al. (2011); Islam & Ali (2011) and Mengi (2009) argued that optimistic relationship stuck between service quality and customer satisfaction. They culminated that increased customer satisfaction leads to increase in altitude of trustworthiness for bank. Felix (2017) exposed that there exist a momentous and constructive affiliation between service quality and shopper pleasure while comparing dimension like customer adherence with fidelity, receptivity and assurance. Rijwani et al. (2017) posit that among all the factors, customer satisfaction highly depends on assurance and least depends on the reliability.

Gayathri (2018) and Gnoufougou et al. (2014) observed that majority of rural households are illiterate and unaware about financial products and services. Kanojia & Yadav (2012); Al-Hawari & Ward (2006) and Ali & Bisht (2018) believed that attitude and behavior of staff is the root cause for displeasure in public sector banks. Lenka et al. (2014); Muhammad et al. (2011); Munari et al. (2013); Mustafa and Tariq (2017); Ozatac et al. (2016) alleged that improved technical, human and tangible aspect of the service quality increases the satisfaction level among customers. Paul et al. (2016) found that variables like queuing time,

pleased to be assisting, space availability, ATM location, appearance, handling complaints, follow up, fast services, respond to the need, knowledge of the product and solving questions generally affect customer happiness in public sector banks.

Singh and Arora (2011); Buchari et al. (2015); Parasuraman et al. (1985) found that customers of nationalized banks were not satisfied with the employee behavior and the infrastructure of the bank, while the customers of the private and foreign banks were disappointed with their high charges, accessibility and communication. (2018) observed that customer have higher trust in the public sector banks as compare to private sector banks. Aldlaigan (2005) revealed that customers generally develop three forms of constructive attachments to their banks such as faith in the organizational competence, mutually aligned and congruent values and positive social bonds that deliver high level of relational value. Mustafa et al. (2007) advocated that the public sector banks must introduce the modern marketing strategies, follow the RBI norms and provide facilities to its customers as per the norms.

Buchari et al. (2015) explained that about 56% of the respondents are familiar with the financial products and services offered by Islamic banks. Shahneaz (2013); Singh & Arora (2011) and Iberahims et al. (2015) concluded that there is positive correlation between the variables consistency, dependability, timeliness and technology with the customer satisfaction. Kwarteng (2012) found that customers are satisfied from the customer support services, hospitality services and management of customer grievances.

Kesari and Neigi (2015); Kanojia and Yadav (2012) found that managers of private sector banks are performing better in building better relationships with their customers as compared to public sector banks. Gupta and Dev (2014) found that there are five factors that influence the customer satisfaction such as service quality, ambience/hygiene factors, involvement factor, accessibility factor and financial factors. Mistry (2013) found five factors that affect the service quality namely reliability, responsiveness, assurance, empathy and tangibles.

Belas and Gabcova (2016) found that customer satisfaction is largely dependent upon the quality of bank products, financial needs of the customers that are recognized by the bank and customer acceptance of prices. Observed that these surveys help in understanding the perceptions of the customers, emphasizing the important aspects of the relationships and the areas that can be possibly improved. Ozatac et al. (2015) observed that everyone wants to be guided according to their benefits.

Need of the Study

While reviewing the extant literature on service quality, it has been found that most of the studies have evaluated the impact of service quality on customer satisfaction, customer attachment, customer loyalty, technical and functional quality of service providers and financial performance of public sector banks (Addo & Kwarteng, 2012; Aldlaigan & Buttle, 2005; Lenka et al., 2009; Lieu, 2010; Jha, 2018). They believed that customers generally satisfied due to customers support services, hospitality and management of grievances services. Iberahims et al. (2015) ; Mistry (2013); Gupta and Dev (2014) examined factors like consistency, dependability, timeliness, ambience, involvement factor, accessibility factor, financial factor and technology, but they failed to cover other significant factors like feeling of security, responsiveness, confidentiality, customer loyalty, tolerance, commitment, fairness, friendliness, sufficiency, problem solving approach, social bonds and trustworthiness. Lenka et al. (2014); Paul et al. (2016); Khalid et al. (2011); Lenka et al. (2009); Lieu (2010); Mengi (2009) and Mistry (2013) put emphasis on answering customer questions and responding to their specific needs. Literature has also revealed significant effects of genders on service quality (Zalatar, 2012), but there is dearth of literature regarding effect of customers gender on service quality. Further, most of the studies were conducted on public and private sector banks and very few are found on cooperative banks.

Objectives of the Study

The present study is undertaken with the following objectives:

- To assess the impact of quality of cooperative banking services on customer satisfaction.
- To check the impact of quality of cooperative banking services on trust and social bonds between customer and bank employees
- To appraise the impact of quality of cooperative banking services on customer loyalty.
- To evaluate the impact of trust and social bonds on customer satisfaction.
- To analyse the impact of customer satisfaction on customer loyalty.

Hypotheses Development

Based on the insights from the review of literature, the present study has formulated and verified the following hypotheses.

H_1: Innovative banking service, service quality, feeling of security, responsiveness, trustworthiness and confidentiality are the significant predictors of quality of cooperative banking services.

H_2: Quality of cooperative banking services significantly affects customer satisfaction.

H_3: Quality of cooperative banking services significantly affects trust and social bonds between customer and bank employees.

H_4: Quality of cooperative banking services has significant impact on customer loyalty.

H_5: Trust and social bonds between the customer and bank employees has direct impact on customer satisfaction.

H_6: Customer satisfaction significantly affects customer loyalty.

H_7: Respondents with different demographic profile differs in their perception regarding quality of cooperative banking services.

Pilot Study

To improve the questionnaire, pretesting was done on 50 respondents, selecting 10 respondents each from five districts viz., Jammu, Samba, Kathua, Udhampur and Doda using purposive sampling technique. Following tabulation of pre-testing results, several items were customized and few were deleted and finally 92 items were retained for final survey. Out of 92 items in the questionnaire, 18 items pertained to general information, 74 related to service quality dimension sub-divided in to predictors of service quality (35 items), trust & social bonds (19 items), customer satisfaction (12 items) and customer loyalty (08 items). Five point Likert scale is used in collecting information, where '5' denotes 'strongly agree' and 1 denotes 'strongly disagree'. The final sample size was arrived at 726 using following formula (Malhotra, 2009), which was round off to 750.

$n= ó^2 * z^2 / D^2$

Research Methodology

To fulfil the objectives of the study both primary as well as secondary data were used. Secondary data were collected from books, journals, periodicals, annual reports of cooperative banks, magazines, statistical digest of Govt. of J&K and internet etc. Primary data for the study were collected from the customers of three cooperative banks functioning in Jammu division of J&K viz., The Citizen Cooperative Bank; The Jammu Central Cooperative Bank and Devika Urban Cooperative Bank Ltd., and one Women Cooperative Credit society. While collecting primary data purposive sampling technique was followed. During the survey about 750 questionnaires were distributed to customers of cooperative banks, but only 441 responded back, out of which 9 questionnaires were discarded because of imperfect response, so the final sample size was arrived at 432 respondents, reflecting an effective response rate of 57.6%. The responses were

collected using a self developed questionnaire sub-divided into demographic variables and specific information relating to quality of banking services. Purposive sampling technique was adopted in collecting the data from the respondents.

Normalcy of the data was checked through two statistical tests i.e., Skewness and Kurtosis with the help of SPSS 20.0 version and the value of Skewness and Kurtosis were (-.211 and .215) under the threshold limit of ±1, which shows that the data were normally distributed.

The statistical techniques applied for scale purification and data analysis are: Exploratory factor analysis (EFA); Confirmatory factor analysis (CFA); Structural Equation Modelling (SEM); One-way ANOVA and Independent sample t-test

Exploratory Factor Analysis (EFA) for Factor Structure

In the present study, the multivariate data reduction technique of factor analysis along with Principal Component Analysis with Varimax Rotation has been used through SPSS 20.0 version for summarization of the total data into minimum factors (Field, 2003). The Eigen value equal to or more than one criteria has been used to determine the number of components to be extracted from further analysis. KMO measure of sampling adequacy has also been used to verify the correctness of factor loadings, where the value greater than .50 is acceptable, value between .50 & .70 are mediocre, .70 and .80 are good and values between .80 & .90 are great and above .90 are excellent (Malhotra, 2009). To find out correlation among the variables, Bartlett test of spherecity, which is also called zero identity matrix has also been used (Field, 2003 and Hair et al., 2009). The statements with factor loadings less than .50 are ignored for consecutive analysis (Hair et al., 2009).

EFA with regard to quality of cooperative banking services

Regarding quality of banking services, the KMO value stood at .713 and Bartlett's value at 4619.268 (p = 0.000). Out of 35 statements which are actually kept in the construct of quality, the Principal Component Analysis along with Varimax Rotation brought to the level of 17 statements and resulted into six factor solution with 71.809 % of the total variance explained. The factor loading ranges from 0.565 to 0.896 and communalities from .663 to .856.

A brief description of factors emerged are as under

Factor 1: Innovative banking services: This factor comprises of six items i.e., 'The bank provides financial services with modern technology i.e., ATM, smart card, mobile banking etc.', 'The bank has sufficient number of ATMs per branch', 'The range of service provided by Cooperative bank is in consistent with the

latest innovations in banking services', 'Cooperative bank adopts innovative applications of ICT for delivery of financial services', 'Cooperative bank has increased the ability of individuals to access financial services and products' and 'Cooperative bank enables the individuals to cope with unforeseen expenses'. The mean values of this factor ranges between 2.607 to 3.843, factor loadings between .565 to .896 and communalities from .516 to .869. This factor underlines that Cooperative banks must adopt innovative banking services with modern technology like ATM, smart card, mobile banking and applications of ICT for delivery of quality financial services.

Factor 2: Service quality: This factor emerges with two items namely, 'Quality of service provided by Cooperative bank is excellent' 'Employees are well trained in Cooperative bank' which exhibits mean values 4.66 & 4,657, factor loadings .800 & .806 and communalities .667 & .695. This factor emphasises that Cooperative banks must focus on employee training, so that quality banking services be provided to customers.

Factor 3: Feeling of security: This factor contains three items namely, 'The bank contacts me every time it is useful', 'The bank creates a feeling of security among its customers' and 'Cooperative bank enables the individuals to invest in a business venture or property'. The mean values varied between 3.246 to 4.279, factor loadings between .636 to .810 and communalities from .738 to .856. This factor underlines that customers perceive Cooperative banks creates a feeling of security among its customers while delivering quality banking services.

Factor 4: Responsiveness: This factor includes only two items namely, 'Bank employees are efficient and responsive' and 'The bank provides financial education to all its customers' which reveals means values 4.293 & 3.138, factor loadings .636 & .801 and communalities .673 & .675. This factor underlines that bank employees must be efficient and responsive.

Factor 5: Confidentiality: The two items under consideration namely, 'The bank maintains the confidentiality of its customers' and 'I deposit money in Cooperative bank without any doubt' highlights the mean values 4.446 & 4.533, factor loadings .886 & .731 and communalities .739 & .775. Beneficiaries recognise confidentiality aspects of Cooperative banks and feel secure while depositing money with the bank.

Factor 6: Trustworthiness: The final factor envisages two items, 'Financial services are delivered when promised' and 'I trust on banking correspondent' with mean values 3.817 & 3.615, factor loadings .875 & .790 and communalities .621 & .736. This factor connotes that Cooperative banks must deliver financial services as and when promised so that beneficiaries must trust on bank employees.

Reliability and Validity

Six factors emerged after scale purification falling within the domain of quality of banking services. The Cronbach's reliability coefficient for all the 17 items underlying six factors ranges from .618 to .856. The alpha reliability coefficients for F1 i.e., Innovative banking services (.856) is higher than the criteria of .77 obtained by Gordon and Narayanan (1984) indicating high consistency. The alpha reliability coefficients for other factors such as F2: service quality (.676), F3: feeling of security (.656), F4: responsiveness (.658), F5: confidentiality (.618) and F6: trustworthiness (.675) are also at a minimum acceptable level of 0.50 as recommended by Brown et al. (2001) and Kakati & Dhar (2002) thereby obtaining satisfactory internal consistency. The reliability and adequacy of sample size to yield distinct and reliable factors is further demonstrated through Kaiser-Meyer-Olkin measure of sampling adequacy that is .713 and all factors loadings are greater than 0.50.

The six factors obtained alpha reliability, higher or equal to 0.50 and satisfactory KMO value at .713, indicating significant construct validity of the construct (Hair et al., 2009).

EFA with regard to customer satisfaction

Regarding customer satisfaction, the process of Principal Component Analysis (PCA) along with Varimax Rotation brought the construct to the level of 8 statements out of 12 statements originally kept in the sphere of customer satisfaction, with variance explained at 61.154 percent, KMO value above 0.8 and Bartlett value of 10665.242. The factor loading ranges from 0.512 to 0.711 and communalities from .545 to .836.

A brief explanation of factors emerged is as under

Factor 1: Friendliness: This factor comprised of two items only i.e., "Cooperative banks satisfy your needs fully," and "Staff members of cooperative banks is courteous and friendly in handling your grievances" with mean values 2.765 and 3.884, factor loadings .703 and .811and communalities .648 and 714 respectively. This factor indicates that cooperative banks must satisfy all the financial needs of the customer and must redress all their grievances in a very courteous and friendly way.

Factor 2: Sufficiency: This factor is restricted to three items only i.e., "You are satisfied with the number of services offered by cooperative banks", "The bank has sufficient and comfortable seating arrangements" and "Help desk/assisting staff is available for filling withdrawal/deposit form". The mean value of this factor ranges from 2.803 to 3.804, factor loadings ranges between .614 to .845

and communalities from .601 to .836. The factor depicts that Cooperative banks must have adequate and comfortable seating arrangements for their customer and due consideration be given to the customer for offering them helping hand in filling deposit and withdrawal forms.

Factor 3: Problem solving approach: This factor consists of five items namely, "The branch staff are willing to listen and respond to your needs on time", "Employees are helpful in making information available regarding new schemes", and "Bank follows quick problem solving approach". The mean values for the items fluctuates between 3.046 to 4.089, factor loadings ranges between .603 to .785 and communalities from .545 to .767. The customers perceives that employees of cooperative must listen and respond to their problems in time, helps them in making the information available regarding the new schemes offered by the bank and they must also follow quick problem solving approach.

Reliability and Validity

Three factors are obtained after scale purification falling within the domain of customer satisfaction. the Cronbach's reliability coefficient for all the 8 items underlying three factors ranges from .634 to .872. The alpha reliability coefficients for F1: Friendliness (.872), F2: Sufficiency (.783) and F3: Problem solving approach (.778) is higher than the criteria of .77 obtained by Gordon and Narayanan (1984) indicating high consistency. The reliability and adequacy of sample size to yield distinct and reliable factors is further demonstrated through Kaiser-Meyer-Olkin measure of sampling adequacy that is .848 and all factors loadings are greater than 0.50.

The six factors obtained alpha reliability, higher or equal to 0.50 and satisfactory KMO value at .848, indicating significant construct validity of the construct (Hair et al., 2009).

EFA with regard to customer loyalty

This dimension resulted into two factor solution with 52.960% of the total variance explained, KMO value of .699 and Bartlett value of 1863.511. The factor loadings ranges from .510 to .697 and communalities from .607 to .839.

A brief description of factors emerged are as under:

Factor 1: Tolerance: This factor consists two items only i.e., "You can tolerate minor mistakes of staff of cooperative banks and their action do not affect your loyalty negatively" and "You will recommend cooperative banks to your friends and relatives" with mean values 3.17 and 3.26, factor loadings .755 and .825 and communalities .639 and .713 respectively. This factor revealed that the customer

of the cooperative banks have lot of patience to tolerate the minor mistakes committed by the employees of the bank. They believed that these mistakes of the employees do not affect their loyalty towards the bank. They pointed out that in future they will recommend this bank to their friends and relatives.

Factor2: Loyalty: This factor consists of three items i.e., "You have been loyal to your bank", "Your loyalty to cooperative banks has been constantly increasing over time", and "You are loyal to cooperative bank and consider it best". The mean values for the aforesaid items ranges from 3.73 to 4.10, factor loadings between .616 to .869 and communalities from .609 to .841. This factor connotes that loyalty of customers of cooperative banks has been constantly increasing and they are considering it best.

Reliability and Validity

Two factors emerged after scale purification falling within the sphere of customer loyalty. The Cronbach's reliability coefficient for all the 05 items underlying two factors ranges from .791 to .866. The alpha reliability coefficients for F1 i.e., Tolerance (.791) and F2: Loyalty (.866) is higher than the criteria of .77 obtained by Gordon and Narayanan (1984) indicating high consistency. The reliability and adequacy of sample size to yield distinct and reliable factors is further demonstrated through Kaiser-Meyer-Olkin measure of sampling adequacy that is .699 and all factors loadings are greater than 0.50.

The four factors obtained alpha reliability, higher or equal to 0.50 and satisfactory KMO value at .699, indicating significant construct validity of the construct (Hair et al., 2009).

EFA with regard to trust and social bonds

Regarding trust and social bonds, the KMO value stood at .679 and Bartlett's value at 6487.462 (p = 0.000). Out of 19 statements which are actually kept in the construct of trust and social bonds, the Principal Component Analysis along with Varimax Rotation brought to the level of 12 statements and resulted into three factor solution with 60.196 % of the total variance explained. The factor loadings ranges from 0.593 to 0.865 and communalities from .612 to .849.

A brief description of factors emerged are as under

Factor 1: Fairness: This factor consists of three items namely, "Your bank treat you in a fair and equal way", "Your bank is acting from customer perspectives", and "Cooperative banks find solutions for customer problems". The mean values of this factor ranges between 2.87 to 3.26, factor loadings between .755 to .829 and communalities from .631 to .715. this factor underlines that cooperative banks

should treat their customer in a fair and transparent manner and must find solutions to their problems while delivering financial services.

Factor 2: Social bonds: This factor comprised of four items namely, "Cooperative banks keeps full transparency about products and services including risks and costs", "Cooperative banks did not behave opportunistically at your expenses", "Due to financial crises, trust in cooperative banking system is declining" and "You and your bank have deep social bonds". The mean values of this factor ranges between 2.89 to 3.03, factor loadings between .612 to .865 and communalities from .612 to .841. The respondents perceive that cooperative bank must keep full transparency about financial products and services and should not behave opportunistically to develop trust & social bonds between them.

Factor 3: Commitment: This factor emerges with five items namely, "Your are committed to your bank", "You are confident that your interest are well served by the bank", "You have full trust on the employees of the bank", "You are happy with the services of the cooperative banks", and "You will recommend cooperative banks to your friends and relatives". The mean values of this factor ranges between 3.07 to 4.10, factor loadings between .593 to .821 and communalities from .649 to .849. This factor connotes that customers have full trust on employees of the bank and they are committed to their bank. They pointed out that they are happy with the services of the cooperative bank and feels that their interest is fully protected by the bank.

Reliability and Validity

Three factors emerged after scale purification falling within the domain of trust and social bonds. the Cronbach's reliability coefficient for all the 12 items underlying three factors ranges from .697 to .892. The alpha reliability coefficients for F1 i.e., Fairness (.892); F2: Social bonds (.786) is higher than the criteria of .77 obtained by Gordon and Narayanan (1984) indicating high consistency. The alpha reliability coefficients for other factors such as F3: Commitment (.697) is also closer to .7 i.e., at a minimum acceptable level of 0.50 as recommended by Brown et al. (2001) and Kakati & Dhar (2002) thereby obtaining satisfactory internal consistency. The reliability and adequacy of sample size to yield distinct and reliable factors is further demonstrated through Kaiser-Meyer-Olkin measure of sampling adequacy that is .679 and all factors loadings are greater than 0.50.

The six factors obtained alpha reliability, higher or equal to 0.50 and satisfactory KMO value at .679, indicating significant construct validity of the construct (Hair et al., 2009).

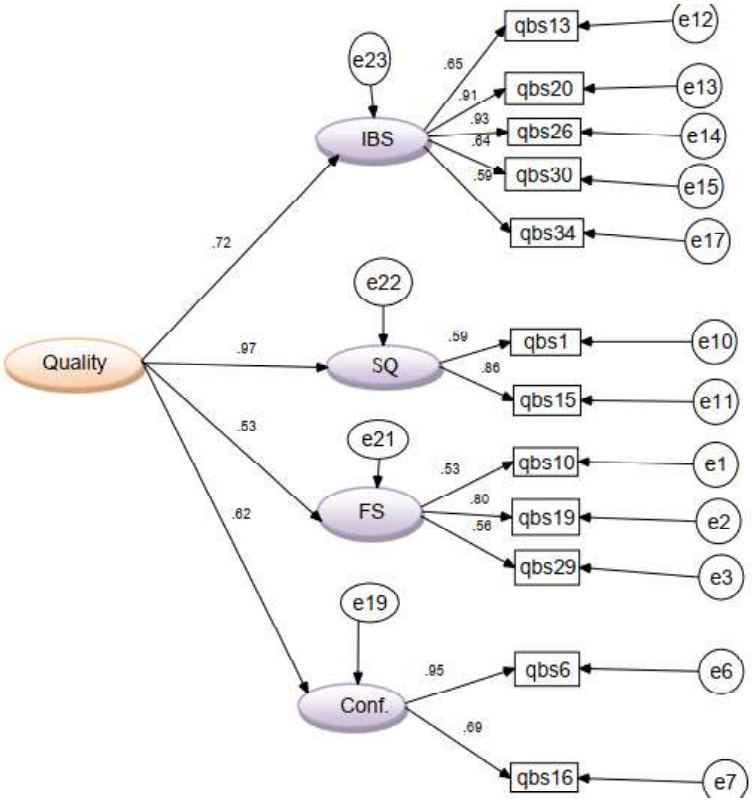

Figure 1: CFA Model for quality dimension*

Note: IBS=Innovative banking service, SQ=Service quality, FS=Financial security,Conf.= Confidentiality, qbs13=The bank provides financial services with modern technology i.e ATM, Smart card, Mobile banking etc., qbs20=The bank has sufficient number of ATMs per branch, qbs26=The range of service provided by cooperative bank is in consistent with the latest innovations in banking services, qbs30= Cooperative bank adopts innovative applications of ICT for delivery of financial services, qbs34= Cooperative bank has increased the ability of individuals to access financial services and products, qbs1=Cooperative bank enables the individuals to cope with unforeseen expenses,qbs15= Quality of service provided by cooperative bank is excellent, qbs10=The bank contacts me every time it is useful, qbs19=The bank creates a feeling of security among its customers, qbs29= Cooperative bank enables the individuals to invest in a business venture or property, qbs6= The bank maintains the confidentiality of its customers , qbs16= I deposit money in Cooperative bank without any doubt and e1-e23 are error terms.

Confirmatory Factor Analysis (CFA)

In the present study, second order CFA is performed to assess the fitness, reliability and validity of four measured constructs i.e., quality of cooperative banking services, customer satisfaction, customer loyalty and trust & social bonds. All the CFA models have satisfied the required condition of recognition. The

indices like GFI, AGFI, TLI and CFI are above .90, whereas badness of fit indices i.e., RMSEA of all the constructs is below .08 and Chi-square statistics (CMIN/d.f) is less than recommended 5.0 level (Bagazzi & Yi, 1988).

CFA model for quality of cooperative banking services

Second order CFA (Figure 1) is performed on the quality dimension with four factors i.e., innovative banking services (IBS), service quality (SQ), feeling of security (FS) and confidentiality (Conf). Two factors namely, responsiveness and trustworthiness have been deleted because their regression weight are below .50. All other indicators in this model have regression weight above 0.5. The model is found to be as fit (CMIN/DF = 3.81, RMR = .048, GFI = .915, AGFI = .921, CFI = .939, TLI = .934 and RMSEA = .084, Hair et al., 2009, p. 770). The model has been found to be valid and reliable. The alpha value is .847 whereas composite reliability came out to be .887 thereby indicating that all items are reliable. The model has been proved valid, as AVE came out to be .533.

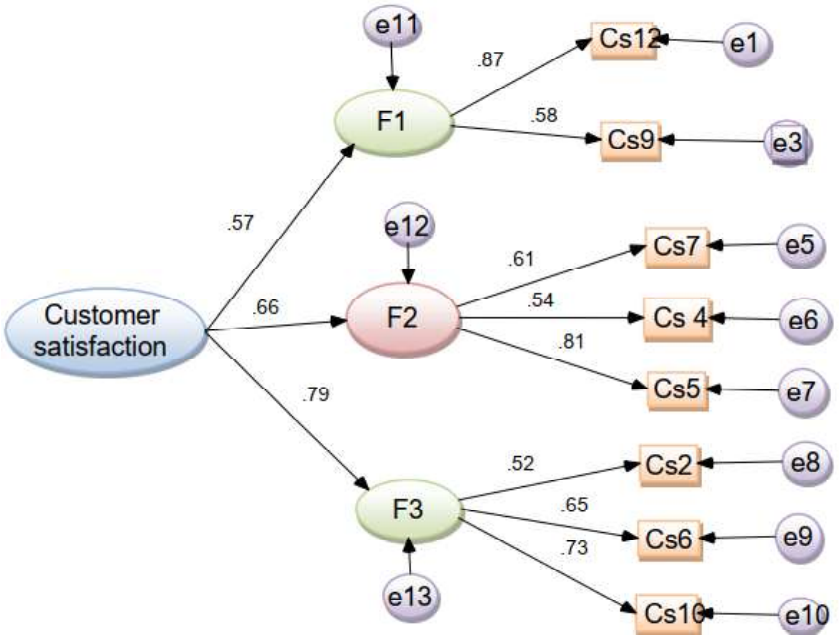

Figure 2: CFA Model for customer satisfaction*

F1= Friendliness, F2= Sufficiency, F3= Service delivery time, Cs12=Cooperative banks satisfy your needs fully, Cs9=Staff members of cooperative banks is courteous and friendly in handling your grievances, Cs7=You are satisfied with the number of services offered by cooperative banks, Cs4=The bank has sufficient and comfortable seating arrangements, Cs5=Help desk/assisting staff is available for filling withdrawal/deposit form, CS2=The branch staff are willing to listen and respond to your needs on time, Cs6=Employees are helpful in making information available regarding new schemes, Cs10=Bank follows quick problem solving approach and e1-e13 are error terms.

CFA model for customer satisfaction

CFA on customer satisfaction construct resulted into three factors, viz friendliness, sufficiency and service delivery time (Figure 2). All indicators in this model have factor loadings greater than 0.5. The model is found to be as fit (CMIN/DF = 3.78, RMR = 0.03, GFI = .930, AGFI = .933, CFI = .941, TLI = .924, RMR=.053 and RMSEA = .081, Hair et al., 2009).The model has been found to be valid and reliable. The alpha value is .866, whereas composite reliability came out to be .926 thereby indicating that all items are reliable. The model has been proved valid, as AVE came out to be .543.

CFA model for customer loyalty

With regard to customer loyalty, second order CFA (Figure 3) is performed with two factors i.e., tolerance and loyalty. All indicators in this model have regression weight above 0.5. The model is found to be as fit (CMIN/DF = 2.45, RMR = .018, GFI = .911, AGFI = .930, CFI = .916, TLI = .951 and RMSEA = .080, Hair et al., 2009). The model has been found to be valid and reliable. The alpha value is .866, whereas composite reliability came out to be .944 thereby indicating that all items are reliable. Model has been proved valid, as AVE came out to be .531.

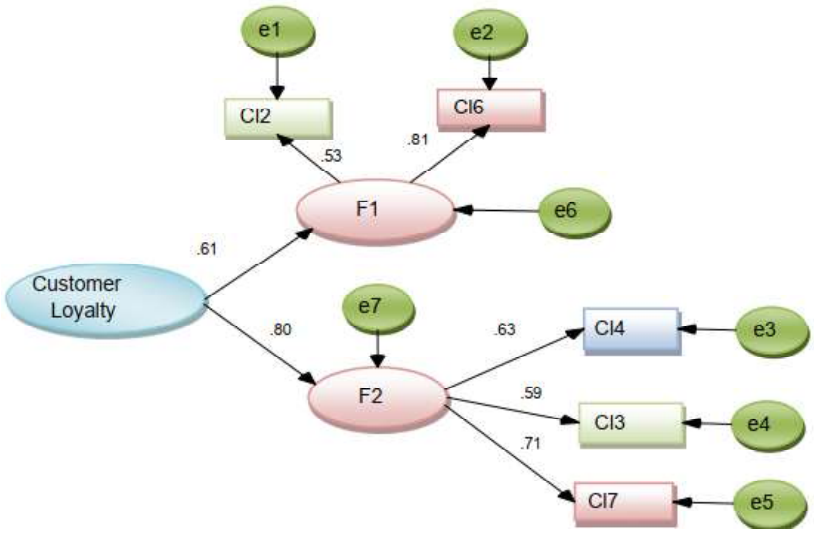

Figure 3: CFA model for customer loyalty*

Note: F1=Tolerance, F2= Loyalty, CI12=You can tolerate minor mistakes of staff of cooperative banks and their action do not affect your loyalty negatively, CI16=You will recommend cooperative banks to your friends and relatives, CI4=You have been loyal to your bank, CI3=Your loyalty to cooperative banks has been constantly increasing over time, CI7=You are loyal to cooperative bank and consider it best and e1-e7 are the error terms.

CFA model for trust and social bonds

As far as trust and social bonds is concerned, second order CFA (Figure 4) is performed with three factors and the model has been found valid and reliable. The result of CFA shows the model fully fits the data, CMIN/DF = 3.28, GFI = .921, AGFI = .955, TLI = .913, CFI = .931, RMR= .042 and RMSEA = .084). The alpha value is .889, whereas composite reliability came out to be .952 thereby indicating that all items are reliable. The model has been proved valid, as AVE came out to be .592.

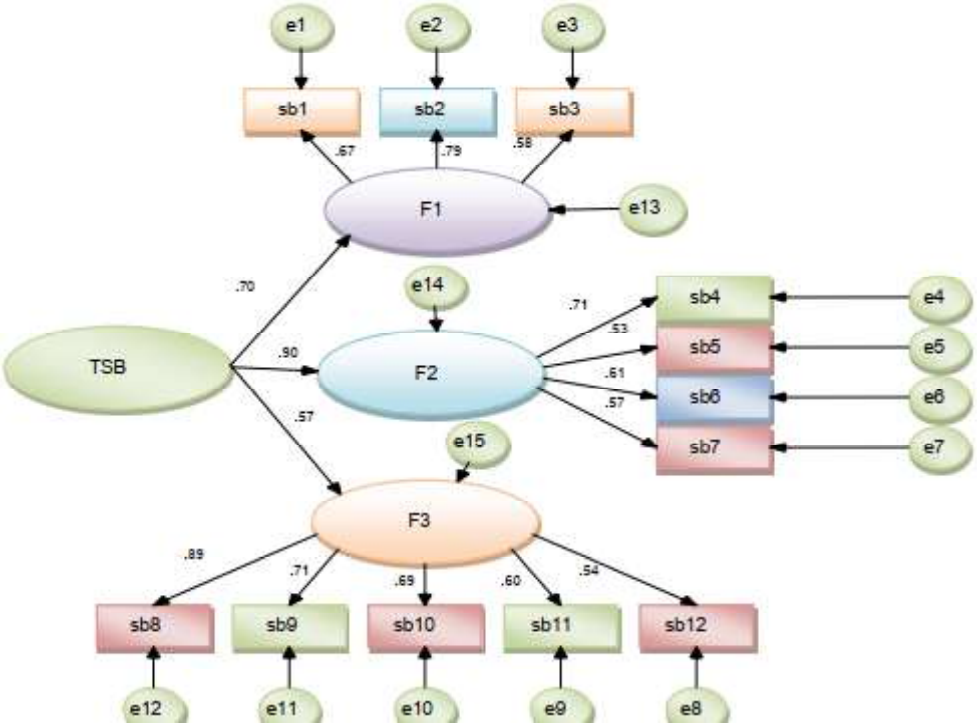

Figure 4: CFA Model for the Dimension of Trust and Social Bonds*

Note: TSB= Trust and social bonds, F1=Fairness, F2= Social bonds, F3=Commitment,sb1=Your bank treat you in a fair and equal way, sb4=Your bank is acting from customer perspectives, sb3=Cooperative banks find solutions for customer problems, sb8= Cooperative banks keeps full transparency about products and services including risks and costs, sb5=Cooperative banks did not behave opportunistically at your expenses, sb9=Due to financial crises, trust in cooperative banking system is declining, sb7=You and your bank have deep social bonds, sb13= Your are committed to your bank, sb2=You are confident that your interest are well served by the bank, sb10=You have full trust on the employees of the bank, sb11=You are happy with the services of the cooperative banks, sb12= You will recommend cooperative banks to your friends and relatives and e1-e15 are the error terms.

Structural Equation Modeling (SEM)

After applying CFA and checking for reliability and validity, SEM is applied by using AMOS 16.0 to assess the fitness of structural model. The SEM technique is used to test the main hypotheses proposed in the study. As suggested by Hair et al. (2009), the proposed theoretical model is modeled in a recursive manner to avoid problems associated with statistical identification.

The structural relationship between latent construct represented by single headed straight arrows are specified according to the hypotheses established. In summary, the present structural model includes (a) path from quality of cooperative banking services (QBS) to customer satisfaction (CS) (b) path from quality of cooperative banking services (QBS) to trust and social bonds between customer and bank employees (TSB) (c) path quality of cooperative banking services (QBS)) to customer loyalty (CL) (d) path from trust and social bonds (TSB) to customer satisfaction (CS) and (e) path from customer satisfaction (CS) to customer loyalty (CL). The complete SEM model is tested and the fit indices for the model demonstrated a better model fit (Figure 5) for hypothesis testing (CMIN/DF= 4.431, GFI = .945, AGFI = .896, NFI = .934, TLI = .920, CFI =.915, RMSEA = .088)

Hypotheses Testing

On the basis of SEM results, the framed hypotheses have been tested and the results are as under:

H_1: Innovative banking services, service quality, feeling of security, responsiveness, trustworthiness and confidentiality are the significant predictors of quality of cooperative banking services.

It becomes evident from the SEM results (Figure 5) that innovative banking services (ß = .63, p = .000), service quality (ß = .56, p = .000), feeling of security (ß = .58, p = .000), responsiveness (ß = .64, p = 000), trustworthiness (ß = .72, p =000) and confidentiality (ß = .60, p =000) significantly predicts quality of banking services. Thus, hypotheses H_1 is supported.

H_2: Quality of cooperative banking services significantly affects customer satisfaction.

SEM results showed that quality of cooperative banking services has positive and direct impact on customer satisfaction (ß = .84, p = .000). Therefore, hypotheses H_2 is supported.

H_3: Quality of cooperative banking services significantly affects trust and social bonds between customer and bank employees

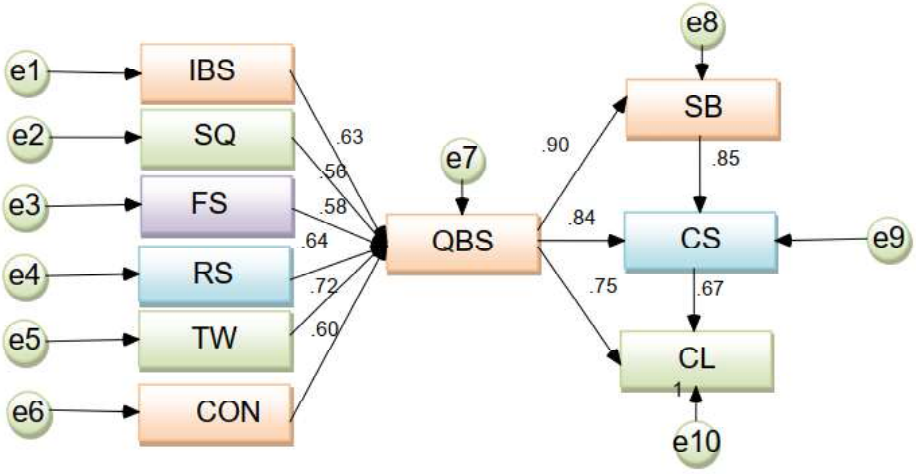

Figure 5: Overall Sem Model*

Note: IBS= Innovative banking services, SQ= Service quality, FS= Feeling of security, RS= Responsiveness, TW= Trustworthiness, CON= Confidentiality, QBS= Quality of banking services, SB= Social bonds, CS= Customer satisfaction, CL= Customer loyalty and e1-e10 are the error terms.

As apparent from SEM result, it is found that quality of cooperative banking services significantly affects trust and social bonds between customer and bank employees (ß = .90, p = .000). Hence, H_3 is supported.

H_4: Quality of cooperative banking services has significant impact on customer loyalty.

SEM results depicts that quality of cooperative banking services has positive and direct impact on customer loyalty (ß = .75, p = .000). Therefore, hypotheses H_4 is supported.

H_5: Trust and social bonds between the customer and bank employees has direct impact on customer satisfaction.

SEM results indicates that trust and social bonds between the customer and bank employees have positive and direct impact on customer satisfaction (ß = .81, p = .000). Therefore, hypotheses H_5 is supported.

H_6: Customer satisfaction significantly affects customer loyalty.

It is evident from SEM results that customer satisfaction significantly affects customer loyalty (ß = .67, p = .000). Hence, H_6 is supported.

Output from One-Way Anova

Output from One-Way ANOVA depicts insignificant mean difference exist among the perception of beneficiaries as value of p is more than 0.05 with regard to age (F=2.22, Sig.=.096) and purpose of loan (F=.916, Sig.=.493) from Cooperative banks, whereas occupation (F=21.18, Sig.=000), qualification (F=3.32, Sig.=.006), religion (F=31.98, Sig.=.000), district (F=147.88, Sig.=.000) and monthly income (F=6.04, Sig.=.000) shows significant mean difference as the value of p is less than 0.05. The demographic profile wise analysis is as under:

Age-wise analysis reveals insignificant mean differences in responses of the beneficiaries belonging to different age groups (F=2.22, Sig.=.096) with regard to quality of banking services. The output of one way ANOVA for individual factors relating to quality of banking services shows insignificant mean difference for innovative banking services (F=1.98, Sig.=.115), service quality (F=1.42, Sig.=.238), feeling of security (F=1.56, Sig.=.197), confidentiality (F=2.11, Sig.=.098) & trustworthiness (F=2.32, Sig.=.069) and significance mean difference for responsiveness (F=2.97, Sig.=.031). Overall, age-wise analysis depicts that the beneficiaries above 50 years of age (4.04) are more satisfied, followed by beneficiaries in the age group of 40-50 years (4.02), 30-40 years (3.97) and 20-30 years (3.96) beneficiaries regarding quality of Cooperative banking services.

Occupation-wise analysis for quality dimension shows the variance of the group is not same as the value of p is less than 0.05 indicating significant mean difference exist among respondents belonging to different occupations (F=21.18, Sig.=000). The ANOVA results for individual factors with regard to quality of banking services shows significant mean difference for innovative banking services (F=31.92, Sig.=.000), service quality (F=2.78, Sig.=.040), feeling of security (F=28.69, Sig.=.000) & responsiveness (F=3.60, Sig.=.013) and insignificant mean difference for confidentiality (F=2.29, Sig.=.077) & trustworthiness (F=1.26, Sig.=.286). Overall ANOVA results reveals that farmers are more satisfied as they have accorded highest occupation wise factorial mean score (4.08) followed by business man (4.07), service man (4.02) and others (3.85) beneficiaries regarding quality of Cooperative banking services.

Qualification-wise analysis reveals insignificant mean differences in responses of the beneficiaries belonging to different qualifications (F=3.32, Sig.=.006) with regard to quality of banking services. The ANOVA results for individual factors with regard to quality of banking services shows significant mean difference for innovative banking services (F=3.67, Sig.=.003) & feeling of security (F=3.84, Sig.=.002) and insignificant mean difference for responsiveness (F=.94, Sig.=.452), service quality (F=.51, Sig.=.0772), confidentiality (F=.67, Sig.=.656) and trustworthiness (F=926, Sig.=.444). Qualification-wise analysis reveals that

postgraduate respondents are more satisfied (4.06) followed by graduate respondents (4.035), undergraduate (4.031), 10+2 (4.00), matriculate (3.96) and under matriculate (3.88) beneficiaries towards quality of banking services.

As far as religion is concerned, it is found that significant mean difference exists among respondents belonging to different religion as value of p is less than 0.05 (F=31.98, Sig.=000) in case of quality dimensions. The ANOVA results for individual factors with regard to quality of banking services shows significant mean difference for innovative banking services (F=25.14, Sig.=.000), service quality (F=12.28, Sig.=.000), feeling of security (F=13.57, Sig.=.000), responsiveness (F=4.99, Sig.=.002) and trustworthiness (F=12.65, Sig.=.000) and insignificant mean difference for confidentiality (F=2.01, Sig.=.111). Religion-wise analysis depicts that respondents belonging to Sikh religion (4.18) are more satisfied with quality dimension followed by respondents of other religion (4.14), Hindu (3.99) and Muslims (3.67) beneficiaries.

District-wise analysis depicts significant mean differences in responses of the beneficiaries belonging to district Jammu, Samba, Kathua, Udhampur and District Doda of J&K (F=147.88, Sig.=.000) with regard to quality dimension. The ANOVA results for individual factors with regard to quality of banking services shows significant mean difference for innovative banking services (F=2284.11, Sig.=.000), service quality (F=58.31, Sig.=.000), feeling of security (F=30.38, Sig.=.000), confidentiality (F=10.48, Sig.=.000) & trustworthiness (F=18.16, Sig.=.000) and insignificant mean difference for responsiveness (F=2.31, Sig.=.100). Disrict-wise analysis depicts that respondents belonging to district Jammu (4.20) are more satisfied with quality of banking services offered by cooperative banks followed by District Samba (4.09), Kathua (3.80), Udhampur (3.77) and district Doda (2.88) beneficiaries.

Income-wise analysis depicts significant difference exists among respondents belonging to different income groups as value of p is less than 0.05 (F=6.04, Sig.=000) in case of quality of banking services. The ANOVA results for individual factors with regard to quality of banking services shows significant mean difference for innovative banking services (F=2.43, Sig.=.046), service quality (F=4.88, Sig.=.001), feeling of security (F=4.08, Sig.=.003) and confidentiality (F=2.50, Sig.=.041) and insignificant mean difference for responsiveness (F=1.73, Sig.=.142) & trustworthiness (F=1.66, Sig.=.156). Income-wise analysis reveals that respondents falling above Rs.30,000 are more satisfied regarding quality of banking services as they have accorded highest mean score (4.09) followed by Rs.20,000-Rs.30,000 (4.02), Rs.10,000- Rs.20,000 (3.98), Rs.5,000-Rs. 10,000 (3.95) and up to Rs.5,000 (3.89) beneficiaries.

As far as purpose of loan is concerned, insignificant differences exists among respondents belonging to different categories of loans as value of p is more than 0.05 (F=.916, Sig.=.493) in case of quality of banking services. The ANOVA results for individual factors with regard to quality of banking services shows insignificant mean difference for innovative banking services (F=1.62, Sig.=.109) & responsiveness (F=1.74, Sig.=.096) and significant mean difference for service quality (F=2.72, Sig.=.009), feeling of security (F=4.02, Sig.=.000), confidentiality (F=2.82, Sig.=.007) & trustworthiness (F=3.64, Sig.=.001). Loan wise analysis reveals that beneficiaries who have obtained loan for marriage purpose (4.05) are most satisfied with regard to quality of Cooperative banking services followed by those who have obtained loan for starting business (4.01), others (4.00), education (3.98) agriculture (3.97), health (3.91) and dairy farming (3.89 beneficiaries regarding quality dimension.

Output from t-Test

Output from independent sample t-test measuring the significance of mean differences among male & female respondents and married and unmarried respondents shows significant mean difference with regard to customer loyalty and trust & social bonds as value of p is less than 0.05, whereas insignificant mean difference exist with regard to quality of banking services. Male respondents are found to be more pleased with regard to quality of banking services, as they have accorded highest mean score (3.83) than their female counterparts (3.37). The overall result shows insignificant mean difference between male & female as well as married and unmarried respondents.

So, on the basis of analysis, the hypothesis '*Respondents with different demographic profile differs in their perception regarding quality of cooperative banking services:* is accepted for occupation, qualification, religion, district and monthly income and rejected for age, gender, marital status and purpose of loan.

Conclusion and Strategic Implications

SEM results showed that innovative banking services (ß = .63, p = .000), service quality (ß = .56, p = .000), feeling of security (ß = .58, p = .000), responsiveness (ß = .64, p = 000), trustworthiness (ß = .72, p =000) and confidentiality (ß = .60, p =000) are the significant predictors of quality of banking services. Significant relationship observed between quality of cooperative banking services and customer satisfaction (ß = .84, p = .000), quality of cooperative banking services and trust & social bonds (ß = .90, p = .000), quality of cooperative banking services and customer loyalty (ß = .75, p = .000), trust & social bonds and customer satisfaction (ß = .81, p = .000) and finally, customer satisfaction and customer loyalty (ß = .67, p = .000). Insignificant mean difference observed between male

& female as well as married & unmarried respondents with regard to quality of cooperative banking services, as value of p is more than 0.05.

It is found that factors like queuing time, branch timings, branch location, lack of knowledge about the product, procedure for handling customer complaints, follow up time, attitude and behavior of bank employees are the root cause for customer dissatisfaction in cooperative banks. In order to ensure greater customer satisfaction, it is suggested that answering customer questions, handling their complaints and responding to specific needs of customers are important issues, which needs to be taken care of.

Limitations and Direction for Future Research

The in-depth analysis of the study is restricted to Jammu division of J&K only because of time & resource constraints, so it needs to be extended to other part of Jammu and Kashmir as well as other parts of the country to assess the perception of rural households with regard to quality of cooperative banking services. The present study is limited to cooperative banks only. In future similar studies could be conducted on other public and private sector banks for comparative analysis. The study is confined to the perception of rural households only, which in future could be carried further on the perception of urban households. Lastly, since all promising efforts are made to make the study valid and complete, yet the likelihood of prejudiced elucidation in some cases cannot be ruled out.

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A Comparative Study of Non-performing Assets of Public and Private Banking Sector

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Abstract: Nowadays Non-Performing Assets (NPAs) are important and burning issues and challenges in the banking sector. It is badly affecting the health of the banking sector and also the economy of the nations. Banks cannot book income on such assets and they have to make provisions as per IRAC norms of RBI. The sound financial position of a bank depends upon the recovery of loans or its level of Non-performing assets (NPAs). To improve the efficiency and profitability of banks the NPA needs to be reduced and controlled. Reduced NPAs generally give the impression that banks have strengthened their credit appraisal processes over the years and growth in NPAs involves the necessity of provisions, which bring down the overall profitability of banks. The problem of NPA is not limited to only any particular nation's banks, but it prevails in the entire banking industry in the world. The aim of this paper is to analyze the recent trend of NPAs in banking with reference to the Public and Private Sector Banks of India and also to find out the relationship between NPAs and profitability

Kew words: NPAs, Bank, Profitability, Trends, Return on Assets, Return on Equity.

Introduction

The Indian economy has had a pivotal role to play in the development process. With the ever-increasing need for the involvement of banks in the economic growth process, in recent times the issue of Non-performing Assets (NPAs) has assumed mammoth proportions. The recent developments in the form of more stringent Reserve Bank of India(RBI) guidelines and a greater push to declare stressed assets as NPAs have resulted in a drop in profits for all the banks across the spectrum as they have to create provisions for bad loans. Rising NPAs levels and fresh slippages across sectors reduced market confidence due to the slowdown in the global economy.

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The main function of a bank is to mobilize the public deposits and lend to the existing business. Since the independence, the Indian banking sector as is trying to retrieve the economy houses as well the new entrepreneurs for the development of the nation's industrial and economic progress from the trap of the underdevelopment and use some anti-poverty vaccines to reduce poor in the society. During this process of development, the bank has faced a big challenge that is known as the management of nonperforming assets (NPAs). Bank has been set up with the aim of lending loans and mobilizing funds in society. The loan is an asset for a bank because the interest received and repayments of principal create a stream of cash flow and interest also leads to making a profit for the bank. But, the management of loans and advances is becoming a horrible task in the banking sector all over the world. India is not exception. The number of defaulters as well as the loan and advance amount in the banking sector increases day by day. The apex body of the banking sector Reserve Bank of India (RBI) has recommended various steps to reduce NPAs. But till the virus, NPA is a significantly active and foremost headache in India because it has dual effects like generating income from these advances are ceases and the bank has to create a provision for loan losses which are set aside to cover potential losses. Once the actual losses from defaulted loan advances are determined, they are written off against earnings. Therefore to improve the efficiency and profitability of banks the NPAs need to be reduced and controlled.

Review of Literature

For any type of research, fair ideas must be kept in the mind. The literature review gives a fair idea of areas of research. For fair and adequate research we have reviewed the following kinds of literature. Bhatia (2007) found in his study that the NPAs are the biggest challenge for the banking sector. The level of NPAs is one of the drivers of the financial stability and growth of the banking sector. His study is based on only one Public, one Private, and one Foreign Bank. NPAs are considered an important parameter to judge the performance and financial health of banks. Ahmad (2009) described in his study that effective management is essential to control of NPAs and speed up the growth of profitability of the public sector. Satpal (2014) examined the sample consisting of three Public sector banks - State Bank of India, Corporation Bank, Bank of Baroda and three Private sector Banks - ICICI Bank Ltd, Axis Bank Ltd, and HDFC Bank based on data for the period of 5 years from the financial year 2009-to2013 and concluded that the extent of NPA is comparatively very high in public sectors banks as compared to the private bank. Joseph and Prakash (2014) have advocated the trends of NPA in the banking industry, and the factors that mainly contribute to NPA rising in the banking industry. Japan and Singla (2016) have dealt with recent trends in non-performing assets (NPAs) of different categories

of Indian banks viz., public sector banks, private sector banks, and foreign banks. They found in their study that NPAs in the Indian banking industry is continuously increasing from the period 2008-09 to 2013-14 followed by the global financial crisis. Swain and Das (2018) evaluated that in Private sector banks increase in NPA leads to a decrease in Profit and in foreign banks NPA has a less significant effect on Profitability.

Non-performing assets are one of the major concerns for banks in India. The Indian banking sector has been facing serious problems in raising Non-Performing Assets (NPAs). The NPAs growth has a direct impact on the profitability of banks. Non-performing assets are one of the major concerns for banks in India. The trends of NPAs of Private Sector Banks are to be more stable in comparison to the Public Sector Banks and more conscious. The growth of NPAs in Public sector Banks is dramatically upward. Therefore it is the significance of the study that more studies in different ways should be done to see the trend of NPAs. No comparative study has been done between the five top Public Sector bank (State Bank of Indi, Bank of Baroda, Punjab National Bank, Canara Bank, And Union Bank) and the five top private sector banks (HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, and Yes Bank) yet now. Hence an attempt of comparative study of top five Public Sector banks and top five private sector has been made to see the trends of NPAs during eight years from 2010-11 to 2017-2018.

Objective of the Study

The objective of this paper is to analyze the impact of Non Performing Assets on Return of Public Sector Banks and Private Sector Banks

Hypotheses

H_1-a: There is a significant relationship between non-performing assets and Return on Average Assets of Public Sector Banks.

H_1-b: There is a significant relationship between non-performing assets and Return on Average Assets of Private Sector Banks.

Research Methodology

To ascertain the above mentioned objectives, secondary data has been collected from the published report of Reserve Bank of India (RBI), annual report of listed public and private sector bank in India. Ten banks i.e. State Bank of India, Bank of Baroda, Punjab National Bank, Canara Bank, Union Bank ,HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, Yes Bank have been selected for the purpose of study. Out of these ten Indian banks, first five banks belong to the

public sector category and rest are under the category of private sector banks in India. The study period is from 2010-11 to 2017-2018. Regression analysis is performed to predict the effects of NPAs on Bank's profitability of Public Sector Banks and Private Sector Banks. Profitability of the banking sector are measured by two important dimensions namely, Return on Average Assets (ROA) and Return on Equity (ROE). The Non-Performing assets are measured by NNPAs ratio (Net Non Performing Assets to Net Advances). Profitability ratios have been taken as dependent variable and on the other hand NNPAs have been considered as independent variables in the regression analysis for this study. ROAPB and ROEPB are represented Return on Assets (ROA) and Return on Equity (ROE) of Public Sector banks where as ROAPT & ROEPT indicate the Return on Assets (ROA), Return on Equity (ROE) of Private Sector Banks. For data analysis the Statistical Package for Social Sciences (SPSS) 22 version has been applied.

Parameter

Regression Model 1a: $ROAPB = \alpha + \beta.NPA + \varepsilon$

Regression Model 1b: $ROEPB = \alpha + \beta.NPA + \varepsilon$

Where, Dependent Variables are ROA & ROE and Independent Variables is NPA.

Regression Model 2a: $ROAPV = \alpha + \beta.NPA + \varepsilon$

Regression Model 2b: $ROEPV = \alpha + \beta.NPA + \varepsilon$

Where, Dependent Variables are ROA and ROE and Independent Variables is NPA.

Limitation of the Study

The research is based on secondary data which includes annual reports of above mentioned banks and information derived from the different journals and website. The study is based on top five Public Sector Banks (State Bank of Indi, Bank of Baroda, Punjab National Bank, Canara Bank, Union Bank) and top five Private Banks (HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, Yes Bank) only.

Analysis and Interpretation

The Fig.1.a represents the trends of Non-Performing Assets (NPAs) of five top public sector banks for the period of 2010-11 to 2017-18. It is very significant and clearly depicted in the above picture that NPAs are continuously upward rising in the public sector banks in India during the last eight years and NPAs have been averagely increased about 7 times i.e., total advances in the public sector are skyrocketing.

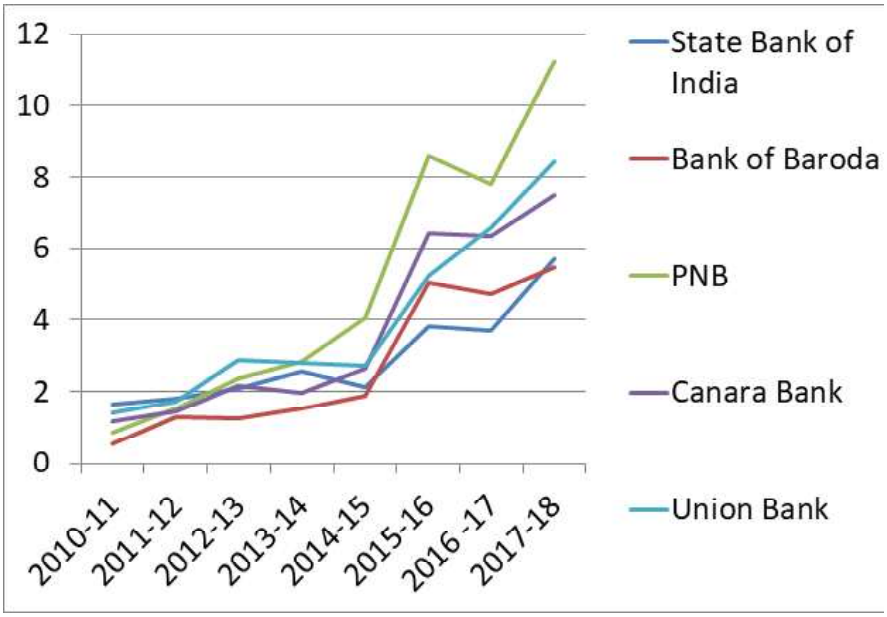

Figure 1a: NPA trend of five top public sector bank

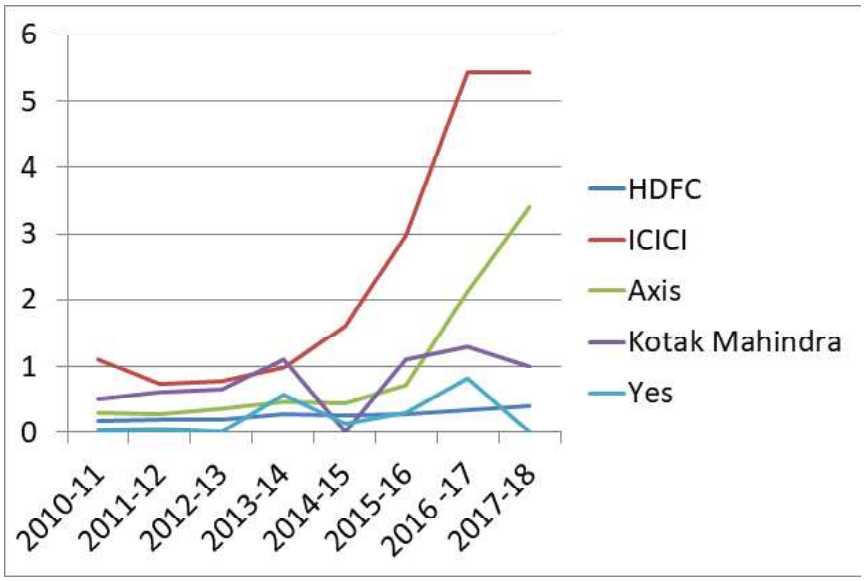

Figure 1.b: Trend of non performing assets of five top private sector bank

The above figure 1.b represents the trends of Non-Performing Assets (NPAs) of five top Private Sector Banks for the period of 2010-11 to 2017-18. It is very significant and clearly depicted in the above picture that NPAs of ICICI and Axis bank are continuously upward rising during the study period. The scenario of NPAs in the remaining three banks is quite surprising and it is efficiently managed the total advances during the last eight years. Thus we can say that the trends of Non Performing Assets (NPAs) of Private Sector Banks are significantly stable during the study period. Thus, the positions of NPAs in Private Sector Banks are more favourable towards the development of banks in India and most Private Banks are managing their advances in a systematic and efficient manner. Therefore, it can be concluded that Public Sector Banks are rigorously affecting the NPAs and continuously scarifying the profitability of these advances.

Table1: Regression Result for Public sector banks

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B.	Standard error	Beta		
Research Model 1a	(Constant)	.76	.1.89	-.466	4.028	.000
	NPA	1-2.698	..000		-3.248	.002.
	R=. 466 R^2 =. 217 F=10.547, P value= .002					
Dependent variable = Return on Average Assets, Independent variable = Net Performing Assets						
Research Model 1b	(Constant)	10.540	2.696	-.182	3.910	.000
	NPA	.000	.000		-1.142	.026
	R= .182, R^2 = .33, F=1.303, P value= .026					

Dependent variable = Return on Equity, Independent variable = Net Performing Assets

Table.1 shows the results of regression analysis of listed Indian Public Sector Banks. Research model 1.represented the output of regression analysis, where the dependent variable (DV) is Return on Average Assets (ROA) and the independent variable (IV) is the ratio of Net NPA to Net advances (NPA). The model is: ROAPB = $\alpha + \beta$ (NPA) + ε. The F value of this model is10.547 which is significant at 5% level of significance. The R-value (.466) indicates the correlation between variables and value of R square (.217) implies that ratio of Net NPA to Net advances explain 21.7% of the total variance. The negative sign of regression coefficient indicates that there is a negative relationship between the Return on Average Assets and Net Performing Assets. Thus, it can be concluded that the NPAs have an inverse impact on the Return of Assets (ROA) i.e., if NPAs of the Public Sector Banks decrease, the profitability will increase while other factors will remain unchanged or if the NPA of the Public sector Bank increases the

profitability will go down when other factors will remain same. Similarly, research model 1b represents the result of regression analysis between the Return on Equity (ROE) and ratio of Net NPA to Net advances (NPA). The model is ROEPB = 5ØüÞ + 5ØýÞ(NPA) + 5Øß, where Dependent Variable is ROE and Independent Variable is ratio of Net Non-Performing Asset to Net advances (NPA). The F value of this model is 1.303 which is significant at 5% level of significance. The R value (.182) signifies correlation between DV and IV. On the other hand, value of R2 (.33) indicate that ratio of Net Non-Performing Asset to Net advances (DV) explain almost 33% of the total variance. The negative sign of regression coefficient indicates that there is an inverse relationship between the DV and IV. Thus, it can be concluded that the NPA has an inverse relation with the Return on Equity (ROE) i.e., if NPA of the Public sector Bank increases the profitability will go down when other factors will remain same or if NPAs of the Public Sector Banks decreases, the profitability will increase when other factors will remain unchanged.

Table 2: Regression result for private sector bank.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B.	Standard Error	Beta		
Research Model 2a	(Constant)	1.790	.1.89	-.621	22.398	.000
	NPA	-.185	..000		-5..350	.000.
R=.655. R square =. .430 F=28.679 , P value = .000						
Dependent variable = Return on Average Assets, Independent variable = Net Performing Assets						
Research Model 2b	(Constant)	18.373	.059	-.655	30.114	.000
	NPA	-2.789	.039		-4.884	.000
R= .621 R square =.386, F=23.854, P value = 000.						
Dependent variable = Return on Equity, Independent variable = Net Performing Assets						

Table 2 shows the results of the regression analysis of the top five Private Sector Banks. Research model 2a represented the output of regression analysis, where the Dependent Variable (DV) is Return on Assets (ROA) and the Independent Variable (IV) is a ratio of Net NPA to Net advances (NPA). The model is: ROAPV = α + (NPA) + ε. The F value of this model is 28.769 which is significant at a 5% level of significance. The R-value (.655) indicates that moderate correlation between variables and value of R2 (.430) implies that ratio of Net NPA to Net advances explains 43% of the total variance. The negative sign of the regression coefficient indicates that there is a negative relationship between the DV and IV. Thus, it can be concluded that the NPAs have an inverse impact on Return on Assets. Similarly, research model 2b represents the result of regression analysis between the Return on Equity (ROE) and ratio of Net NPA to Net advances

(NPA). The model is ROEPV= $\alpha + \beta$ (NPA) + ε, where Dependent Variable is ROE and Independent Variable is ratio of Net Non-Performing Asset to Net advances (NPA). The F value of this model is 23.854 which is significant at a 5% level of significance. The R-value (.621) signifies a correlation exists between DV and IV. On the other hand, the value of R2 (386) indicates that the ratio of Net Non-performing Assets to Net advances (DV) explains almost 39 % of the total variance. The negative sign of the regression coefficient indicates that there is an inverse relationship between the DV and IV. Thus, it can be concluded that the NPA has an inverse relation with the Return on Equity (ROE).

Table 3: Hypotheses testing results

Types	Hypotheses	Indicators Dependent Variable	Measured Model	Sig. (2-tailed) P value At 5% level	Results Hypotheses accepted or rejected subject to condition. .P<.05=Accepted P><.05= Rejected
H_1-a	There is significant relationship between Non- Performing Assets and Return on Average Assets of Public Sector Banks.	ROA	ROAPV = α + (NPA) +ε.	.002	Supported
	There is significant relationship between Non-Performing Assets and Return on Equity of Public Sector Banks.	ROE	ROEPB = $\alpha + \beta$(NPA) +ε.	..026	Supported
H_1-b	There is significant relationship between Non- Performing Assets and Return on Average	ROA	ROAPV = α + (NPA) + ε.	.000	Supported
	There is significant relationship between Non-Performing Assets and Return on Equity of Private Sector Banks.	ROE	ROEPV= $\alpha + \beta$(NPA) + ε,	.000	Supported

Regression Model p <.05 in all four regression models and the corresponding p-value is highly significant. Therefore, all alternative hypotheses are supported.

Thus, the finding of the study revealed that NPAs has an inverse impact on the Return of Assets (ROA) as well as Return on Equity in both sector banks i.e. if NPAs decreases, the profitability will increase while other factors will remain

unchanged or if NPAs increases the profitability will go down when other factors will remain same.

Conclusion and Implications

It is found that the trends of NPAs of Private Sector Banks are to be more stable in comparison to the Public Sector Banks and more conscious during the study period. The growth of NPAs in Public Sector Banks is the dramatically upward average of approximately seven times. It is also revealed in the study that the Non-Performing assets have an adverse impact on the profitability for both types of banks Public Sector Banks as well as Private Sector Banks and it creates more serious problems in public sector banks rather than the private sector banks. The positions of NPAs of private sector banks are more favourable towards the development of banks in India and most of the private banks are managing their advances in a systematic and efficient manner. Therefore, it can be concluded that public sector banks are rigorously affecting the NPAs and continuously scarifying the profitability of these advances. In a nutshell, it is said that the profitability of the bank gets upward trends if there is a downward movement of the Non-performing Assets in the bank and vice versa.

Therefore, the management of the banking sector more specifically public banks should take some preventive and recovery strategies to minimize and control nonperforming assets. Most other countries in the world have used structures like Assets Restructuring Companies (ARCs) to solve their NPAs problem.RBI has also tried to focus on ARCs to help banks in solving the problem of NPAs. However, they have found only limited success. Hence we will look at issues related to ARCs and how we can create an enabling environment in India to aid in the growth of ARCs, thereby contributing to the long-term focus of weeding out NPAs

Further Scope of the Study

The research is based on only the top five Public Sector Banks as well as top five Private Sector Banks. Researchers can opt more for Public sector banks as well as Private Sector Banks. The research is limited to eight years only i.e.2010-11 to 2017-18. Further research can be done after the period of 2017-18. Researchers can also opt to study the trend of NPAs at the District Level, State level, and Regional levels.

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Marketing Orientation of Farmers Towards Organic Produce: Study of Indian Himalayan States

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Abstract: Modern agriculture which uses chemical fertilizers, pesticides, and high-yielding variety seeds, is being practiced extensively in various countries of the world. Nonetheless, the overindulgence of pesticides has resulted in the residue of pesticides above the minimum levels in eatables and it also inflicts massive ecological costs in long run. Organic farming, with its prominence on stewardship of natural reserves, achieves importance in this perspective. This article attempts to throw light on the attitude and opinion of producers and marketing strategies towards organic produce. Multi-stage purposive sampling is used to collect the data and further, analyzed by operationalizing factor analysis and ANOVA. Results of the study support the established facts that at the initial stage of organic farming yield/production of crops declines but after a period of time farmers start to get as much yield as conventional farming from the same size of farm. The study indicates that organic producers are not aware of the multiple and sustainable benefits of organic farming.

Keywords: Organic products, organic producers, marketing strategies

Introduction

The increasing population across the globe, which has doubled in the last half of the 20th Century, has thrown a new challenge of hunger before mankind. Furthermore, the world population is expected to double by the end of the 21st century. Major contributors to the rising population and victims of hunger are the developing countries. To tackle the problems of hunger, modern agriculture which uses chemical fertilizers, pesticides, and high-yielding variety seeds, is

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being practiced extensively by various countries of the world. Nonetheless, the overindulgence of pesticides has resulted in the residue of pesticides above the minimum levels in eatables and it also inflicts massive ecological costs in long run (Pingali, 2012). The same will result in harmful outcomes and the deprivation of natural reserves, contamination, desertification, and unfavorable communal wellbeing.

India is not an exception in this case and practicing modern agriculture to meet the ever-increasing demand for its food grains. Organic farming, with its prominence on stewardship of natural reserves, achieves importance in this perspective. After 2005, accentuation shifted to organic farming keeping in view goals of sustainable and eco-friendly agriculture. To be acquainted with organic farming, the Ministry of Agriculture had developed the first-ever national-level organic farming policy in 2005 (GoI, 2005). Positive policy measures of the government of India have drawn the attention of farmers towards organic farming (Manaloor *et al.*, 2015, Khurana and Kumar, 2020). Organic farming is one of the tried and tested tools of the sustainable ecosystem as it conserves natural resources and biodiversity thus reducing the burden on energy and water sources (Khan and Hanjra, 2009 & Sandhu *et al*., 2010). Organic farming is also considered favourable for areas that falls in remote locations and are naturally inclined towards organic farming (Ramesh *et al.*, 2005 & Yekinni *et al*., 2019).

To exploit the latent opportunities of organic farming, the government and farmers need to focus more on the export of organic products and pay proper attention to the production process and marketing of the produce (Manaloor *et al.*, 2015, Lal *et al.*, 2021). Organic farming is considered demand-driven not supply-oriented, so if planned well and executed with utmost attention, the export of organic products could earn a huge amount of foreign currency for the nation and increase the income of the farmers too. To meet the ever-increasing demand of the organic produce in India, farmers' role is utmost important. The main problem faced by the farmers of organic produce is related to the marketing as they find it difficult to access the far away but suitable markets where they can get premium prices of their produce. Other issues faced by the organic farmers are lack of knowledge about the accessibility and availability of retailers those offer organic products for sale to consumers (Schneeberger *et al.*, 2002, Manaloor *et al.* 2015).

Organic farming not only requires extensive attention and care but also requires skills and good market knowledge. Moreover, organic manure is not easily available like chemical fertilizers. Organic manure is also more expensive as compared to chemical fertilizers. To market organic produce in India, farmers need certification from accredited agencies. Further, to convert into organic farming stringent rules need to be followed like 2-3 years as a mandatory period.

During this period, one cannot use fertilizers and chemicals for production. After this period, agricultural products can be marketed as organic produce. Experiences of conversions highlight that during the period of conversion yield would be low, and organic farmers are expected to incur losses. Not only the yield of produce will be less but also the cost of organic farming will be higher as organic fertilizers and other inputs used in organic farming are expensive (Ramesh *et al.* 2005). Thus, it is the high time to analyse the attitude of the farmers and their marketing orientation towards organic produce so as to devise the adaptive strategies to tap one of the most lucrative market of contemporary time.

Review of Literature

Though this topic is well researched in the literature from consumers' perspective but a very few research studies have been conducted which covered the organic producers' side. To develop the concept and explore the gap, researchers have done in-depth review of the literature. Geier and Vogtmann (1984) examined the marketing strategies of the organic producers for organic as well as usually produced products in southern Germany. The study reported that organic producers preferred to direct marketing over others to sell their producer irrespective of the category of the produce. The study proposed that other than direct selling at farms, delivering product directly to the consumer, through dispatch partner and weekend market might offer better results to the farmers. These tactics may create the opportunity of high earnings and help the producers to compete and survive in the competitive environment. The same marketing approach is profitable for the consumers too as they get fresh products, exercise control over products organic credentials and they also pay low price as compared to the price they would have paid in retail market. Dodds et al. (1991) evaluated the outcomes of the marketing practices of the producers on consumers decision making. The study found that indicating value proposition, brand name and retail shop image have significant impact on consumers' opinions about price as well as procurement behaviour. The study further highlighted that consumers consider brand name and shop name to evaluate the value of product rather than counting on the existence of a value-worth interconnection for a specific product. Researcher found that price of the product and brand is imperative determinants of product quality opinions and outcome of shop name are affirmative but minute.

Jolly and Norris (1991) stated in their study that organic products have attained a really good position in chain-store markets. They also pointed out that there is huge scope for spreading out and enlargement for the organic product market. Lohmann and Foster (1997) focused on the marketing strategies adopted for organic products in Germany and UK, highlighting the difference between "niche" and "mainstream" marketing strategies with regard to organic products. Due to

a huge difference between actual and potential demand for organic products in Germany, a move towards "mainstream" or centralized marketing in supermarkets was suggested by the authors. Whereas, in case of the UK, the authors recommended decentralized or "niche" marketing so as to make it profitable for the farmers who are unwilling to convert to organic farming. Whereas, Zotos *et al.* (1999) analysed confronts and prospects of marketing of organic food products supply chain in Greece. The study found that price sensitivity and availability of the organic product is the main choice criteria of consumers and retail store managers. The research suggested that organic producers need to highlight the price-value relationship and ensure the timely delivery of the products to penetrate the market.

RQ1: What kind of marketing strategies are being practiced by the organic producers?

Schneeberger *et al.* (2002) studied the barriers which farmers face when they shift from cash crops to organic farming in Austria. Results based on empirical data suggested, technical difficulties in production, extra requirement of the labour, declined income, marketing problems, farm size as the main barriers to the shift. In a similar study to Lohmann and Foster (1997), Anne et al. (2004) analysed the supply chain and marketing strategies of various stakeholders of organic produce. They pointed out that organic products were not placed by the retailers due to the "niche" characteristic associated with them. As per study, consumers were unaware about the organic labeling. It was thus suggested to increase the awareness and knowledge through combined efforts by all the parties involved in the process. Results of the Park (2009) exhibited that producers selling products through various channels get least affected by selling difficulties because of the multiple selling options. Understanding about marketing tactics has an encouraging impact on organic farm earnings is the finding of the study. Pearson and Henryks (2012) designed marketing strategies for organic products with respect to all the components of marketing mix. The study stressed that marketers must highlight health, environmental and quality aspect of organic products while communicating with the customers. Manaloor *et al.* (2016) found that farmers of organic products face problems related to the marketing aspect as farmer cannot access the far away markets where they can get premium prices of their products. Lack of awareness regarding retailers persists for both, producers and consumers.

RQ2: What are the factors that affect the opinion of the farmers towards organic farming?

Researchers found hardly any study that covers the marketing perspective of the farmers. There are very few studies that has considered the challenges faced by the farmers while selling the produce and distribution aspect of the marketing.

Objectives of the Study

Keeping in mind the earlier literature, this article attempts to meet the following objectives:

- To examine the attitude of the farmers towards the marketing of organic produce.
- To analyse the marketing strategies practiced by the farmers of organic produce.

Hypotheses of the Study

After careful review of literature, following hypotheses are framed and tested in the present study:

H_1: Producers of organic products have positive attitude towards organic farming.

H_2: Producers of organic products do not practice marketing strategies.

Research Methodology

Primary data has been used in the present study. Using multi-stage purposive sampling, the top five districts of the sample states (Himachal Pradesh and Uttrakhand) have been selected based on the highest organic production/ producers. Further, one developmental block from each district having the highest number of organic producers has been selected. Ten farmers/ producers have been selected as respondents from each developmental block to collect the data. Data has been collected from 100 organic producers in total from both the Himalayan states. Primary data collection has been done with the help of a well-designed schedule as the study covers the farmers/producers only. Data has been collected on two major dimensions i.e. attitude of the farmers and marketing strategies practiced towards organic products. Along with descriptive statistics, reliability as well as item analysis, cross-tabulation, and ANOVA have been used to analyse the data. To reduce the dimensions of the scale, factor analysis has also been used.

Reliability Analysis

Before analyzing data, reliability of the data is checked with the help of Cronbach's Alpha. Item analysis is done for all the items of the instrument. All the statements related to opinion/attitude towards organic farming, marketing and pricing strategies, production and product attributes, physical distribution and promotion strategies were considered good as inter-item correlation was good and further tested during factor analysis. Item analysis for the statement measuring producer's attitude and intensions reported in the following sections. All the statements of schedule related to attitude and marketing practices were subjected to alpha test of reliability; the Cronbach's alpha statistics for the measures was 0.807.

Table 1: Cronbach's alpha values for all the measures

Description	No. of Items	Cronbach's Alpha
Opinion about organic products	58	0.807

The reliability values from the above table indicates that the reliability coefficient Cronbach's alpha for all the items of the schedule is above to 0.8; indicates very good reliability (Chawla & Sondhi 2011). Moreover, values above to 0.5 can be considered for further analysis (Nunnally 1978).

Factor Analysis: Statements Measuring Opinion towards Organic Farming

58 statements of all the measure of the study put to factor analysis so as to find out the dimensions perceived by the respondents (Table 2). The value of KMO's measure of sampling adequacy comes out to be 0.726 and Bartlett's test of sphericity was found to be significant, depicts that factor analysis can be applied on this data.

Table 2: Factor analysis (principal component analysis and varimax)

KMO's	0.726
Bartlett's Test of Sphericity (Sig.)	0.000
Variance Explained	61.62 %
Number of Factors Extracted	21

Principal component analysis was used because the dimensions produced by factor analysis were to be further subjected to analysis. The basis for factor extraction was kept as rotated factor loading of at least 0.50 which is desirable (Costello and Osborne, 2005). To get the stable factor as measure of multivariate analysis, Cronbach's alpha was again checked for statements of respective factors. Application of factor analysis on statements measuring Opinion of producers about organic farming and marketing strategies for organic products gave eight and thirteen factors solution respectively. Sixty one percent variance explained was taken as the method for deciding number of factors. Though there is general perception to use factor in further analysis when the variance explained is at least 55 per cent (Malhotra, 2008) but in social sciences studies, 50 percent of variance is useful and can be taken ahead (Zenk and Eckhardt, 1970). Details of each factor containing respective statements along with factor profiling is given in the *Annexure-1*.

Demographic Profile of the Respondents

Table 3: Demographics of the farmers

Demographics	Sub-heads of demographics	Himachal Pradesh	Uttarakhand	Total	%
Education	No formal education	4	1	5	5.00
	Below High School	7	8	15	15.00
	High School	22	16	38	38.00
	Senior Secondary	12	12	24	24.00
	Graduation	3	12	15	15.00
	Post Graduation	2	1	3	3.00
	Total	50	50	100	100.00
Type of Farming	Only organic	18	37	55	55.00
	Both organic and inorganic	32	13	45	45.00
	Total	50	50	100	100.00

Results and Discussion

Table 4 shows that almost one-third of the producers prefer to sell their products to middlemen due to convenience. Twenty-eight percent of them sell their products in farmer markets and to other sources such as private restaurants/ hotels. Sixteen percent prefers direct selling to consumers and through agents. Only five percent of the producers prefer to approach NGOs that can help them to get a better price for their produce. Results clearly indicates that producers have a different opinion and preference about market platforms available for organic products.

Table 4: Sales Channel used by the producers

Selling options	Himachal Pradesh	Uttarakhand	Total
Farmer market	17	11	28
Directly to consumers	15	1	16
Middlemen	26	4	30
Agents	13	3	16
NGO	0	5	5
Others	0	28	28
Single source	31	48	79
Multiple sources	19	2	21
Total Farmers	50	50	100

Only twenty-one percent of the producers uses more than one platform to sell their produce and rest prefer to use just a single option to sell their produce. More than half of the farmers from Himachal Pradesh sell their product to middlemen and fifty-six percent of Uttarakhand farmers sell their organic produce to other sources. Results indicate that producers are not aware about the various available platforms to sell their organic produce and majority of them are dependent upon the third party like middlemen etc. to market their products.

Table 5 exhibits the attitude of the farmers and their marketing orientations towards organic products. Results clearly states that producers have a positive attitude when it comes to sustainability of organic farming and future intentions to continue the organic farming. But, producers are not carrying positive opinion about government support, profitability and certification process towards organic farming. Education have a significant impact on opinion of the organic producers. As the education level increases, proudcers opinion towards government support and assistance, productivity and sales volume also moved towards positive side. Be it is the respondent from the less educated group or the ones from the well-educated class, both are neutral about organic farming being a beneficial option along with higher prices despite lower sales volume. Results point out that well-educated class of organic farmers perceive that they are getting adequate assistance/training/incentives from the government for adopting organic farming but on the contrary respondents from low education classes are neutral about these aspects of organic farming. Results further present that producers of all the educational categories consider organic farming as a sustainable option. Respondents are not very pleased with the government support and further not sure about the export of organic products. Farmers from all educational classes are not much satisfied with the yield and returns from organic farming.

Hence, the findings of the study do not support the first hypothesis that farmers have positive attitude towards organic farming as the results report mix kind of opinion.

Drivers of positive attitude/ opinion towards organic farming

Keeping in view the potential of organic products in domestic as well as export market, the positive attitude of the farmer towards organic farming is important. Results of the study clearly indicate that farmers have not a very positive attitude and their intentions to continue the organic farming depends on various factors. The study finds that to drive the attitude/opinion of the farmers towards organic farming depends upon the factors like government support and assistance, production cost, yield, certification process, prices and slaes volume of the products. Further, demand of the organic products, customers response to higher prices, incentives provided by the government, and training also shape their attitude towards organic farming.

Table 5: Respondents' education-wise analysis (ANOVA)

Description	Levene Statistic (Sig. Value)	F-Statistic/ Brown Forsythe* (Sig. Value)	Sig. Value	Overall Mean	Below high school	High school	Senior secondary	Graduation and above
Attitude/ Opinion towards organic farming								
Future Intentions F1	0.315	2.274	0.085	2.41	2.69	2.38	2.34	2.24
Government Support and Export Plans F2*	0.375	3.636	0.016	3.06	3.43	3.29	2.79	2.53
Productive and Profitable F3	0.6	0.477	0.699	2.68	2.55	2.75	2.79	2.50
Beneficial Option F4	0.001	1.172	0.326	2.53	2.40	2.59	2.66	2.35
Higher Prices and Lower Sales Volume F5	0.111	1.058	0.371	2.76	2.78	2.77	3.05	2.33
Government Assistance and Challenges F6*	0.05	4.088	0.009	2.66	3.05	2.74	2.50	2.30
Sustainable Option F7	0.376	2.015	0.117	1.97	2.10	2.03	1.94	1.76
Certification Issues F8	0.914	1.447	0.234	2.65	2.45	2.67	2.85	2.53
Marketing strategies for organic products								
Competitive Strategies F1	0.089	0.48	0.697	3.70	3.74	3.76	3.64	3.60
Targeting and Positioning F2	0.047	0.468	0.706	3.30	3.38	3.28	3.21	3.39
Highlights Health and Nutritional Value F3	0.003	0.78	0.509	3.66	3.78	3.7	3.46	3.69
Branding and Packaging F4	0.336	1.801	0.152	4.07	3.90	4.09	4.08	4.19
Value Proposition F5	0.115	1.007	0.393	3.70	3.63	3.63	3.65	3.97
Pricing Strategies F6	0.773	0.223	0.88	3.71	3.73	3.63	3.75	3.78
Distribution Methods F7*	0.141	3.187	0.027	3.80	3.55	3.73	3.85	4.15
Maintenance of Stock and Product Preservation F8	0.442	1.982	0.122	3.26	3.23	3.37	3.40	2.86
Distribution Cost and Warehousing Facilities F9*	0.009	4.418	0.007	4.05	3.85	4.04	4.02	4.31
Local Market F10	0.896	1.354	0.262	1.98	2.2	1.82	2.08	1.94
Integrated Promotion F11	0.032	0.394	0.758	3.83	3.76	3.88	3.77	3.90
Electronic and Print Promotion F12	0.014	1.075	0.365	4.19	4.1	4.18	4.17	4.33
Cluster Approach F13	0.011	1.359	0.273	1.88	1.85	1.74	1.88	2.22

Table 5 further exhibits the results about the marketing orientation of the farmers/ producrers towards organic farming. Analysis shows that education level of the farmers significantly affects the distribution strategies of the farmers towards organic products. Where as on other aspects of marketing of organic products, education has insignificant affect. The study finds that producers are selling their organic product in the local market and are ready to be part of clusters/ groups to expand their market. Further, producers are not practicing the tactics like competitive strategies, highlighting health and nutritional value, branding and packaging, value proposition, and pricing strategies to enhance the size of their market.

Reason behind not using the marketing strategies is that farmers are not aware of these tactics of marketing. As a result they are missing the opportunities of realizing the true value of their produce.

Irrespective of the educational qualification, producers are not using separate distribution channels for organic produce. They are selling their produce to middlemen because producers do not have proper warehousing facilities. Respondents from all categories neither participate in the buyer-seller meet to demonstrate the organic produce nor promote the organic product through pamphlet/ banner/ newspaper/radio etc. Farmers opined that buyer- seller meets are mostly held in far distance places or bigger cities and it is difficult to reach there, that is why they are not that much aware of various promotional techniques. Hence, results of the present study support the second hypothesis that farmers do not practice any kind of marketing strategies to market their organic produce.

Results of the Table 6 depict that there is no difference in the opinion of the respondents of both types of organic producers (organic as well as inorganic) regarding various aspects of organic farming except for F1, F2, F3, F4, F5, and F8. Results point out that farmers growing both organic and inorganic products are much more in agreement with the future intentions, like continuing farming organically, expansion of the area/ production under organic farming, and recommendation of organic farming to a fellow farmer, as compared to the farmers who are producing only organic products. This may be due to the fact that they are not getting the desired returns. Producers of both organic and inorganic products are not satisfied with the government support/yield of organic farming as compared to the farmers who are producing only organic products. Farmers producing only organic products believe that organic farming is a beneficial option with higher prices and lower sales volume. These producers also opined that the certification process of organic products is a very expensive and tedious one.

Table 6: Organic farming type-wise analysis (t- statistics)

Description	Type of farming	Frequency	Mean	Levene Statistic (Sig. Value)	t-Statistic	Sig. Value
Attitude/opinion towards organic farming						
Future Intentions F1*	Only organic Both organic and inorganic	55 45	2.51 2.28	.516	2.051	.043
Government Support and Export Plans F2*	Only organic Both organic and inorganic	55 45	2.70 3.50	.114	-4.005	.000
Productive and Profitable F3*	Only organic Both organic and inorganic	55 45	2.48 2.91	.972	-2.215	.029
Beneficial Option F4*	Only organic Both organicand inorganic	55 45	2.31 2.79	.440	-3.898	.000
Higher Prices and Lower Sales Volume F5*	Only organic Both organic and inorganic	55 45	2.49 3.09	.083	-2.387	.019
Government Assistance & Challenges F6	Only organic Both organic and inorganic	55 45	2.53 2.82	.196	-1.897	.061
Sustainable Option F7	Only organic Both organic and inorganic	55 45	2.04 1.90	.063	1.505	.135
Certification Issues F8*	Only organic Both organic and inorganic	55 45	2.44 2.90	.187	-3.489	.001
Marketing strategies for organic products						
Competitive Strategies F1	Only organic Both organic and inorganic	55 45	3.62 3.79	.348	-1.467	.145
Targeting and Positioning F2	Only organic Both organic and inorganic	55 45	3.33 3.26	.567	.593	.555
Highlights Health and Nutritional Value F3	Only organic Both organic and inorganic	55 45	3.68 3.63	.261	.320	.749
Branding and Packaging F4	Only organic Both organic and inorganic	55 45	4.06 4.08	.438	-.171	.864
Value Proposition F5	Only organic Both organic and inorganic	55 45	3.73 3.66	.657	.475	.636
Pricing Strategies F6	Only organic Both organic and inorganic	55 45	3.67 3.74	.311	-.493	.623
Distribution Methods F7	Only organic Both organic and inorganic	55 45	3.79 3.80	.178	-.047	.963

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Maintenance of Stock and Product Preservation F8	Only organic Both organic and inorganic	55 45	3.14 3.40	.384	-1.635	.105
Distribution Cost and Warehousing Facilities F9	Only organic Both organic and inorganic	55 45	4.00 4.10	.057	-1.220	.225
Local Market F10	Only organic	55	2.02	.879	.559	.577
	Both organic and inorganic	45	1.93			
Integrated Promotion F11*	Only organic Both organic and inorganic	55 45	3.74 3.95	.187	-2.047	.043
Electronic and Print Promotion F12	Only organic Both organic and inorganic	55 45	4.16 4.22	.436	-.694	.490
Cluster Approach F13	Only organic Both organic and inorganic	55 45	1.93 1.82	.257	.690	.492

Note: * Significant at 5%

With respect to the marketing strategies adopted by both types of organic farmers, like competitive strategies, highlighting health and nutritional value, branding and packaging, value proposition, pricing strategies, distribution methods, distribution cost and warehousing facilities, integrated promotion and electronic and print promotion, farmers responded that they are not using these marketing techniques to promote their organic products.

Both types of respondents are neutral about maintaining required stock and using traditional methods to preserve the naturalness of organic products in the stage of warehousing and transportation. Respondents prefer to sell organic produce in the nearby market and are willing to join some organic producers' groups for better market opportunities. Above Results clearly support the hypothesis of the study as producers of organic products do not practice any type of marketing strategies.

Conclusion and Policy Implications

Farmers producing only organic products consider organic farming a beneficial option however farmers involved in mixed types of farming did not see it as a sustainable option. This might be due to the fact that farmers who are producing only organic products have built a reputation among customers and get higher prices for their products. First-generation organic producers do not consider organic farming more productive and profitable but inherited farmers found it productive and profitable. This result supports the established facts that at the initial stage of organic farming yield/production of crops declines but after a

period of time farmers start to get as much yield as conventional farming from the same size of farm. They agree to the fact that organic produce has a higher price margin as compared to inorganic produce, but they are facing problems with the process of certification.

More than half of the farmers from Himachal Pradesh sell their product to middlemen and fifty-six percent of Uttarakhand farmers sell their produce to other sources. The figures indicate that organic producers are not exploiting the latent opportunities of the organic produce market as the majority are dependent upon the third party to market their produce.

The study indicates that organic producers are not aware of the multiple and sustainable benefits of organic farming, hence, need to be initiated an intensive and aggressive awareness program regarding the opportunities in this product category. Workshop/ seminar may also be used to target a manageable group of producers and to provide a platform to interact with each other. Capacity-building programs need to be launched targeting the existing organic producers to enhance the marketing skills of the producers.

The government's proactive approach may serve as a game-changer for the adoption of organic farming. To protect farmers to switch towards conventional farming after the adoption of organic farming, financial assistance during the initial years may attract farmers to opt for organic farming. Organic produce pricing policy may also be another measure to extend government support to organic farmers. The organic certification process needs to be made smoother, cost-effective, and less time-consuming as by default organic producers of the Himalayan region are avoiding the certification process due to these complexities. Certification centers may also be established at the panchayat/ local level so as to benefit the marginal and small farmers who wants to sell their produce at domestic markets. National-level certification may be mandatory for large-scale farmers or for clusters of organic farmers who intend to export their produce.

Future Research

Since the sample in this study is limited to the organic producers of two Himalayan states, issues and concerns of producers from other hilly and mountainous regions should be well thought-out as indicated by their requirements due to ecological circumstances. The results are drawn from the sample size of 100 producers only, higher number of responses can present situation in much better way. Given the significance of this question and the insufficient literature existing in the area, the similar study should be carried out with large number and greater area coverage.

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Annexure-1

Factor Profiling

Factor Name	Statements	Factors Loading
Attitude of the Farmers towards Organic Farming		
Future Intentions (F1)	Satisfied with the current PGS-certification process.	0.584
	Plan to continue farming organically.	0.872
	If feasible, will plan to expand the area/ production under organic farming.	0.912
	Will be glad to recommend organic farming to a fellow farmer.	0.933
Government Support and Export Plans (F2)	Satisfied with the support provided by the government with respect to organic farming.	0.873
	If feasible, Will plan to export my organic produce.	0.875
Productive and Profitable (F3)	Satisfied with the yield of organic farming.	0.789
	Satisfied with the returns from organic farming.	0.863
Beneficial Option (F4)	Organic farming is good for the environment.	0.630
	Organic farming has lower production costs.	0.695
	Organic farming has higher yields in comparison to conventional farming.	0.790
	Export potential of organic produce is very good.	0.662
Higher Prices and Lower Sales Volume (F5)	Organic produce has higher price margin as compared to inorganic produce.	0.51
	There is high demand of organic products in the market.	0.597
	Organic products tend to have lower sales volume due to their higher prices.	0.814
	Consumers are hesitant to buy organic products because of higher prices.	0.814
Government Assistance and Challenges (F6)	Organic farming is difficult to implement.	0.50
	Adequate assistance/training is provided by government for adopting organic farming.	0.826
	Adequate incentives are provided by the government for adopting organic farming.	0.828
Sustainable Option (F7)	Conventional farming leads to deterioration of soil fertility.	0.607
	Organic products have higher nutritious value.	0.737
	Demand for organic products is going to increase further in the near future.	0.755
Certification Issues (F8)	Certification process of organic product is very expensive.	0.578
	Certification process of organic product is tedious.	0.882

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Marketing Strategies Practiced by the Organic Producers

Competitive Strategies (F1)	Goes for soil testing on times to meet criteria of organic farming.	0.51
	Conducts periodic consumer surveys to get their feedback to keep yourself competitive in the market.	0.935
	Communicates regularly with the customers for feedback?	0.849
	Gathers information about the competitors regularly.	0.890
Targeting and Positioning (F2)	Targets those customers who prefer or intend to buy organic products.	0.803
	Always highlights the benefits of the organic products for customers.	0.840
	Prefers to produce seasonal produce under organic farming.	0.587
	Promotes comparison of your products with competitors' products.	0.506
Highlights Health and Nutritional Value (F3)	Advocates production process of the organic product before customer.	0.753
	While selling organic products, emphasizes on health and nutritional benefits of consuming organic products.	0.888
	Highlights the distinct characteristics of organic products to convince the customers.	0.887
Branding and Packaging (F4)	Uses separate identification mark to sell organic products.	0.788
	Uses organic packaging for your products.	0.901
Value Proposition (F5)	Highlights the consumer value of the organic product instead of price.	0.862
	Gives special discounts to regular customers of organic products.	0.875
Pricing Strategies (F6)	Charges higher prices for organic products in comparison to inorganic produce.	0.904
	Defends high price of organic products when consumer complains about high price.	0.804
Distribution Methods (F7)	Uses third party logistic system.	0.856
	Extra care is taken so that organic products are delivered without damage.	0.672
	Uses entirely separate distribution channel for organic produce.	0.781
Maintenance of Stock and Product Preservation (F8)	Required stock is maintained to meet the demand of the organic produce.	0.800
	Traditional methods are used to preserve the naturalness of organic product in the stage of warehousing and transportation.	0.790
Distribution Cost and Warehousing Facilities (F9)	Channel partner charges higher commission for organic produce.	0.862
	Have proper warehouse to stock the organic produce.	0.694
Local Market (F10)	Prefers to sell organic produce in nearby market.	0.862
Integrated Promotion (F11)	Participates in buyer-seller meet to demonstrate the organic produce.	0.645

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	Uses organic production certificate to convince consumers about the authenticity of your product.	0.694
	Takes part in exhibitions arranged by facilitating agencies.	0.662
	Great care is taken to display organic products in separate racks/ shelves/ counters.	0.780
	Government platforms are used also to promote the organic . produce	0.604
Branding through Social and Print media (F12)	Uses own trade mark and logo to sell the organic produce.	0.762
	Uses social media platform to promote organic product.	0.774
	Promotes organic product through pamphlet/ banner/ newspaper/radio etc.	0.668
Cluster Approach (F13)	Willing to join some organic producers groups for better market.	0.763

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Unemployment and Government of India Initiatives: A Study of Selected Schemes

KSHITIZ MAHARSHI, POOJA CHAUDHARY AND MOLLY MONDAN

Abstract: The unemployment situation arises when there are no jobs for the individuals who want to work. Many countries face the economic problem of unemployment but very less take sustainable initiative to reduce this problem. Through various schemes and policies, the government of India is willing to fulfil the hope of various unemployed individuals. This study was conducted to analyse the initiatives taken by the government to control the increasing unemployment rate. Through the PMSVANidhi scheme, the government has extended the financial help to those who do not have the education and means to walk out of their backwardness. The results of Rozgar mela are very good. Hence, it can be concluded that the government through their policies is providing employment, providing a platform for the employment generation, giving free training to develop the skills, and providing funds so that citizens can be employed.

Key Words: Unemployment, Indian Government Schemes, Pradhan Mantri SVANidhi, Unemployment Rate, Rozgar Mela

Introduction

If any country wants to prosper it needs to prosper as a whole. The economy has got to get moving, we have got to get the unemployment rate down (Colin Powell). The problem of unemployment needs to be solved not only for the economic growth but also for maintaining equality between rich and poor. Government plays a major role in balancing the economy of the country. Through various schemes and policies, the government of India is willing to fulfill the hope of various unemployed individuals. Many countries face the economic problem of unemployment but very less take sincere initiative to reduce this serious problem. After the independence of India, many schemes have been implemented to address the economic issues such as poverty, unemployment, and backwardness.

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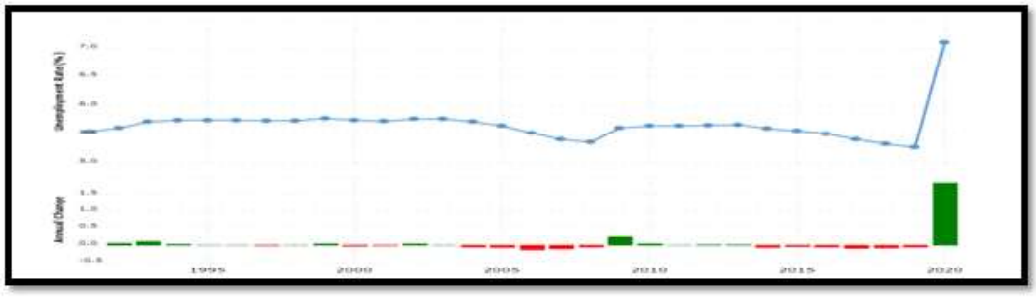

Figure 1: Total unemployment rate of India from 1991 to 2020

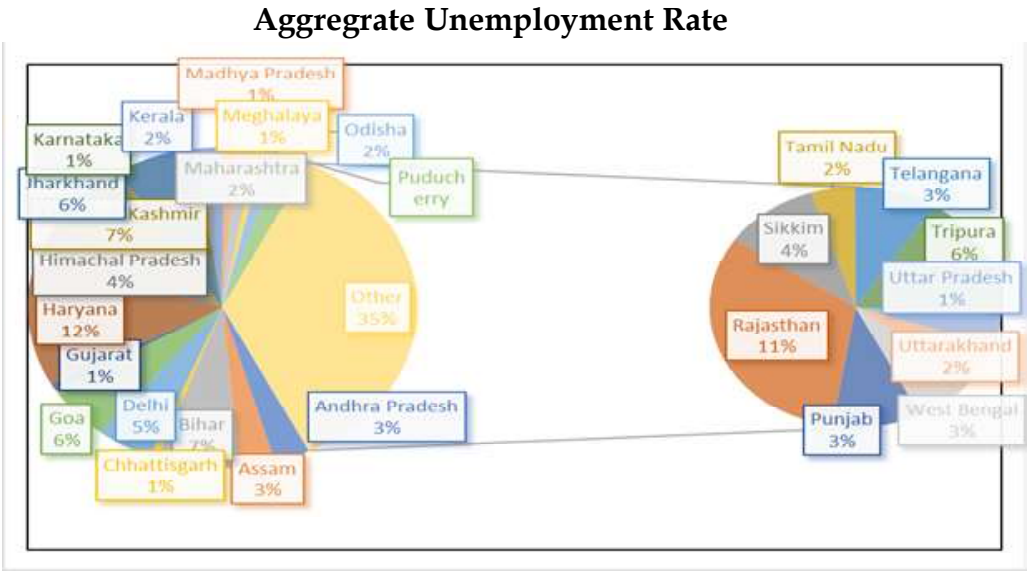

Figure 2: Aggregate unemployment rate state wise of 2022 (January to April)

Indian unemployment rate was 8.10% in 2022 February, which got decreased by 1.05% (7.07%) in March 2022, and in April it increased by 0.74% (7.79). Figure 1, shows the total unemployment rate of India from the year 1991 to the year 2020. It is very much visible that the unemployment rate has been in decline from the year 2015 to 2018. The unemployment rate in 2017 showed decline by 0.1%, was 5.41%. Further decrease by 0.8% in 2018 was seen. In 2019 the declining rate decreased and only 0.6% decline was seen. While in 2020, the situation turned, instead of decline the unemployment rate increased by 1.84%. There was huge increase in the unemployment rate in 2020, because of spread of Covid -19. Many jobs were lost in Covid -19. People were forced to move back to their hometowns after losing their jobs. The unemployment rate in Haryana, was 34.5% in April 2022. While it was second highest in Rajasthan, which was 28.8%

and followed by Bihar with 21.1% rate. Figure 2 shows the unemployment rate of the states of India, unemployment rate is aggregate of four months of 2022.

To curb the unemployment situation, government of India has launched various schemes which are mentioned in Table 1. The various scheme shows that government has taken holistic approach, not only the scheme is aimed to provide employment but also, focused on training, education and capacity building. The schemes are both for urban and rural areas. The unemployment rate in urban areas is more than the rural areas.

Table 1: Various schemes implemented in India to reduce the unemployment issue

S. No	Scheme Name	Year
1	Training of Rural Youth for Self- Employment	1979
2	Rural Landless Employment Guarantee Program	1983
3	Indra Awas Yojana	1985
4	Jawahar Rozgar Yojana	1989
5	Nehru Rozgar Yojana	1989
6	Employment Assurance Scheme	1994
7	Million Well Scheme	1996
8	Swarna Jayanti Gram Rozgar Yojana	1999
9	Swarna Jayanti Shahari Rozgar Yojana	1999
10	Sampoorna Grameen Rozgar Yojana	2001
11	Mahatma Gandhi National Rural Employment Guarantee Act	2005
12	Deen Dayal Antyodaya Yojana	2011
13	National Rural Livelihood Mission	2011
14	National Urban Livelihood Mission	2013
15	Deen Dayal Upadhyaya Grameen Kaushalya Yojana	2014
16	National Career Service	2015
17	Pradhan Mantri Kaushal Vikas Yojana	2015
18	Pradhan Mantri Mudra Yojana	2015
19	Pradhan Mantri Rozgar Protsahan Yojana	2016-17
20	Pradhan Mantri Garib Kalyan Yojana	2020
21	Pradhan Mantri SVANidhi	2020

Literature Review

Chowdhury (2011) observed that there was decline in the rural employment rate, however, the situation of the women's employment was very disappointing.

It was also observed that labour force participation rate of the women's declined. The decrease in women employment may be because of social constraint or because more women are pursuing higher education for the better employment opportunities. It was also observed plan ned employment rate decreased not only in rural agriculture sector but also in urban manufacturing sector. Venkatanarayana and Mahendra (2012) stated the causes of unemployment is increased population, capital formation at a low level, transportation constraint, and the pace of growth in the industry sector is very low. Sharma (2019) suggested that to overcome the unemployment, government should invest resources in advancing the crop cultivation techniques. Some state suffers greatly because of seasonal changes such as Rajasthan and Assam. While some state has a minimum effect because of season change, such as UP and Haryana. The author suggested focusing more on non-agriculture schemes. Parvathamma (2020) government steps to boost the economy the action for the increase in employment and development of enterprises and the action to ensure the safety of the employees. Nair (2020) the government have taken initiative to solve the problem of unemployment which is caused due to low investments. Some of those initiatives are Start Up India Scheme and Stand Up India Scheme in 2016. According to author unemployment rate has increased from 2011-12 to 2017-18 by 4%. The author observed that the rate of unemployment in rural youth is very high, the percentage has increased by 15% in male and by 10% in female, in past six years. Urban youth unemployment rate has increased by 10% in male and 13% in female in past six years. The causes of unemployment are increasing population, inflation, low literacy, etc. Recommended to provide training for skill development, to increase the government initiative, to inject capital in industry, reforms in education etc. Sahoo and Suresh (2021) described that Odisha is an agriculture-based state, where people's livelihood is based on land only, because of poor transportation and lack of facilities the unemployment rate is high. The reasons are an increase in population, limited land, the farming techniques are not advanced, a cottage industry has declined because they cannot compete with modern industry, lack of proper education, Technology backwardness, no proper channel of communication for youth, and means of transportation are inefficient. The government schemes such as Mahatma Gandhi National Rural Employment Guarantee Act, Swarna Jayanti Gram Rozgar Yojana, Nehru Rozgar Yojana, etc. have been implemented to reduce unemployment crisis.

Objective

The objective of this paper is to find out the impact of Government schemes on the unemployment.

Research Methodology

From the figure 1 we observed that unemployment rate increased in 2019. Earlier the unemployment rate of India was 5-6% but after 2019 the rate came up to 8-9%. The secondary data was collected from the government official websites and various reports and circulars of government. PM Street Vendor's Atma Nirbhar Nidhi (SVANidhi) Scheme, Pradhan Mantri Kaushal Vikas Yojana and Rozgar Mela are some initiatives of the government to reduce the unemployment. The study is descriptive and explanatory in nature. Statistical tools such as ANOVA and regression analysis are used to analyse the data.

Findings

PM Street Vendor's Atma Nirbhar Nidhi (SVANidhi) Scheme: The scheme was launched under Aatma Nirbhar Bharat Financial Package in June 2020. The scheme targets the street vendors who were unable to continue their business during the lockdown period. The scheme aims to push the street vendors by providing them loans up to Rs. 10,000. Government is not only helping the street vendors but also working towards the aim of digital India, through the scheme. The scheme not only boosts the economic situation of the street vendors community but also benefits them socially by pushing them towards modernization, while eradicating backwardness.

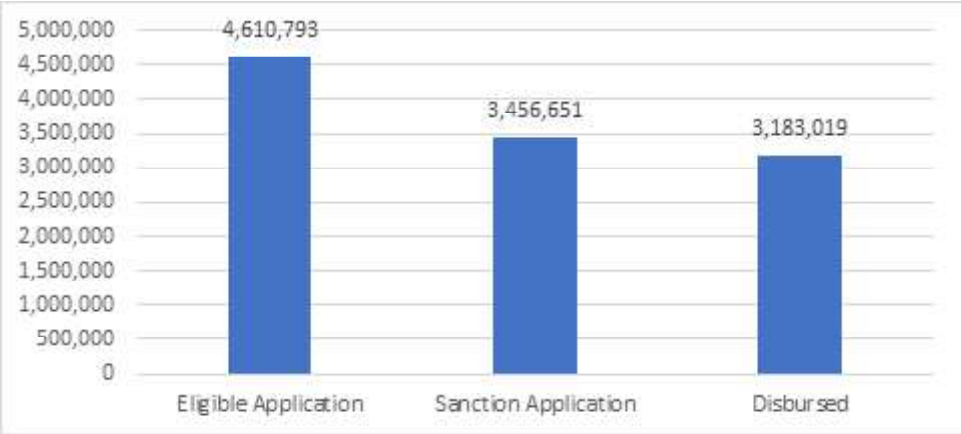

Figure 3: SVANidhi scheme application status

In the figure 3 application status under the SVANidhi Scheme is described. It was observed that from June 2020, 34,56,651 applications have been sanctioned. Out of Total Applications which were eligible, 74.96% were sanctioned. While the amount has been disbursed to 92.08% of the sanctioned.

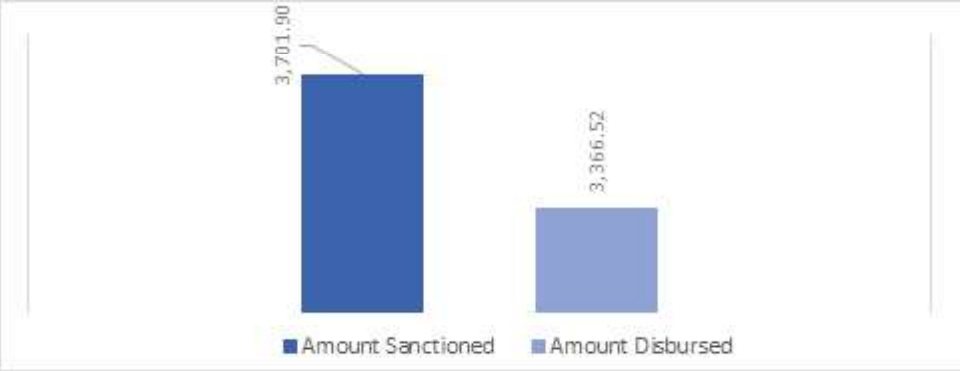

Figure 4: SVANidhi scheme amount sanctioned and disbursed (₹ crores)

The channel for distribution adopted by the Ministry of Housing and Urban Affairs (MoHUA) is through bank accounts. In the two years the scheme has covered many venders. It is very much visible in the figure 4 that out of total amount sanctioned 90% of the amount has been disbursed.

Besides, it was also found that male to female vendor ratio is 6:4. More than 52% vendors are in the category of OBC. While very less, that is only 3% vendors benefited are from the schedule tribe category. 26% are under general category and 19 % in schedule cast category.

In West Bengal, the loans were sanctioned to 15,563 vendors the amount was disposed to 3,421 vendors, total disbursed amount till May 2022 stands at 13.26 crore. In Uttarakhand amount was disbursed to 11,065 vendors although the sanctioned vendors were 11,637 and the amount disbursed is 11.6 crores. In Uttar Pradesh, the amount was disbursed to 870,915 vendors, while the sanctioned vendors were 887,850. The total amount disbursed was 902.32 crore. In Tripura, the amount was disbursed to 3,233 vendors. the amount disbursed was 3.44 crores. Telangana 40,067 vendors were distributed in the amount of 452.96 crores. In Tamil Nadu, out of 372,904 applications, the loan was distributed to 165,998 vendors, the total amount disbursed till May 2022 was 167.84 crore. In Rajasthan out of 140,720 applications, only 50% were sanctioned and 49% were provided loans, the amount disbursed was 67.1 crores. In Punjab was disbursed to 40,437 vendors and the total amount disbursed was 41.15 crores. In Pondicherry, the loan was provided to 1,324 vendors and the total amount given was 1.4 crores. In Odisha, out of 67,570 applications, the loan was given to 36,530 vendors and the total amount disbursed was 38.04 crores. In Maharashtra, out of 380,603 applications, the loan was provided to 211,915 vendors. The total amount which was disbursed was 224.91 crores. In Madhya Pradesh, the applications for SVANidhi received were 739,673 while the loan was provided to 519,685. The total amount distributed was 564.89 crores. In Kerala, the total applications for

loans received were 15,588 while the disbursed were 11,455. The amount allocated was 13.41 crore. In Karnataka, the applications were received for 249,746 vendors and the loan was provided to 153,971 vendors. The total amount which was distributed was 166.54 crore. In Jharkhand, the application of 54,659 vendors were received and the loan was provided to 30,701 vendors. The total amount disbursed in Jharkhand was 32.37 crores. In Jammu Kashmir, 20,864 applications were received and a loan was provided to 15,496 vendors. The total amount disbursed was 16.86 crore. In Himachal Pradesh, the application of 5,291 vendors was received out of which the loan was sanctioned to 3,955. The amount disbursed in Himachal Pradesh was 4.55 crore. In Haryana, 60,544 applications were received out of which the loan was sanctioned to 28,782 vendors only and the total amount disperse was 31.05 crores. In Gujarat, the application of 369,498 vendors was received out of which the loan was provided to 218,091. The total amount which has been disbursed is 235.89 crores. In Delhi, the application received were 88,131 out of which the loan has been given to 42,576 vendors and the total amount disbursed is 43.14 crores. In Chhattisgarh, the application for the loans received were 92,141 while the amount has been given to 50,030 vendors. The total amount which has been disbursed is 52.76 crore. In Bihar, 102,650 applications were received out of which the loan is provided to 48,243 vendors and the total amount disbursed is 48.71 crores. In Assam, 104,099 applications were received out of which loans were provided to 57,741 and the total amount allocated was 60.05 crore. In Arunachal Pradesh, out of 575 applications, the loan was disbursed to 281 vendors the total disbursed amount was 3.07 crore.

Pradhan Mantri Kaushal Vikas Yojana: The Yojana was an initiative of the government to provide training and reward the participants. It was launched in 2015. PMKVY 2015-16 was an initial phase, which was very successful. After that the government launched PMKVY 2.0 which was planned for four years from 2016 to 2020. Results of which are listed in table 2. PMKVY 3.0 was the third phase of the scheme launched with advanced training session. It was launched in January 2021. PMKVY 2.0 provided the training in 371 job roles. The scheme is both central and state functional but managed by different organisations. At central level National Skill Development Corporation (NSDC) manages the scheme, while at state and union territory level State Skill Development Missions (SSDMs) manages the scheme. The scheme provides free courses to those students, who had to leave their studies in school or college because of financial reason or other. The courses are of 200 hours to 500 hours.

Under the Pradhan Mantri Kaushal Vikas Yojana the trainings are divided in three categories. Short term training (STT), Recognition of Prior Learning (RPL) and Special Project (SP). For short term training, through the figure 5, it is very evident that the reported candidates are very less in comparison to the candidates who have been trained and provided certificate. Out of the candidates enrolled

in STT 89.69% were trained and 72.25% were certified. While the candidates reported are only 40.66% of the candidates enrolled. For the RPL none of the candidates reported. While 96.39% candidates were trained and 71.86% candidates were certified out of the candidates enrolled in RPL. In SP, 81.03% candidates were trained out of the candidates enrolled. While 54.54% were certified and only 29.50 % candidates reported.

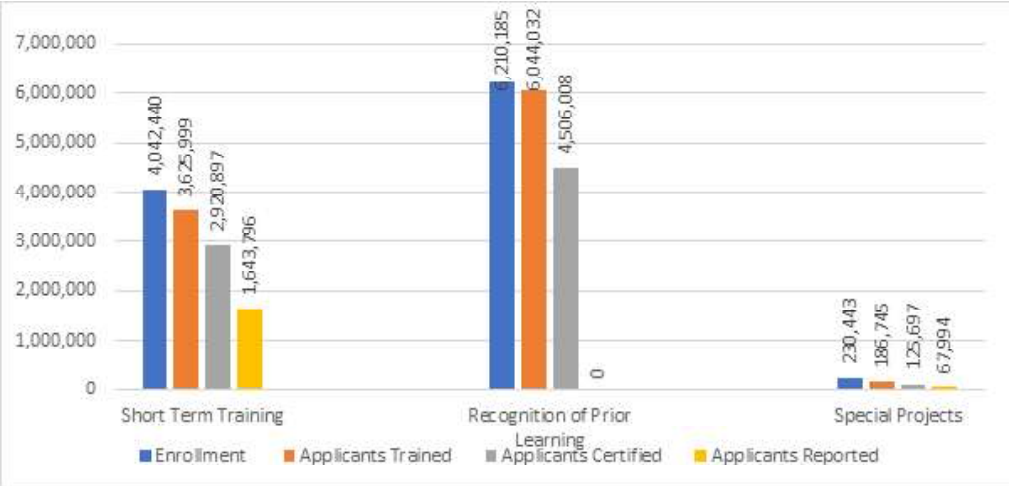

Figure 5: Pradhan Mantri Kaushal Vikas Yojana (2016-2020) Centrally Sponsored Centrally Managed (CSCM)

Table 2: Pradhan Mantri Kaushal Vikas Yojana (2016-2020) Centrally Sponsored State Managed (CSSM)

Component	Enrollment	Applicants Trained	Applicants Certified	Applicants Reported
Total	8,65,537	7,32,724	4,99,573	1,59,889

Figure 6: Pradhan Mantri Kaushal Vikas Yojana (2016-2020) Centrally Sponsored State Managed (CSSM)

Table 3 shows the performance of Pradhan Mantri Kaushal Vikas Yojana implemented by the Centrally Sponsored State Managed (CSSM). For the PMKVY 2.0 84.65% candidates were trained out of total registered. While 57.71% were certified and only 18.47% candidates reported out of total enrolled. It is very evident that the rate of candidates reporting is very low and the candidate's enrolment in PMKVY (CSSM) are very less in comparison to PMKVY (CSCM).

Table 3: Regression analysis of unemployment rate and candidates reported

Regression Statistics	
Multiple R	0.240455
R Square	0.057819
Adjusted R Square	0.020131
Standard Error	3.83405
Observations	27

Table 4: ANOVA test of unemployment rate and candidates reported

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	189383310	1	189383310.77	20.75944	0.00	4.026631
Within Groups	474383363	52	9122757	-	-	-
Total	663766674	53	-	-	-	-

Table 5: Correlation analysis

Variables	Unemployment Rate	Reported
Unemployment rate	1	-
Reported	-0.24045	1

The unemployment rate is calculated based on the average unemployment rate of five years, from 2016 to 2020. Some states with the highest unemployment rate are Delhi, Haryana, Himachal Pradesh, Jammu Kashmir, Jharkhand, Rajasthan and Tripura. It was also found that states such as Andhra Pradesh, Gujarat, Uttar Pradesh, Maharashtra and Tamil Nâdu had a very high candidate enrolment in PMKYV. It was observed that the states which have high unemployment rate also had high enrolment rate. While the states which have low unemployment rate, the candidates enrolled are also less. The above explanation is not applicable for all the states. It was also seen in some states such as Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Tamil Nadu and Uttarakhand, the unemployment rate is low while the enrolment rate is high. Hence, we can conclude that there is no specific relation between the number of candidates enrolled the unemployment rate.

After performing statistical methods, it was found that the unemployment rate and number of people reported does not have relation. In addition to P-value which remains zero, further verification with correlation analysis proves that there is no connection between unemployment rate of states and reported applicants in states. There is negative relation between unemployment rate and reported candidates. If the number of reported people increases the unemployment rate will decrease but the impact is not noteworthy. The scheme may not have an impact on reducing unemployment rate in the states.

Rozgar Mela are organized by the National Skill Development Corporation in various parts of country to provide the employment opportunities in private sector. It is *mela* where job seekers and job providers gather to fulfil their demands. The candidates trained through the various schemes are given the opportunity for employment. Around 40 to 50 organizations from the various sectors of the economy come to offer employment. The focus of the *mela* is to provide the employment to the candidates in the age group of 18-35.

Out of the total candidates who participated in mela organized by NSDC, 42.39% of candidates got shortlisted in *Rozgar mela*. Out of the total candidates who participated in *mela* organized by PMKK, 42.70% of candidates got shortlisted in *Rozgar mela*. Out of the total candidates who participated in mela organized by SSC, 44.85% of candidates got shortlisted in *Rozgar mela*. Out of the total candidates who participated in *mela* organized by PMKVY, 51.35% of candidates got shortlisted in *Rozgar mela*. Out of the total candidates participated in *mela* organized by Market-Led Fee-Based Model Training Partners, 22.59% of candidates got shortlisted in Rozgar mela. The highest number of candidates participated through NSDC. While the percent of candidates shortlisted is highest under PMKVY. The highest number of *Rozgar mela* are registered by PMKK and the highest number of employers also participated in *mela* organized by PMKK.

Table 6: Rozgar mela

Organisations	No. of Rozgar Mela Registered	Candidates	Employers Participated	Participated Shortlisted
National Skill Development Corporation (NSDC)	75	308601	3560	130830
Pradhan Mantri Kaushal Kendras (PMKK)	985	181703	6096	77604
Pradhan Mantri Kaushal Vikas Yojna (PMKVY) Centres	539	50636	3848	26005
Sector Skill Councils (SSC)	538	186533	3138	83668
Market-Led Fee Based Model Training Partners	124	53982	1223	12196
Placement Partners	6	8939	140	3734

Conclusion

The government of India has launched many schemes to curtail the unemployment rate. The government not only is providing employment but also training and increasing the education level of the young blood of India. In the past years, the unemployment situation was curbed to some extent but due to Covid spread and lockdown, the unemployment rate increased again which has become a difficult task for the government to manage. Through the SVANidhi scheme, the government has extended the help to those people who do not have the education and means to walk out of their backwardness. Through the study, we found that out of total vendors to whom the scheme has reached are 60% male and 40% female. More than 52% vendors are in the category of OBC. A total of 16.39% of candidates reported out of the total number of candidates enrolled in Pradhan Mantri Kaushal Vikas Yojana (CSCM). While 57.71% were certified and only 18.47% of candidates reported out of total enrolled in PMKVY (CSSM). It was found that the rate of candidates reporting is very low and the candidate's enrolment in PMKVY (CSSM) is very less in comparison to PMKVY (CSCM). There is no connection between unemployment rate of states and reported applicants in states. While the results of *Rozgar mela* are very good, the percentage of candidates shortlisted by the visited employers, in the different sectors is between 40% to 50%. Hence, it can be concluded that the government through their policies is providing employment, providing a platform for the employment generation, giving free training to develop the skills, and providing funds.

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Personalised Customer Experience Cohorts through Self-Service Technologies (SSTs): A Study on Coastal Region Banks of Odisha during Pandemic Period

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Abstract: Technologies are changing fast in both form and pace thereby shaping today's lifestyles. In the recent years, artificial intelligence (AI), block-chain, internet of things (IOT), cloud etc. have been emerging as successful and effective technical ways of creating differences in business processes. In this regard, cloud technologies enhance customer reach and superlative changing experiences with minimal investment. The greatest benefit is that the customer no longer has to think about things such as upgrading versions that have recent security or regulatory enforcement measures. The main barriers to cloud adoption are in terms of storage, software or infrastructure redefined as service and linked to data security and compliance. Customer experience is treated as a major differentiator in competitive environment. As there is a need and mandate of health consciousness with least physical engagement during the pandemic, the technology backed solutions can be the next lifestyle indicators. In the pursuance of understanding the economy of operation and its effectiveness, most of the processes are now powered by the cloud. It also reflects positively on deeper customer participation, self-service applications and customized interactions. This paper focused on understanding the predictive behavioral indicator of the bank clients in the coastal region of Odisha in tune with self-service technologies and personalized customer experience effective and meaningful.

Keywords: Adoption, Banking, Cloud, Customer Experience, Pandemic, SSTs

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Introduction

Cloud technologies have been continuously evolving in the last decade or so. Decreasing costs in availing these technologies multiplied with more secured environment, effectiveness in formulating appropriate policies related to data and so on have been building these technologies with real potential in the time to come (Atieh, 2021). To make the usage penetrating more into the regions, factors like the improvising speed of internet helping the technologies going beyond the urban areas and entering into the rural landscape as well. To feed India's growing cloud appetite in the government, business, and civil society, nurturing a new talent pool and up-skilling those who are already in the industry is vital (Malhotra and Bhatia, 2021). Code has become a familiar word representing this revolution and has included several infrastructural facets like software, device, processor as well as servers. There is a huge upsurge in the demand for cloud-based B2C and B2B services (Wright *et al.*, 2019). Further, in the absence of cloud, services commonly used by non-techies, such as virtual classrooms, office meetings, online entertainment, and social networking, would have collapsed due to demand at the national and global scales. Thus, the strategy of rebooting and re-imagining all the processes is for efficiency and effectiveness in managing the changes while keeping customer experience at the heart of all initiatives. Customer service, customer feedback, complaints etc. have allowed organizations to improve their relations with the customers as well as proactively addressing the areas of concern (Singh *et al.*, 2021).

Customers have become more selective regarding the brand they choose to spend on. The winning brands are the ones that treat their consumers with respect, provide great service and build a lasting relationship with them, thereby delivering value to the customer and generating in turn, incremental business for the company (Avery, 2020). The customer today has a number of choices when it comes to banking and financial services. The advancement of technology has changed a lot. Cloud technologies have ensured reliability and seamless access to online services such as virtual communication, e-shopping, and digital payment wallet (Hassan *et al.*, 2020). At the same time, cloud has services such as the Virtual Machine Scale Sets that automatically add or remove virtual machine instances, Azure Traffic Manager that ensures optimum routing of traffic to available service regions, Load Balancer which enables the distribution of traffic across multiple virtual machines and Azure Monitor/ Application Insights that keeps track of the health of computing resources. These services are provided by all cloud vendors (Roumani and Nwankpa, 2019). Hence, it is possible to optimize the use of cloud services without explicit manual intervention. In this way, the e-commerce websites do not lose hits and they pay only for virtual machine instances that are needed to manage peak/ nonpeak business. The usage of these emerging technologies can be majorly

affected by the population distribution globally in terms of their age (Table 1). The economies with younger age groups have witnessed rapid application of the technologies in different services they avail.

Table 1: Population distribution of emerging economies as per age groups (%)

Sl.	Country	Age (0-19 years)	Age (20-59 years)	Age (60 years and above)
1	Europe	21.01	53.20	25.70
2	India	35.30	54.60	10.10
3	China	23.40	59.20	17.40
4	Japan	17.00	48.70	34.30
5	Indonesia	34.50	55.50	10.10
6	Brazil	28.30	57.60	14.00
7	USA	24.80	52.30	22.90

Coming to the Indian banks, the evaluation and witnessing of consumer demography and the corresponding behaviorial pattern took off slowly, but the results in the number of mobile wallet users were encouraging with most of them belonging to the youth segment. The mobile wallets like Paytm (founded in 2010 and App launched in 2014), Mobikwik (founded in 2009 and App launched in 2012), Citrus (found in 2011 and App launched in 2014) to name a few. Adding to this list, HDFC bank mobile banking App (launched in 2012, i.e. Chillr, Payzapp etc.), Axix bank mobile App (launched in 2012 as PingPay) and ICICI bank's mobile Banking App (launched on 2008 and "ICICI Pockets" as a mobile banking application with e-wallet is launched in 2015) make money transfer for banking and non-banking consumers using social media and phone lists.

Review of Literature

Banks are using cloud technologies across various functions including for quantifying and minimizing risk, customer support, loan underwriting, recruitment, training and retention, fraudulent transaction detection, core banking analytics, helping risk managers (access, forecast and avoid delinquencies) and helping analysts and investment managers make more grounded valuations (Gozman and Willcocks, 2019). Today, major e-commerce websites such as 'flipkart.com' and 'amazon.in' are available 24x7. Any changes on their websites/ platforms happen without the loss of any traffic or the users ever realizing that changes have happened while they were browsing and adding products to their shopping cart with these changes (Lin *et al.*, 2019). Resultantly, there is a large chunk of services related to banking started adopting various technology of cloud computing. It has been in upswing due to the necessity of stability and

trustworthiness the technology provides at a quicker pace and with more efficiently than the existing and traditional ones (Rashid and Chaturvedi, 2019).

The indiscipline and laxity in consumer service by a section of staff can lead to banks going digital. Advancement would be vital in order to attract and maintain customers. In addition to giving customer delight, payment banks will keep on pleasantly surprising them. The new standard would include understanding customer preferences through online activities such as shopping habits and so on (Chen and Lin, 2019). These insights will assist payment banks to tailor deals and target customer communications effectively. With the advent of various technologies, it has become essential to evaluate the impact of cloud computing services in different market regions. This information can help the strategist and stakeholders understand the awareness level of consumers about the same as well as the possibility of increasing the adoptability in the time to come (Zhang and Watson, 2020). With a proper knowledge and information level of users, the data base of the same can be moved and placed with utmost security. This can lead to create better customer experience with new and unique information related to variations in regional data, behavioural traits of customers as well as futuristic determinants of Cloud Services business (Tripathi and Mishra, 2019).

The technology (like AI, ML, Deep Learning Enterprise Data etc.) which has been ahead of the curve in terms of advancements are capable of delivering effective utilities to the customers and thus can benefit them while using the channels without any hassles, and at the same time availing the products as well as services customized to their requirements and with a quick response from the provider. In India, its greatest hurdle in meeting the rapidly changing expectations and needs of consumers, especially as individuals become increasingly empowered at their fingertips by the wealth of knowledge, due to a majority of beneficiaries belong to an age group (20-59 years) of customers in various states of India (Table 2). The metadata created by likes, browsing, comments, scrolling, and searches are hardly secondary information at all; in fact, the most valuable information there is happening first hand. Few businesses collect and evaluate this form of data effectively. A plan to collect and analyse social data is underway (information generated on social networks and search engines) in a more comprehensive and organised way, alongside the leverage of Meta data (Bhimani *et al.*, 2019). In addition, concerns about privacy violations and breaches of security are common among companies that are understandably worried about operating in areas still constrained by unclear societal norms and legislative limits. However, these issues do not serve as an excuse for not addressing and resolving them and plotting a way forward that defines how to access and use this form of data. To improve the customer experience, the data and metadata stored within these environments are too relevant to be left unaddressed. Therefore, the words 'Omni-channel', 'multi-

channel', 'cross-channel', and 'customer-360' are also used to define the objective of achieving a seamless, high-quality experience through a wide spectrum of digital and physical form factors (Lee *et al.*, 2019).

Table 2: Population with higher potential demographic dividend (%)

Sl.	States	Age (0-19years)	Age (20-59years)	Age (60 years and above)
1	Kerala	27.50	56.20	16.30
2	Tamil Nadu	27.00	59.70	13.30
3	Punjab	28.20	59.40	12.40
4	Andhra Pradesh	28.40	59.60	12.00
5	Maharashtra	29.50	59.00	11.50
6	West Bengal	29.10	59.80	11.00
7	Odisha	32.60	56.60	10.80
8	Gujarat	33.20	56.80	10.00
9	Delhi	29.20	61.10	9.70
10	Chhattisgarh	36.00	54.90	9.10
11	Jharkhand	38.80	52.70	8.50
12	Madhya Pradesh	37.90	53.70	8.40
13	Rajasthan	38.30	53.40	8.30
14	Uttar Pradesh	39.40	52.70	7.90
15	Bihar	43.50	48.90	7.60

The challenge in the digital transformation is mostly because of the frauds occurring in different types of banks, mostly in public sector banks (Table 3). The public sector banks have a good amount of share in terms of frauds as well as the monetary equivalence of those in India.

Table 3: Government owned banks account for most of the frauds in amounts and in instances

Year	Public sector banks				All India totals			
	Amounts involved		No of frauds		Amounts involved		No of frauds	
	Rs. Crore	% of total	Nos	% of total	Rs. Crore	% oftotal	Nos	% of total
2013-14	7,543	74.16	2,591	60.17	10,171	100	4,306	100
2014-15	16,803	86.37	3,113	67.10	19,455	100	4,639	100
215-16	16,910	90.43	2,789	59.43	18,699	100	4,693	100
2016-17	19,530	81.61	2,709	53.46	23,930	100	5,067	100
2017-18	29,247	91.26	2,883	49.04	32,049	100	5,879	100
2018-19	63,283	88.45	3,568	52.48	71,543	100	6,799	100
2019-20	1,48,400	79.94	4,413	50.68	1,85,644	100	8,707	100

The cloud is an architectural change. Further, the Architecture of cloud computing of banks such as (a) User/ Consumed Layer (b) Network layer (c) Cloud Management Layer (d) Hardware Resource layer, etc. A lot of factors can depend on the rate of adoption, e.g. data protection concerns, enforcement and government regulations (Abed and Chavan, 2019). Another consequence of a crisis is the extent of digital interaction. Digital way has become extraordinarily effective and first-time interns of engagement, growth and sustainability are organisations with a clear digital capability. It means digital information dissemination and activations. It is always witnessed that the brands and followers are supported by social media accelerating the gaming and shopping related dimensions (Ariella and Yunus, 2019). In addition to that consumers are also facilitated by live streaming of e-shopping and regular shopping activities with the intervention of public cloud service providers such as AWS, Microsoft dot Azure, IBM Soft Layer and so on. Some others are Reliance, Ctrl-s, Net magic, Tata communications, Airtel etc. The private cloud may exist on or off the premises of a bank. Some of the popular software that is used such as Microsoft system centre, VMware, V cloud, Open Stack, etc.

Objectives of the Study

The study was carried out with the following objectives:

- To explore the factors underlying self-serviced and personalised customer services of banking consumers with the help of cloud computing.
- To ascertain the various dimensions influencing cloud computing specifically in the coastal districts of Odisha.

Research Method

Banking is becoming a technology intensive sector at a faster pace and most banks continue investing in existing digital offerings or introducing new ones. The consumer self-service and personalised experiences as regards to searching the banking solutions during lockdown period has become more prominent by the customers because of pandemic protocols. Thus the method used for the study was mostly exploratory and descriptive in nature. The base of the study was made considering the technological changes and practices happening around the business environment. The data collection was done by interactions with the employees of banks about various features of cloud and compiling the results thereafter. The demographic data, the technological practices and developments in the banks were collected and compiled. At the same time, a structured questionnaire on a five- point Likert scale ranging from '1 = strongly disagree' to '5 = strongly agree' was also used to determine the predictability of the phenomenon. Responses were obtained from 143 respondents belonging to

several banks operating in the coastal regions of Odisha, mostly the twin cities of Bhubaneswar and Cuttack. With the help of SPSS and structural equation modeling (SEM) on AMOS 23.0, the collected data were analyzed subsequently.

Findings and Analysis

Majority of the technologies used by banks drives their several processes like: (a) Process optimization in ATM Analytics.; (b) alternative channels Promotions; (c) Predictive model Building like churn, default cross sell, customer like time value; (d) Delinquency management to maintain asset quality; (e) customer and Campaign Management; (f) Risk management and fraud analytics of which continue their relationship with the bank. Further, The Architecture of cloud computing of banks such as (a) User/ Consumed Layer (b) Network layer (c) Cloud Management Layer (d) Hardware Resource layer, etc.

Due to the lockdowns and protocols of pandemic, nearly everything happens to be online and banks are of no exception. Various announcements by Government of India, during the pandemic period made the customers sensibly taking benefits of technology based services and even beyond lockdown periods in the pursuance of safety and protection of life. As found from the interactions, there are different types of models of cloud services used in the banks of the region such as (a) public cloud provider, (b) private cloud host, (c) a hybrid model. Private cloud models, such as infrastructure as a service (computing resources supplied on an as-need basis) and software as a service (cloud software-hosted tools that allow teams to create and test new applications, products and services), are often best suited to businesses moving purposely to the cloud. For their digital transformation, if hybrid clouds, a model that incorporates elements of public and private cloud resources, are right. The model is a common choice because businesses are able to run versions of their current systems while benefiting from the best of additional resources and technologies. Majority of the respondents are male (76.2 per cent) and female was very few in numbers i.e. 34 (23.8 per cent). Likewise, in marital status, the overall number of respondents married is 78 (54.55 percent) and unmarried 65 (45.45 percent). In age category of the respondents, maximum of the respondents i.e. 52.45 percent of the respondents are in the age group of 50 years where as 36.36 % belonging to 41 to 50 years of age (Table 4).

Table 4: Demographic profiles of the respondents (N=143)

Items		Frequency	Percent	Cumulative Percent
Sex	Male	109	76.2	76.2
	Female	34	23.8	100
	Others	0	0	100
	Total	143	100	
Marital Status	Married	78	54.55	54.55
	Unmarried	65	45.45	100
	Total	143	100	
Age	Below 25 yrs	3	2.1	2.1
	26–40 yrs	13	9.1	11.2
	41–50 yrs	52	36.36	47.56
	50 yrs and above	75	52.45	100
	Total	143	100	
Current Position in the Organisation	Supervisory	56	39.16	39.16
	Assistant manager	25	17.48	56.64
	Deputy Manager	35	24.48	81.12
	Manager	20	13.99	95.11
	Others specify	7	4.9	100
	Total	143	100	
Qualification	Below graduate	10	6.99	6.99
	Graduate	64	44.76	51.75
	Post graduate	46	32.17	83.92
	Professional degree	23	16.08	100
	Total	143	100	
Annual Income (INR – Indian Rupees)	Below 5 lakhs	56	39.16	39.16
	5 - 10 lakhs	60	41.96	81.12
	10 - 20 lakhs	20	13.99	95.11
	20 lakhs and above	7	4.9	100
	Total	143	100	

Further, position wise, 39.16 percent of respondents were found to be at supervisory level, whereas 24.48, 17.48 and 13.99 percent were at deputy manager, assistant manager and manager level respectively. As far as the qualification is concerned, there were 44.76 percent respondents were graduates and 32.17 percent of them were post graduates with 16.08 percent were having professional post-

graduations. Around 41. 96 percent of respondents were having annual income between INR 5 to 10 lakhs and 39.16 percent of them were having income below INR 5 lakhs annually.

Cronbach's value of 0.851 suggested that the variables used in the questionnaire of self-serviced and personalized customer services of bank are internally homogenous and consistent as well (Table 5).

Table 5: Reliability analysis (N = 143)

Cronbach's Alpha	N of Items
0.851	21

Also, the KMO value from the factor analysis was found to be at 0.789 indicating the suitability of factor analysis on the variables selected at a significance level 0.000 i.e. less than 0.05 (Table 6).

Table 6: Factor Analysis (self-serviced and personalised customer services of bank)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.789
Bartlett's Test of Sphericity	Approx. Chi-Square	500.167
	Df	78
	Sig.	*0.000*

Five factors were taken from 21 variables with the Eigen values exceeding 1, and named as Customer Service, Service Solution, Credit Score, Unauthorised Transactions and Assessment. All these factors explained around 67.892 percent of the total variance (Table 7).

Table 7: Self-serviced and personalised customer services of bank

Sl.	Items	Factor loadings
	Factor 1: *Customer Service* (Variance explained 23.350 percent)	
1.	Capturing and resolving customer service requests (QRCF - Query, Request, Complaint, and Feedback).	0.852
2.	The Dashboards and Analytical Reports for control and performance measurement that generate actionable insights and business decisions and policy formulation.	0.652
3.	NPA monitoring and delinquency analysis like Robotic Process Automation (RPA) and data analytics are being extensively used to help solve the problems of re-capitalization, stressed loan resolution and over leveraging in large corporate houses.	0.706

Contd...

	Factor 2: *Service Solution* (Variance explained 18.180 percent)	
4.	The CRM solution supports all the business segments of a bank.	0.7848
5.	Capturing Customer Behavior interest, hobbies etc., and enriching corporate memory, and data resolve.	0.612
6.	Delivering improvised services happened because of the customer's openness in feedback systems and responsiveness	0.772
Factor 3: *Credit Score* (Variance explained 11.140 percent)		
7.	Personal loans to consumers based on analysis of their credit history in fraction of seconds	0.685
8.	The Ad of *Dhamaka* Discounts, Crazy Cash Backs and Peepy promos more digital disrupted	0.688
9.	The submission of Form 15G/H for fixed deposits and retrieve easily.	0.674
10.	The change of Know Your Consumer details and updated	0.632
11.	The access of CIBIL Credit Score is managed easier.	0.742
	Factor 4: *Unauthorised Transactions* (Variance explained 9.121 percent)	
12.	The balance transfer of credit cards, as bank has worked on its front-end user interface design.	0.717
13.	The introduction of e-Locker a virtual online locker facility to store documents	0.727
14.	Spending habits and eve brands the consumer uses frequently and customise offers around those habits.	0.766
15.	Bank shall enable reporting of unauthorised transactions on their website itself for easier consumer grievances redressed.	0.783
16.	All consumers text message alerts and permit reporting of unauthorised transactions through a replay to the alert message.	0.701
	Factor 5: *Assessment* (Variance explained 6.101 percent)	
17.	All transactions are Communicated through encrypted mode. It has also introduced securing features such as PAM (Personal Assurance Message) and CAPTCHA within banking module to safeguard the interest of banking transaction.	0.826
18.	The products are subjected to deep penetration testing and vulnerability assessment before making the products live to the customers. Al based analysis of customers' needs will come to rule the banking system.	0.705
19.	For Consumers, include immersive entertainment based on visual reality or augmented reality to different kinds of gaming such as cloud gaming or multiplayer gaming and 3D shopping or may be using haptic gloves to feel the quality of fabric for 4D shopping.	0.663
20.	Kiosk Banking Solution is an online real-time web based, biometric enabled internet application.	0.619
21.	The Voice based and facial recognition systems are also in progress to cater to uneducated customers.	0.689

By taking these five new factors, a structural model is proposed (Figure 1).

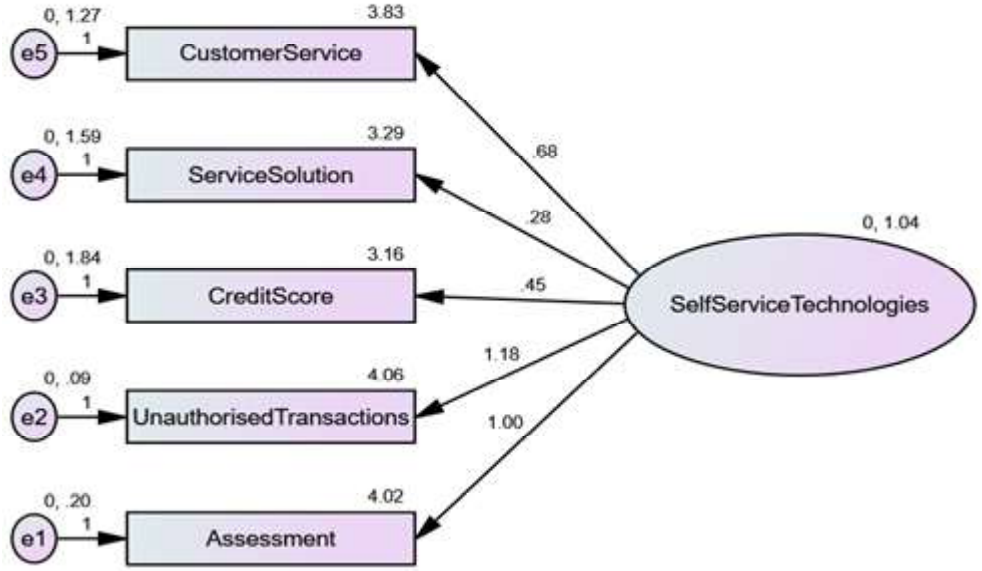

Figure 1: Self serviced and personalised customer services of bank

Subsequently the path analysis results were analyzed to understand the dimensions better (Table 8). For construct adequacy and discriminate validity of the test of Self-Service Technologies (SST) and personalised customer experience cohorts through cloud technology in banking sector, confirmatory factor analysis through AMOS was done to understand the association between observed measures and corresponding constructs. The model fitness was viewed to verify the significance loading of the expected constructs.

Table 8: SEM results of self-serviced and personalised customer services of bank (SST)

Particulars	CFI	RMSEA	GFI	NFI
Chi-square = 136.068	0.902	0.089	0.891	0.887
Degrees of freedom = 5				
Probability level = 0.000				

The model provides a good fitness to the data with the values of Chi-square = 136.068, df = 5, p<0.001, CFI= 0.902, GFI= 0.891, NFI= 0.887, RMSEA=0.089 (Browne and Cudek, 1993; Hu and Bentler, 1999). Also, each item can be seen loading significantly with its intended construct, with the *p*-values less than one per cent, i.e. *p*<.01 (Table 9).

Table 9: Regression analysis (self-serviced and personalised customer services of bank)

Particulars	Estimate	S.E.	C.R.	P Label	
1. Assessment	<—Self-Service Technologies	1.000			
2. UnauthorisedTransactions	<—Self-Service Technologies	1.179	0.085	13.887	***
3. CreditScore	<—Self-Service Technologies	0.446	0.116	3.827	***
4. ServiceSolution	<—Self-Service Technologies	0.282	0.108	2.618	***
5. CustomerService	<—Self-Service Technologies	0.680	0.099	6.835	***

S. E.: Standard Error; C.R: Critical Ratio

With the values of p remains significant (i.e. less than 0.05), the factors indicating the self-serviced and customized services of banks can be supported. The factors, factor Unauthorised Transactions (1.179) is contributing maximum towards objective followed by Assessment (1.000) as found from their estimated value of regression weights.

Conclusion

The study revealed certain dimensions like Self- Service Technologies (SSTs) and Personalised Customer Experience Cohorts vis-à-vis Cloud Technology in order to increase the focus on customer relationship building in the pursuance of understanding the importance of the same in banking services. The customers' security concerns can be one of the vital elements which needs to be seriously considered by the banks irrespective of their types and volumes of transactions. One authorized and secured technological environment can be the effective tools to create a healthy atmosphere for the customers and other stakeholders at large. This can be done effectively with ground breaking technologies like machine learning, artificial intelligence, cloud computing, IOT, block chain etc. while bringing a change in their life style. The high-tech upbringing is expected to give birth to a new set of behaviour, expectations and preferences in to the new work place. The pandemic has accelerated the shift to online retail banking. Some banks are exploring wider market access and enabling them to expand their reach and acquire more consumers. This is ensuring faster delivery and improving the consumer experience in return. The protection of customer data is becoming an integral part of any company's strategic move to prioritize its customers' concerns. In the engagement of customers for self-service technologies, certain factors like the self-evaluation as well as service and solution components configured by the service provider can come into picture.

Implications and Future Scope of Research

The results of the study can be helpful in enabling the banks to reduce their dependencies on traditional ways of catering services and switching over to this cloud services backed by emerging technological tools as described previously. The paradigm shift in favor of self-service technologies is moving at a faster pace due to several factors including the pandemic and global concerns. In adopting the technologies financial consideration by the solution provider can be one of the major challenges. Thus future research can be made in understanding the supporting tool of Cloud technologies in reducing the various cost components in banks as well as other service set ups. In addition to that the service, the infrastructure as well as the storage of data can be dealt with preciseness with the adoption of emerging and effective technologies. The service providers including banks are gearing up to meet the challenges in the near future due to increased use of technology almost replacing human involvement. Therefore, it is also required to make detailed studies on the transformation process at different levels of delivery including retail and investment banking as well. In addition to that the skill and expertise level of employees in handling and managing the processes in a changing environment should be seriously considered and this should be continuously studied and upgraded in the time to come.

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Factors Influencing Consumer Perception towards Electronic Payment System

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Abstract: The purpose of this paper is to explore factors influencing consumer perception towards the Electronic Payment System in India. An in-depth investigation associated to the Technology readiness model were used to create an instrument and to see its impact on the perception. It has been found that optimism; innovativeness; discomfort; and insecurity are the factors impacting the adoption of EPS.

Keywords: Electronic Payment System, Technology readiness, Banking

Introduction

One of the significant aspects of any bank to go online is to set up the required technical know- how and framework which is essential for the smooth running of its operations online and Electronic Payment Systems is no exception to it . Usually the transactions of EPS can be classified into two broad categories namely, cash based which are primarily operated through pre-paid cards and electronic cards and account based systems which operate through cheques, debits and credit card. EPS have been deployed all over the world, with some nations having completely developed systems and others continuously developing (Chandrasekaran, 2021; Roy & Sinha, 2017; Vinitha & Vasantha, 2020). The use of Internet banking is still at a growing stage and use of EPS is still unknown or people are skeptical in its usage. The necessity to achieve transactions using the electronic mode is a successful EPS. The current pandemic situation has motivated many of the Indian to use these EPS though it can be clearly said that India is still at an infant state as far as usage of EPS is concerned. To commence from the venture point that a lot of learning can be done from researches on internet paying systems, payment systems that have been initiated so as to facilitate the payments made over the web (Van der 2003) but electronic payment (e-payment) has become a quiet accepted method nowadays to pay for an online purchase. The attractiveness of this type of payment tool as e-commerce

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is being encouraged due to the growth of internet and internet users. It has given rise to new financial requirements that in many of the cases cannot be successfully fulfilled through traditional payment systems (Singh, 2017). The key difference between the other electronic payment systems and the mobile payment system is basically identification of the customer (and of the merchant). In the case of a mobile payment system, that identification is through the GSM phone number. In case of other systems it is either the bank account number or an interim account (Van der 2003). Lot of issues related to the trust insecurity and threat of loss amongst the users opting for online transactions is very predominant and they are influenced by their perceived security (Chellappa & Pavlou, 2002). Security and trust play a very vital role that is the reason why the EPS providers have to take-up security and trust as most important determinants of adoption of EPS and they should ensure that security and trust are predominantly visible to the consumer while using such services (Chatzipoulidis et al., 2019).

Conceptual Development

Alam et al., (2021) through their study explored the different characteristics of e-payment security concerning the purchase intentions of the e-commerce consumers', Mahmoud, (2020) investigated the technical problem associated with EPS in Libya and found that the people would adopt EPS if they launch it through multimedia which includes promotional techniques. Israel, et al, (2018) stated that materialism influences Credit card (CC) usage and it also increases the propensity for impulsive Buying (IB), which gives acceleration to Consumer Buying habits. It has been pointed that any decrease in the credit card spending usually reduces both Impulsive as well as consumer spending habits, though credit card acted as mediator for materialism but not for impulsive buying. Mona et al, (2018) found that adoption readiness has been mediating the relationship between technology readiness and intention to adopt mobile payments. More essentially, PCs negatively moderate the relationship between AR and IA. Adoption readiness is being impacted by the transactions made with the help of mobiles and are raising privacy related concerns which negatively influence the adoption readiness. Moreover, understanding the attitude of the new users is relatively vital in a country that is moving towards digitalization. Issues like, financial inclusion, tax avoidance can hinder the acceptance of mobile payment technologies. To add the issues related to privacy in India is still facing lot of challenges and there is more resistance in the days to come. A study conducted by Madan et.al (2017) found the variables of UTAUT2 in predicting behavioral intention in mobile shopping are essential except perceived regulatory support. They also pointed out the moderating effect age and gender on the variables. There are three categories of technology adaptors namely Leaders, Followers and Laggards who influence the usage of mobile banking, Deepak and Himanshu

(2017) revealed that there was a significant difference in the attitude and intention of all the above mentioned three groups. Further, TA leaders were followed by the followers and then laggards and age played vital role in the technology adoption and usage. Amit et al, (2017) discovered that perceived ease of use and perceived usefulness significantly influence the user's satisfaction and intention to repetitively use the Mobile wallets. The result also proved that there is remarkable influence of perceived security on the user's satisfaction and the complaint resolving system enables the users to use the mobile wallets frequently. Shalini et al, (2017) found that satisfaction is associated with customer's preference and perception and the study also revealed that speed in accessing the services has also been considered as a vital dimension for the usage of mobile wallets in India. A research conducted by Oney et. Al, (2017) stated that both perceived security and perceived trust possess a positive and substantial effect on the use of EPS. In other words, it states that when people perceive the EPS as secured and trustworthy, they are much more willing to do their transactions electronically.

Maryam et al, (2016) shows an exploratory investigation on important variables inûuencing the trust towards e-payments systems and found that technical and transaction procedures, Usability and access to security guidelines are essential for developing trust in the EPS. Hiram et al, (2016) found that perceived behavioral control, subjective norm and attitude are entirely predicted through their own trusted factors, also they have a positive influence on aim towards using mobile payment system. Although, it is found that subjective norm and perceived safety are considerably different between Chinese and Malays. The results showed that these two ethnic groups were significantly different from each other and also underlined the importance of cultural diversity. Emrah et al, (2016) indicates that both trust and perceived security possess a considerable influence on the use of EPS. Also, past experience and technical protection have been seen as the common factors of perceived security and trust. Wendy et al, (2013) expressed that self-efficacy, benefits and ease of use exerts substantial influences on consumers' perception for e-payment. Additionally, the use of electronic payment by most of the respondents states that such payment devices have an incredible potential for future growth. The challenge is to assure that it continues to meet consumer expectations which will lead to its better use and adoption.

Hypotheses Development

Parasuraman (2000) in his study described the negative concerns as psychological barriers which dampen down enthusiasm for acceptance of technology and badly affect people's technology readiness. He coined the term "technology readiness" (TR), which denotes to people's propensity to use new technology for achieving

goals in home life and at work. (Parasuraman & Colby, 2015) labeled TR as an overall state of mind resulting from a Gestalt of mental contributors and inhibitors that jointly control a person's predisposition to use new technologies. TR is composed of 4 components: Innovativeness (both contributors), Optimism, Insecurity (both inhibitors) and Discomfort. Extant studies have proved the impact of the dimensions of TR on Buying intention and attitude towards a technology. So following Hypotheses have been developed:

H_1: Optimism is a significant parameter that impact positive perception towards EPS.

H_2: Innovativeness is a significant parameter that impact positive perception towards EPS.

H_3: Discomfort is a significant parameter that impact positive perception towards EPS.

H_4: Insecurity is a significant parameter that impact positive perception towards EPS.

Methodology of the Study

Measures and Data Collection

The conceptual framework taken in the present paper was tested using multi-item scales developed by (Parasuraman & Colby, 2015) from prior research. A list of 26 items drafted by (Parasuraman & Colby, 2015) along with perception towards EPS have been clubbed into five items namely, Optimism, Innovativeness, Discomfort, Insecurity and Perception towards EPS. A five-point likert scale (1=strongly disagree and 5= strongly agree) has been used in the study to measure the theoretical constructs. The instrument developed has been tested on 25 respondents for any change or suggestions in the adopted instrument. For safeguarding the reliability of questionnaire content, a pre-test was administered by key experts of the field to ensure validity of the items and avoiding adverse scores. After the pre-testing the suggestions by the EPS users have been incorporated and final instrument was sent across the northern, eastern, central, southern and western parts of Delhi NCR. The sample size consisted of 300 EPS users who had been using EPS on various apps of different banks for the last six months for various purposes. The respondents were personally approached and requested to fill the questionnaire. The finalized research questionnaire was disseminated amongst 250 respondents, yielding 187 completed questionnaires with 74.8 percent response rate.

Analysis

Measurement Model

From the results it is apparent that the Chi-square was significant (÷2/df = 610.906/ 289 = 2.114, P = 0.00) and all the fit indices were within the threshold limits of the model indicating the fitness of the model, GFI = 0.8, NFI = 0.88, TLI = 0.9, CFI = 0.92 and RMSEA = 0.07. The Construct validity was conducted with the help of AVE, CR for all the constructs (Anderson & Gerbing, 1992). All the items measured had significant loading and all CR values for the items were above the threshold limits (Nunnally, 1979) (Table 1& Table 2). Validity of the model was established by estimating convergent validity and discriminant validity. As seen in Table 3, all items were found to have standardized regression weights above the cut-off value of 0.60 and were statistically significant with p value less than 0.001 (Hair et al., 2010). The AVE for all latent constructs was estimated and were found to be above the threshold value of 0.50 as well (Hair et al., 2010). As shown in Table 1, the squared root of AVE exhibited for each latent construct was higher than the inter-correlation estimates with other corresponding constructs (Fornell & Larcker, 1981). Therefore, convergent and discriminant validity were established.

Table 1: Measurement model results

Factor Code	Construct and measures	Standardized loading
	Optimism (CR=0.777, AVE=0.808)	
OP1	Electronic payment service gives me more control over my everyday life.	.596
OP2	I like the idea of using electronic payments because I'm not limited to regular payment hours.	.577
OP3	I prefer using the most advanced available technology.	.738
OP4	Electronic payments allow me to do transactions anywhere, giving me greater freedom of mobility	.412
OP5	I think it can be as rewarding to learn about new technology as the technology itself.	.350
	Innovativeness (CR=0.747, AVE=0.877)	
IN1	For advice on new technologies, people come to me.	.547
IN2	Generally speaking, I am the first to acquire new technologies among my friends.	.747
IN3	Usually, I am able to figure out new high-tech products and services as soon as they are introduced, without taking any help from others.	.625
IN4	I keep updated myself with the latest technological developments in my area of interest.	.470

Contd...

IN5	I find less technical problems when using electronic payment services than other people.	.644
	Discomfort (CR=0.721, AVE=0.964)	
DC1	Technical support is less helpful because they don't use simple terms that can be easily understood.	.119
DC2	Sometimes, I think that electronic payment services are not designed to be used by ordinary people	.672
DC3	There is no such thing as a manual written in plain language for electronic payment service	.017
DC4	When I receive technical support from an electronic payment service provider, I feel that because of my ignorance they may exploit me.	.371
DC5	I prefer using the basic electronic payment service over one with many additional features.	.463
	Insecurity(CR=0.747, AVE=0.877)	
IS1	I feel that using electronic payment is not safe.	.634
IS2	I feel insecure in doing business with a place that can be reached online only.	.244
IS3	I should receive something in writing as a confirmation, for the transaction done using electronic payment	.288
IS4	I check carefully that the system is not making any error, when something gets automated.	.327
IS5	While doing financial transaction, I feel that it is essential to have human touch.	.475
	Perception to EPS (CR=0.839, AVE=0.968)	
PEPS1	An electronic payment service is better than traditional payment services	.570
PEPS2	I will choose the trusted electronic payment service to make payment	.627
PEPS3	I feel that a user-friendly electronic payment service will influence me to adopt the system	.668
PEPS4	Electronic payment service is much more efficient than traditional payment channels	.762
PEPS5	I think that using electronic payment service can offer me a wider range of banking services and payment options	.758
PEPS6	I think, use of electronic payment service is convenient	.699

Table 2: Discriminant validity

	CR	AVE	IS	OP	IN	DC	PEP
IS	0.744	0.875	0.718				
OP	0.777	0.808	0.458	0.755			
IN	0.747	0.877	0.226	0.551	0.614		
DC	0.721	0.964	0.942	0.098	0.022	0.705	
PEP	0.839	0.968	0.440	1.045	0.559	0.046	0.884

Structural Model

The empirical model proposed for the study examines the relationship between dependent variables (perception towards EPS) and the four antecedents namely, Optimism, Innovativeness, Discomfort and Insecurity. The model also tests the impact of four antecedents namely, Optimism, Innovativeness, Discomfort and Insecurity on the perception towards EPS. The results indicated that the Chi-square was significant (÷2/df = 594.599/288 = 2.065, p = 0.00); rest of the fit indices of the structural model were found to be within the threshold values, GFI = 0.78, NFI = 0.88, TLI = 0.9 CFI = 0.91 and RMSEA = 0.07, thus suggesting that the structural model adequately fits the data. The results of hypotheses testing and significant level observed for each hypothesis path are shown in Table 3. All the research hypotheses (H1,H2, H3, H4) were supported (Figure 3).

Table 3: Hypotheses test results

Hypothesis	Path Relationship		â value	p value
H1	PREPS ←	ß	OP	.166***
H2	PREPS ←	ß	IN	.130***
H3	PREPS ←	ß	DC	.795***
H4	PREPS ←	ß	IS	.320***

*** p < 0.001

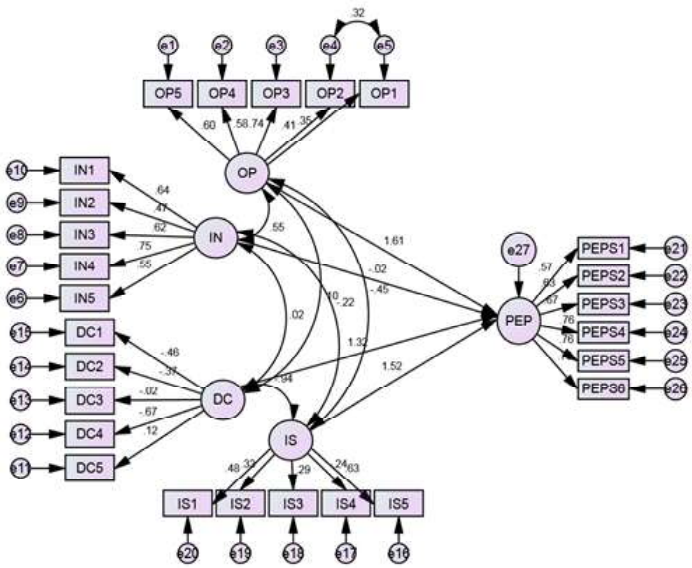

Figure 1: Path analysis

Discussion and Implications

With a monstrous drive to go advanced in all circles of life, computerized methods of installment are becoming famous. E-wallets have seen an outstanding improvement in India after ongoing demonetization and the weighty money crunch. Such drives of the Indian Government will expand the reception of all computerized installment frameworks including advanced wallets and will help in the progress from a money based economy to credit only economy (Sen, 2016). Indian economy has seen rapid rise in the internet users, opening of bank accounts thus increasing the use of EPS. Role of govt. policies play an important role in increasing the EPS. Moreover, the risk of security and establishing trust is still subject of concern. The present study highlights the various parameters that directly influence the user to adopt EPS. To elaborate the parameter viz. Optimism which consists of statements like advanced technology, freedom, learning new technology and confidence clearly depict that for the adoption of EPS, it is essential to have a positive approach. So the developers need to work on such issues which give the user a greater trust and sense of confidence while using these EPS.

The second factor that effects the perception of EPS is innovativeness, which indicates that the items like, high end technology, less problems faced and eco-friendly are the key elements which drive a user to adopt to EPS. Cell phones are by and large logically more utilized for requesting, contrasting, scanning and making installments for different labor and products on the web (Hung et al., 2012).

Further, the third factor, discomfort, in using the technology may develop a negative mindset in using these EPS and may also lead to non-usage and adoption of EPS. The simplicity of making financial trades and besides a safer and quicker admittance to capital assets, among various different parts, has placed e-installment framework on a commended step than the money cash based framework.

The next factor is insecurity, which can be used as a synonym to trust, which has been highlighted in various studies (Hossein et al., 2013; Kramer et al., 2016; Pratap & Binha, 2018). Insecurity arising out of lack of trust may always lead to the non-usage and discontinuation of using EPS. Usually the places where financial services are involved trust play a vital role and distrust leads to insecurity. So the marketers need to ensure that they develop trust amongst the user of the EPS so that insecurity does not develop. Further India has lot of growth potential and marketers need to tap the market. A review directed by BCG and Google predicts that the Indian computerized installment industry will see a development of multiple times to reach $500 bn by 2020 and it will be contributing 15% to the GDP. The concentrate likewise features that in 2020, most of India's web clients

will take on advanced installment frameworks because of high versatile availability and web infiltration (Shah et al., 2016).

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Drone Delivery Services Adoption among Indian Consumers

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Abstract: The present study is aimed to find the factors affecting drone adoption intention among the households after Covid-19. The data was collected using survey method from 157 respondents in India. The findings revealed that households intend to adopt drone for delivery services due to family safety and security concern after Covid-19 as drone are a faster means of delivery. Moreover, the green image of drone was also found significant in the present study. Thereafter, multiple regression was conducted on the extracted variables and adoption intention.

Keywords: Drone, delivery, green image, speed, family safety, desire, intention

Introduction

Drones are attracting a huge public interest in India. The union government in India has notified the "Drone Certification Scheme" to make India as "Drone hub of the world" by the year 2030 (Thathoo, 2022). This will make the drone industry to achieve upto 20 bn dollar (Sinha, 2021) industry. For this 5000-crore investment is planned by the government (News. 18, 2021). Drones have many advantages to the human beings and are used to enhance the service delivery process in different contexts (Choe et al., 2021; Ramadan et al., 2017; Mathew et al., 2021; Song et al., 2021; Yoo et al., 2018).

The delivery through drones not only reduces the time and cost (Jaramillo et al., 2019) but also increases the customer expectations of the improved service quality (Yoo et al., 2018; Jaramillo). Improved delivery speed and security are some other benefits of using drones for delivery purposes (Joerss et al., 2016). Despite such benefits of drone in delivery services (DDS), the research in this field is very few and attracting the attention of the researchers. According to a report by

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(Wion Web Team, 2021), after Covid-19, one third of the Britishers are preferring to stay at home and are of the opinion to shun their social gatherings. Covid-19 has changed the level of adoption intention, thereby risk of using drones has decreased whereas its adoption intention has increased (Schaarschmidt et al., 2021). Moreover, after Covid-19 everyone is concerned about the security of their family by staying at home, drone as a channel of delivery can prove of substantial advantage. The drones also represent an image of green product (Hwang & Kim, 2019) and are more trusted by the community (Nelson & Gorichanaz, 2019; Hardy et al., 2022).

Despite these potential characteristics the knowledge about factors influencing Indian people to adopt drones for delivering provices is limited and there is a dearth of behavioural studies in the subject. This study is intended to explore the adoption intention of drones for delivery of provices as studying the determinants of adoption intention would benefit the marketers. This study first performed factor analysis to determine the factors and afterwards, multiple regression is conducted between the extracted factors and adoption intention.

Review of Literature

Drone delivery

Drones are also known as Unmanned aerial Vehicles (UAV) used for delivery services (Yoo et al., 2018). Besides many advantages of drones like cost effective, speed of delivery these are also environmentally friendly (Yoo et al., 2018). Therefore, drones are the new way of product delivery. After e-commerce companies (Mangiaracina et al., 2019), many other companies have started using drones for delivery purposes (Magistretti and Dell'Era, 2019). Hence, drones can prove to improve the efficiency of delivery (Anbaroðlu, 2017). Drones are very useful in providing emergency logistics services (Mangiaracina et al., 2019). However, scholars have stressed a need to identify the factors affecting adoption intention of drone delivery services on different group of people (Holzmann et al., 2021). Besides, individual characteristics like desire, attitude and adoption intention of using drones, the green image of drones, speed of delivery, family safety and security have not received much attention.

Green Image and adoption intention of drones

First, the green image is related to environmental commitments of individuals (Martinez, 2015), sometimes also called as environmentally friendly (Han et al., 2009) image. Consumers have now begun to recognize the importance of environment protection (Cherian & Jacob, 2012) and purchasing products and services that are environmentally friendly (Jansson et al., 2010). Drones can help in reducing the green house emission over the traditional ways of delivery (Stolaroff et al., 2018). Drones do not cause environmental pollution (Goodchild

& Toy, 2018) due to its battery-operated feature as compared to trucks (Rose, 2013). The green image improves the consumer purchasing behaviour of the products (Wu et al., 2016). Higher the green image of drones more positive is the consumer attitude (Hwang & Kim, 2019). From the existing literature it is hypothesized that:

H_1: Green image and adoption intention of DDS are related

Speed of Delivery and adoption intention of drones

The main advantage of drone delivery is its speed (Yoo & Chankov, 2018; Liu et al., 2020; Ganjipour & Edrisi, 2022), over the traditional modes of transport (Mathew et al., 2021). One can accurately judge the time of delivery while using drones (Yoo et al., 2018). According to Lee et al. (2016) the perceived delivery over drones is fast, accurate and environmentally friendly (Goodchild & Toy, 2018). For urban areas drone proves to be very efficient means of delivery (Anbaroðlu, 2017). The road infrastructure and traffic does not influence the drone deliveries (Yoo et al., 2018). The drones thus add to consumer value of speed (Bamburry, 2015). This speedy delivery saves human time and adds to convenience (Kang et al., 2015). Based on above literature, we conclude that:

H_2: Speed of delivery and adoption intention of DDS are related

Family safety & security and adoption intention of drones

Family safety & security are prominent concern of the consumers after Covid-19 pandemic (Gadermann et al., 2021). Hence individuals are now perceiving the contactless deliveries as very important in this regard (Zhao & Bacao, 2020; Choe et al., 2021). Contactless deliveries are attracting the attention in different sectors including food service industry (Hwang et al., 2020). Here, drones prove to be an efficient mode of contactless deliveries (Choe et al., 2021; Wu et al., 2022; Zhao et al., 2022; Alkouz et al., 2021; Schaarschmidt et al., 2021). Hence it is assumed that:

H_3: Family safety & security concern and adoption intention of DDS are related

Desire and adoption intention of drones

Desire is "a state of mind whereby an agent has a personal motivation to perform an action or to achieve a goal" (Perugini & Bagozzi, 2004). Desire is very important in predicting the intention to use (Hwang et al., 2019; Song et al., 2017; Zhang & Moon, 2017). A try to engaging in a certain behavior is desire which creates behavioral intention (Perugini & Bagozzi, 2004). Extent studies have examined the role of desire in framing the behavioral intentions of the consumers (Han et al., 2015; Lee et al., 2020). People desire to use drones is very significant in framing their adoption intention (Hwang & Kim, 2019; Chen et al., 2018; Hwang

et al., 2019). Hence, we hypothesize that:

H_4: Individual desire and adoption intention of DDS are related

Methodology

Individual household consumers at shopping stores (Rahbar & Wahid, 2011) in India were the sample population in the present work. Mall intercept method was adopted for data collection (Bush & Hair Jr, 1985; Kumar et al., 2022) using convenience sampling at shopping malls in India. These people were approached with a structured questionnaire at the exit of shopping mall and were requested to fill the questionnaire (Rai, 2018). A total 157 people participated in the survey. The questionnaire items were identified from previous studies of (Hwang & Kim, 2019; Hwang et al., 2019; Yoo et al., 2018; Saleh, 2003) on a 7-point Likert scale where 1 considers strongly disagree and 7 considers strongly agree statement of the respondent.

Analysis and Results

The respondent's profile is presented in Table 1. The ratio of male to female respondents is 78.3% and 21.7% respectively. The respondents were from age group between 20-30 years (73.2%), 30-40 years (16.6%), 40-50 years (8.3%) and above 50 years (1.9%). As per the education level 24.8% were graduates, 54.1% postgraduate, 14% doctorate, 7% other degrees. From Bihar 30.6%, Uttar Pradesh (26.8%), Himachal Pradesh (22.3%), and Jharkhand (20.3) participated. Majority of the respondents were from urban area 60.5% with annual income below 10 lakh (78.3%) and married (69.4%). These respondents have 4-6 family members in majority (67.5%) with maximum 5 kids in a family who are below 10 years (89.2%) and maximum 5 old persons above 65 years age (91.1%). It is found that 78.3% respondents had the idea about drone and they agree that drone can be a preferred mode of delivering products (73.9%).

Table 1: Demographic profile of respondents

Category	Number	Percentage
Gender		
Male	123	78.3
Female	34	21.7
Total	157	100.0
Age		
20-30 Years	115	73.2
30-40 Years	26	16.6

Contd...

40-50 Years	13	8.3
50 above	3	1.9
Total	157	100.0
Education		
Graduate	39	24.8
Post Graduate	85	54.1
Doctorate	22	14.0
Others	11	7.0
Total	157	100.0
State		
Uttar Pradesh	42	26.8
Himachal Pradesh	35	22.3
Bihar	48	30.6
Jharkhand	32	20.3
Total	157	100.0
Area of Residence		
Rural	62	39.5
Urban	95	60.5
Total	157	100.0
Marital Status		
Unmarried	45	28.7
Married	109	69.4
Others	3	1.9
Total	157	100.0
Annual Income		
Less Than 10 Lakh	123	78.3
10-20 Lakh	32	20.4
Above 20 Lakh	2	1.3
Total	157	100.0
Number of Family Members		
1-3	27	17.2
4-6	106	67.5
7-9	17	10.8
above 9	7	4.5
Total	157	100.0
No. of Kids below 10 years		

Contd...

Less than 5	140	89.2
More Than 5	17	10.8
Total	157	100.0
No. of persons above 65 Years		
Less than 5	143	91.1
More Than 5	14	8.9
Total	157	100.0
Idea about drone services		
Yes	123	78.3
No	23	14.6
Can't say	10	6.4
Total	157	100.0
Do you agree that drones can be used as a preferred mode of service delivery?		
Yes	116	73.9
No	18	11.5
Can't say	23	14.6
Total	157	100.0

Table 2: KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.630
Bartlett's Test of Sphericity	Approx. Chi-Square	4962.470
	df	66
	Sig.	.000

Exploratory Factor Analysis

The present study used the varimax technique of exploratory factor analysis to explore the reasons to adopt drones for provices delivery. Four factors were extracted explaining 76.59% variance.

Factor 1 (Family Safety and Security) accounts for 45.55% variance. Factor 2 (Speed of Delivery) accounts for 12.248% variance. Factor 3 (Desire to use) accounts for 9.99 % variance. Factor 4 (Green Image) accounts for 8.80% variance. All the items possessed factor loading value greater than 0.5. The value of KMO was 0.63 which is acceptable (Astuti & Soliha, 2021; Yap et al., 2018; Paulrajan & Rajkumar, 2011) and Bartlett's test of sphericity was significant (Williams et al., 2010).

Table 3: Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.466	45.554	45.554	5.466	45.554	45.554	3.628	30.230	30.230
2	1.470	12.248	57.802	1.470	12.248	57.802	2.016	16.796	47.026
3	1.199	9.990	67.792	1.199	9.990	67.792	1.989	16.571	63.597
4	1.057	8.807	76.599	1.057	8.807	76.599	1.560	13.001	76.599
5	.706	5.880	82.478						
6	.626	5.218	87.697						
7	.453	3.772	91.469						
8	.411	3.422	94.891						
9	.289	2.411	97.302						
10	.263	2.195	99.497						
11	.053	.446	99.943						
12	.007	.057	100.000						

Extraction Method: Principal Component Analysis.

Table 4: Rotated component matrix[a]

	Component			
	1	2	3	4
Family Safety & Security 1	0.699			
Family Safety & Security 2	0.841			
Family Safety & Security 3	0.908			
Speed of Delivery 1		0.603		
Speed of Delivery 2		0.842		
Speed of Delivery 3		0.754		
Desire 1			0.872	
Desire 2			0.716	
Desire 3			0.761	
Green Image 1				0.875
Green Image 2				0.776
Green Image 3				0.902

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Multiple Regression Results

The hypotheses H_1-H_4 were tested using multiple regression and found significant except H_4. Table 5 represents the results of multiple regression. Hypothesis H_1 is confirmed that green image is positively related with adoption intention of drone. H_2 is also confirmed that speed of delivery is positively related with adoption intention of drone for product delivery services. The family safety and security concern is found to be significantly and positively related with adoption intention of drone for product delivery services. The hypothesis H_4 failed to explain the association among desire to use and adoption intention. Overall, the results explained 45.2% R^2. Family safety & security is the strongest factors influencing the decision to adopt drones for provices, may be after Covid-19 people are now more concerned about their family members and their health. Second, is speed of delivery because of the speedy delivery advantage, people do not have to wait for needed provices. Third is green image which reflects that consumer are now recognizing the importance of environment protection (Cherian & Jacob, 2012). Since, drones do not cause environmental pollution (Goodchild & Toy, 2018). This makes drones a significant choice to adopt drones for provices delivery.

Table 5: Regression results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Speed of Delivery	.187	.038	.224	4.933	.000
Green Image	.176	.045	.181	3.911	.000
Family safety & Security	.406	.035	.436	11.716	.000
Desire	.069	.062	.038	1.108	.268

a. Dependent Variable: Adoption Intention

Discussion and Conclusion

According to Saleh (2003), the family security & safety are an important factor which determines the adoption intention. The findings of the present study are similar to the literature (Saleh, 2003; Gadermann et al., 2021). For some people the speed of delivery is a very important factor to be considered in deciding the adoption intention of drone. This represents that drone benefits by a contactless, faster, and quick delivery service which is the need of hour. The results are alike to previous studies (Yoo et al., 2018). Drones have a green image represented by their environmental protection features. Hence drones have a strong environmental reputation as alike in previous studies (Hwang &

Kim, 2019). The consumer desire to use drones for delivery services is also important (Hwang et al., 2019), but is insignificant in the present context. This may be due to the reason that although consumers desire to use drones but their major concern is the family safety and security after the Covid-19 pandemic.

Implications

The present study has some managerial implications as the consumer adoption intention before the actual launch of drones is examined. This will help and create many possibilities in drone market after they are commercialized in the near future. Identifying the factors of adoption intention of drones for delivery is very important to establish a roadmap for development in the technology and marketing strategies for drone delivery services. People are more concerned about the family safety after Covid-19 pandemic (Gadermann et al., 2021) and expect a speedy delivery of products (Bamburry, 2015), the person-focused strategies may be adopted by the companies to change their perceptions and offer a new client experience. Despite of the benefits of using drones (Park et al., 2018), the benefits are not sufficient to develop the consumer acceptance, rather emphasizing on green image, safety & security of family, green image and speed of delivery may help the drone industry to flourish in delivering provices.

The study has some academic implications also. First the study explored the important factors of adoption intention of drones and proves to be an added-on advantage to the literature. Numerous studies have analyzed these factors of adoption intention The study explored an important variable family safety & security concern as an important determinant to adopt drone-based deliveries after Covid-19 pandemic, which is an important theoretical contribution of the study.

Limitations

The present like others have some limitations irrespective of its significant findings. First the study was confined to a small geographical area and the results are not feasible to be generalized for the whole nation. Second, the time period of study was short, hence future studies using longitudinal design can prove advantageous for academic and managerial community. Moreover, the SEM technique can be used in the future to overcome the present limitations.

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