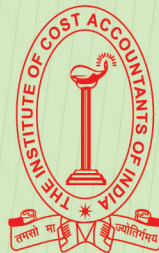




RESEARCH BULLETIN



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

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The CMA professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting.

The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally.

Vision Statement

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President

The Institute of Cost Accountants of India

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FOREWORD

Research and innovation plays a crucial role in triggering smart and sustainable growth and job creation. By producing new knowledge, research is essential to developing new and innovative products, processes and services, which enable higher productivity, industrial competitiveness, and ultimately prosperity.

Thus, it gives me an immense pleasure to present esteemed Research Bulletin of the Institute, Vol.47, No. III IV, October 2021 & January 2022 issue. This issue is non-theme based.

We mainly publish articles related to various blazing topics of Cost and Management issues so that our readers remain informed and updated to the latest developments in the cost and management accounting principles and practices, consequently can incorporate such changes for sustained vitality of their industry and other economic activities.

Wish you all a happy reading and hope you would find it to be an extremely useful tool to enrich your knowledge base.

CMA P. Raju Iyer

President

The Institute of Cost Accountants of India

CHAIRMAN'S COMMUNIQUÉ

It is a privilege for me to announce the release of Research Bulletin, Vol.47, No. III & IV October 2021 & January 2022 issue. Our Research Bulletin mainly emphasizes on pragmatic research articles and has a much wider reader base consisting of academicians, researchers, professionals and practitioners.

This publication brings you in-depth research insights on a wide range of topics on contemporary issues like, Portfolio Investment, Company Risk Measurement, Performance Assessment through Sustainable Value Added (SVA), CSR, Banking, Impact of Covid-19 on Physical & Mental Health of Youth, Case Studies, etc. well-written by researchers, academicians and professionals.

I take this opportunity to express my gratitude to all the contributors for their sincere effort to publish this volume in time.

The readers are invited to tender their valuable feedback towards enrichment of Research Bulletin.

Suggestions for improvement of this Bulletin shall be highly appreciated.

CMA (Dr.) K Ch A V S N Murthy
Chairman
Journal & Publications Committee
The Institute of Cost Accountants of India

EDITOR'S NOTE

Greetings!!!

The rise of digital innovations also represents a major evolution in cost management strategies, providing companies with the opportunity to gain a much deeper perceptiveness of their business's prime value levers, which they can use to fundamentally and sustainably transform their cost structures, seize opportunities, and grow profitably. Our present volume of Research Bulletin, Vol.47, No.III & IV issue comprises of various blazing topics like Portfolio Investment, Company Risk Measurement, Performance Assessment through Sustainable Value Added (SVA), CSR, Banking, Health, etc. would surely improve and keep informed the readers. We publish both theme based and non theme based articles on the contemporary issues. Inputs are mainly received both from academicians and the corporate stalwarts. Our attempt is to draw attention towards environmental, social, economical and market-related issues, so that the researchers and decision-makers can enrich their knowledge base and can take strategic decisions deliberately.

We are extremely happy to convey that our next issue of *Research Bulletin, Vol.48, No. I* is a non-theme one.

We look forward to constructive feedback from our readers on the articles and overall development of the Research Bulletin. Please send your mails at research.bulletin@icmai.in. We thank all the contributors and reviewers of this important issue and hope our readers enjoy the articles.

Warm regards,

CMA (Dr.) Debaprosanna Nandy

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An Analytical Study on Impact of Covid-19 on Physical & Mental Health of Youth of Gujarat State

Manish B. Raval

Ashish B. Gorvadiya

Hardita Dhamelia

Abstract:

The COVID-19 pandemic has created disaster all over the world. Generally, it happens that the pandemic kills either man or animals, but this pandemic is so severe that it kills the whole economy. Since the outbreak of this COVID-19, the countries all over the world are struggling to get back on the normal track, but the majority of them have failed. India is not an exception to it. Lock down created danger on the economic wellbeing, physical wellbeing and mental wellbeing of the people. In this research paper, the researchers have tried to analyze the impact of COVID-19 on the physical and mental health of the youth of Gujarat. The researchers have checked differences in the impact on the physical and mental health of youth on the basis of their gender, age, marital status, residential location and occupation. It is concluded that the COVID-19 and the resultant Lockdown has created mental and physical impact on the youth in the equal manner irrespective of their age group, marital status, residential location and occupation.

Key Word:

COVID-19, Pandemic, Physical Health, Mental Health, Youth

Introduction:

COVID-19 Corona Virus emerges in Wuhan of China and spread throughout the whole world. The virus created unprecedented conditions for the people. The pandemic is so severe that the super powers of the world are also seeming meager in front of the COVID-19. The pandemic has created disaster all over the world. Generally, it happens that the pandemic kills either man or animals, but this pandemic is so severe that it kills the whole economy. Since the outbreak of this COVID-19, the countries all over the world are struggling to get back on the normal track, but the majority of them have failed. India is not an exception to it. In India also, the virus has created disastrous effect on the physical and mental health of the people along with the adverse effect on the economic conditions. With the help of Lock-Down, the Government of India tried to keep the virus under control. With the help of lock down, on the front of controlling the spread of virus, the government succeed up to a certain level, but the lockdown created several problems on other fronts. Lock down created danger on the economic wellbeing, physical wellbeing and mental wellbeing of the people. In this research paper, the researchers have tried to analyze the impact of COVID-19 on the physical

and mental health of the youth of Gujarat. The researchers have checked differences in the impact on the youth on the basis of their gender, age, marital status, residential location and occupation.

Review of Literature:

In order to review the existing literature on the effect of COVID-19 on the Physical and Mental Health of the youth, the researchers have analyzed following literature:

Bonanno, G., A., Galea, S., Bucciarelli, A., and Vlahov, D., (2007)¹ presented a study to examine the pattern of association between resilience and various socio-contextual factors. The researchers conducted survey in the New York city after terrorist attack. The researchers found that the resilience was developed in the respondents' posttraumatic situation. The researchers studied the effects of gender, age, race/ethnicity, education, level of exposure to trauma, income change, etc. on the development of resilience.

Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., and Zheng, J., (2020),² have studied the effects of COVID-19 epidemic in spread in China and in other parts of

¹Bonanno, G., A., Galea, S., Bucciarelli, A., and Vlahov, D., (2007) "What predicts psychological resilience after disaster? The role of demographics, resources, and life stress", *J Consult Clin Psychol*, 75(5):671-82. doi: 10.1037/0022-006X.75.5.671. PMID: 17907849.

the world. The researchers are of the view that the pandemic has brought not only the risk of death but also the psychological pressure thereafter. In order to study the psychological impact of the pandemic, the researcher developed a questionnaire which included anxiety disorder scale and collected 7,143 responses. The researchers found that 0.9% of the respondents were experiencing severe anxiety, 2.7% were experiencing mild anxiety and 21.3% of the respondents were experiencing mild anxiety due to COVID-19 pandemic.

Holingue, C., Badillo-Goicoechea, E., Riehm, K., E., Veldhuis, C., B., Thrul, J., Johnson, R., M., Fallin, M., D., Kreuter, F., Stuart, E., A., and Kalb, L., G., (2020),³ presented a research paper titled “Mental distress during the COVID-19 pandemic among US adults without a pre-existing mental health condition: Findings

from American trend panel survey”. In this research paper, the researchers studied the frequency, risk and protective factors of psychological distress during COVID-19 pandemic outbreak in US. The researchers survey 9687 respondents without prior history of mental health condition. The researchers found that the respondents were feeling psychological distress measured by five symptoms namely, anxiety, depression, loneliness, sleep difficulties and hyperarousal.

Rajkumar, R., P., (2020),⁴ has made analysis of existing literature on the effect of COVID-19 on the mental health of the people. The researcher concluded that COVID-19 created stress, anxiety, depression, disturbed sleep, etc. psychological problems on the people. The researcher suggests to take preventive measures to reduce such psychological effects.

Shiller, R., K., (2020),⁵ has presented his views in the World Economic Forum. The author is the professor of Economics at Yale University. He is of the view that the COVID-19 has brought two pandemics. The first one affects the physical health of

² Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., and Zheng, J., (2020), “The psychological impact of the COVID-19 epidemic on college students in China”, *Psychiatry Res.*, May;287:112934. doi: 10.1016/j.psychres.2020.112934. Epub 2020 Mar 20. PMID: 32229390; PMCID: PMC7102633.

³ Holingue, C., Badillo-Goicoechea, E., Riehm, K., E., Veldhuis, C., B., Thrul, J., Johnson, R., M., Fallin, M., D., Kreuter, F., Stuart, E., A., and Kalb, L., G., (2020), “Mental distress during the COVID-19 pandemic among US adults without a pre-existing mental health condition: Findings from American trend panel survey”. *Prev Med.*, 139:106231. doi: 10.1016/j.ypmed.2020.106231. Epub 2020 Aug 3. PMID: 32758507; PMCID: PMC7846292.

⁴ Rajkumar, R., P., (2020), “COVID-19 and Mental Health: A Review of Existing Literature”, *Asian Journal of Psychiatry*, 52, PP, 1-5.

⁵ Shiller, R., K., (2020), “COVID-19 has brought about a second pandemic: financial anxiety”, *World Economic Forum, Unacast, Social Distancing Scoreboard*.

the victim and the second one is the anxiety over the economic consequences of the first one. The authors says that the pandemic has brought the financial insecurity in the society. The stock markets are falling due to the outbreak of pandemic and the people are facing unemployment and financial insecurity. They are losing their lifetime savings due to this unemployment.

Zhai, Y., Du, X., (2020),⁶ have studied the mental health issues of International Chinese Students due to outbreak of COVID-19. They have studied that the COVID-19 has affected the students' mental health adversely. They have also suggested some remedies to remove these adverse effects.

Duan, L., Zhu, G., (2020),⁷ have observed the psychological effect of COVID-19 epidemic on the people. They came to the conclusion that the epidemic has created lot of misery to the people. People are facing mental problems due to the pandemic. This pandemic has snatched the mental peace of the people.

Objective of the Study:

This study is undertaken with the following

⁶Zhai, Y., Du, X., (2020), "Mental Health Care for International Chinese Students Affected by COVID-19 Outbreak", *Lancet Psychiatry*, 7, P., 22.

⁷Duan, L., Zhu, G., (2020), "Psychological Interventions for the People Affected by the COVID-19 Epidemic", *The Lancet Psychiatry*, 1;7(4), PP., 300-302.

objectives:

- To analyze the impact of COVID-19 on the physical health of the youth of Gujarat.
- To analyze the impact of COVID-19 on the mental health of the youth of Gujarat.
- To identify the remedies of the impact of COVID-19.

Research Methodology:

In order to accomplish the objectives of this research work, the following research methodology is used by the researchers.

● **Title of the Study:**

The present research work is titled as:

An Analytical Study on Impact of Covid-19 on Physical & Mental Health of Youth of Gujarat State

● **Population and Sample Size:**

The researchers wanted to analyze the physical and mental impact of COVID-19 lockdown on the youth of Gujarat. In order to collect the responses from the youth an Online Structured Questionnaire was prepared and the same was spread across Gujarat using various Social Media Platforms. Total 467 responses were received. So, the sample size of the present research is 467 youth respondents.

Table - 1
A Table Showing Classification of Sample

Demographic Variable	Classification		Total
Gender	Male	178	467
	Female	289	
Age Group	20-25	304	467
	25-30	97	
	30-35	66	
Marital Status	Married	93	467
	Unmarried	374	
Location	Urban	367	467
	Semi-Urban	63	
	Rural	37	
Occupation	Students	258	467
	Employed	159	
	Business	19	
	Unemployed	12	
	Others	19	

● **Method of Data Collection:**

The present research work is based on Primary Data. In order to collect the responses from the youth an Online Structured Questionnaire was prepared and the same was spread across Gujarat using various Social Media Platforms. Total 467 responses were received. So, the sample size of the present research is 467 youth respondents. The following table shows the summary of the responses received based on the selected demographic variables.

● **Tools and Techniques:**

In order to achieve the objectives of this research work, statistical analysis is required. The researchers have used ANOVA for the Statistical Analysis. As the limitations of the length of the paper is to be taken care of the researcher have put the results of statistical analysis in the tabular format.

Statistical Analysis:

In order to achieve the objectives of this

Table - 2
A Table Showing Result of Testing of Hypothesis

Null Hypothesis (H ₀)	F Cal.	Significant Value	Status of H ₀
Physical Health Issues:			
There is no significant difference in Physical Health Issues of the respondents among different Gender	4.409	0.036	Rejected
There is no significant difference in Physical Health Issues of the respondents among different Age Groups	2.677	0.070	Accepted
There is no significant difference in Physical Health Issues of the respondents among different Marital Status	1.647	0.200	Accepted
There is no significant difference in Physical Health Issues of the respondents among different Location	2.971	0.052	Accepted
There is no significant difference in Physical Health Issues of the respondents among different Occupation	0.893	0.468	Accepted
Mental Health Issues:			
There is no significant difference in Mental Health Issues of the respondents among different Gender	0.546	0.460	Accepted
There is no significant difference in Mental Health Issues of the respondents among different Age Groups	1.825	0.162	Accepted
There is no significant difference in Mental Health Issues of the respondents among different Marital Status	1.700	0.193	Accepted
There is no significant difference in Mental Health Issues of the respondents among different Location	0.195	0.823	Accepted
There is no significant difference in Mental Health Issues of the respondents among different Occupation	1.658	0.159	Accepted

research work, following statistical analysis is performed.

General Findings:

From the above discussions, the researchers could extract following general findings:

- When there is an outbreak of any pandemic, it results into traumatic situation for the general public. In the longer run, the public develops resilience against such trauma.
- COVID-19 pandemic has affected not only the physical health of the people, but also the psychological health of the people.
- This pandemic has resulted in to the mental health problems such as anxiety, stress and depression among the people.
- COVID-19 pandemic has resulted in to five mental health disorder namely, anxiety, depression, loneliness, sleep difficulties and hyperarousal.
- COVID-19 pandemic has resulted into the loss of jobs and rising unemployment.
- The people are facing financial insecurity due to the COVID-19 pandemic.
- The quarantine measure and social

distancing have resulted into the social insecurity among the people.

Major Findings from the Statistical Analysis:

From the above given statistical analysis following major findings can be extracted:

- The researchers found that there is significant difference in the effect of COVID-19 on the Physical Health of male and female respondents. It means that COVID-19 affected physical health of male respondents and that of female respondents differently.
- It is also found that there is no difference in the effect of COVID-19 on the Physical Health of respondents of different age groups included in the survey. It means that COVID-19 affected all the respondents of all age groups in the similar manner.
- The researchers found that there is no difference in the effect of COVID-19 on the Physical Health of respondents of different marital status included in the survey. It means that COVID-19 affected all the respondents in the similar manner irrespective of their marital status.
- The researchers found that there is no difference in the effect of COVID-19 on the Physical Health of respondents

of different locations included in the survey. It means that COVID-19 affected all the respondents in the similar manner irrespective of their residential locations.

- The study also revealed that there is no difference in the effect of COVID-19 on the Physical Health of respondents of different occupations included in the survey. It means that COVID-19 affected all the respondents of all occupations in the similar manner.
- The researchers found that there is no significant difference in the effect of COVID-19 on the Mental Health of male and female respondents. It means that COVID-19 affected mental health of male respondents and that of female respondents equally.
- It is also found that there is no difference in the effect of COVID-19 on the Mental Health of respondents of different age groups included in the survey. It means that COVID-19 affected mental health of all the respondents of all age groups in the similar manner.
- The researchers found that there is no difference in the effect of COVID-19 on the Mental Health of respondents of different marital status included in

the survey. It means that COVID-19 affected mental health of all the respondents in the similar manner irrespective of their marital status.

- It is also found that there is no difference in the effect of COVID-19 on the Mental Health of respondents of different locations included in the survey. It means that COVID-19 affected mental health of all the respondents in the similar manner irrespective of their residential locations.
- The study revealed that there is no difference in the effect of COVID-19 on the Physical Health of respondents of different occupations included in the survey. It means that COVID-19 affected all the respondents of all occupations in the similar manner.
- In order to mitigate the physical and mental impacts of COVID-19 on the youth of Gujarat State, the researchers had suggested some remedies such as indoor physical activity, listening music, yoga, meditation, viewing online motivation sessions or proper diet. The respondents had to rank their likings to these remedies. From the responses, it can be concluded that the respondents have given 1st Preference to Indoor Physical activity as a remedy

to physical and mental impact due to COVID-19. Listening music was the 2nd preference while Yoga was on the 3rd preference of the respondents. 4th preference was given to Meditation while viewing online motivation sessions and proper diet were on 5th and 6th preference respectively.

● **Limitations of the Study:**

Following are some of the limitations of the present research:

- The research is based on primary data collected through Google Forms. So, there are chances of human bias, prejudice and human error.
- The study covers the responses across Gujarat and not from the whole of India. So, the findings and conclusions may not be applicable to the youth of other states of India or the youth of other Countries.
- As this research work is based on primary data collection, all the limitations of primary data are involved in this research work.

Conclusion:

From the above research work and statistical analysis, it can be concluded that the COVID-19 and the resultant Lockdown has created mental and physical impact on

the youth in the equal manner irrespective of their age group, marital status, residential location and occupation. In case of physical impact of COVID-19 and the resultant lockdown, it is seen that physical impact is different for the male respondents and that of female respondents.

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Change Management: A Case Study of the Conversion of the State-owned Indian Telecom Department into a Company, the Bharat Sanchar Nigam Limited (BSNL)

D. Selvaraj
Niranjana Selvaraj

Abstract:

Telecom Sector in India remained as a monopoly for over a century managed by the State until 2000. By that time restructuring of Telecom services gained momentum in many countries, the world over. In line with the changes, taking place the world over, the State-owned monopoly Telecom Organization, the Department of Telecom in India was converted as Bharat Sanchar Nigam Limited (BSNL), a Company with effect from 1st October 2000 and made to operate as one of the Telecom companies. This paper is a live case study of the nature of the challenges and difficulties the BSNL faced in the transition period of changeover and to study the strategies adopted by the BSNL to overcome them. Also to study the effect on the performance of the newly formed BSNL and to study what do the government sector employees perceive to be the appropriate approach for change initiatives of this type of changeover.

Key Word:

Change Management, Telecom Industry, Indian telecom, Bharat Sanchar Nigam Limited, BSNL

Introduction:

Telecom Sector in India remained as a monopoly for over a century managed by the State until 2000. By that time restructuring of Telecom services gained momentum in many countries, the world over. In line with the changes, taking place the world over, the State-owned monopoly Telecom Organization, the Department of Telecom in India (DoT) was converted as Bharat Sanchar Nigam Limited (BSNL), a Company with effect from 1st October 2000 and made to operate as one of the Telecom companies in a competitive environment.

When the State-owned monopoly telecom organization was converted as Telecom company, the BSNL, de-linking its status from that of the Government Department and forced to compete with other private Telecom Companies operators (Telcos) all of a sudden without attaching any preferential treatment to it, might have compounded with various problems in the initial stage of transition.

The main problem of this type of change is employee resistance. This issue requires an effective type of change management process. In particular, communications from the right entity in the organization help to improve the employee's response to organizational change. Therefore, the management practices related to organizational change must be clear, consistent, and based on what is in the change for the individuals to improve their perception, and ultimately, improve their cognitive appraisal about the change.

Review of the literature:

The literature relevant to the proposed research comes from the published works on Indian Telecom in Telecom Magazines and Government reports and other materials gathered from the websites.

Instant research is a live case study of organizational change that has taken place in the Indian Telecom Sector. There are ample research studies on change management. However, all these studies are focused on the management of change in respect of the changes made within an organization, mostly private. However, a study of the nature of the instant study has not been attempted by any Researcher.

The literature review examined various approaches to change management, specific to public sector organizations on organizational learning, how change is evaluated, and effective and ineffective change strategies.

Carnall (1986). Evidence in the field of change management reveals that a large number of change initiatives carried out in the public service fail to achieve their intended or desired results

Coram & Burnes (2001). The planned approach to change operates on the principle that once the change has taken place, it must be self-sustaining, The purpose of planned change is to improve the effectiveness of the human side of the organization by focusing on the performance of groups within the organization.

Elving (2005) states that a common problem that occurs in change initiatives focused on the top layers of the organization is that senior management does not acknowledge that the lower levels of the organization will experience a change, as well, as a result of changes occurring at the top.

Karl E. Weick and Robert E. Quinn (1999) state that emergent change approaches are effective, as most change initiatives within public sector organizations tend to be ongoing, evolving, and cumulative.

Paul G. Thomas (1996) states that public sector organizations operate according to a hierarchical structure, which is inbuilt in their foundation. This might suggest that a planned approach to change is appropriate for public sector organizations.

Wayne Wouters, (2012) stated that the public service must be committed to change over many years to achieve desired results. Asa Berger (1992) also claims that the planned approach to change, may not allow an organization to effectively deviate from the initial goals of the change should they need to, given changes in the external environment of the organization.

Ibrahim Ahmed (2001) has commented that the BSNL is corporatized so that they could be independent and have their own identities, plans, and work culture. The objective was to ensure that they became more competitive, offered better services, and grew faster.

Sankar. U (1992) has stated that it may not be fair to appraise the performance of the

public sector in terms of purely financial criteria, but also on the enterprises to the pursuit of social goals such as a model employer in providing housing and other benefits, regional development, etc.

Goyal, R.N (2000) has opined that the starting point in the development of a quality market-driven customer service is to understand thoroughly the customer's service requirements and expectations.

Haraprasad Chatterjee (1993) while commenting on the Attitude of Government servants has stated that the concave learning and indifference curves indicate apathy of the government and PSU servants towards dynamic business frontiers and environments.

Sreejoy K. Ghosh (1999) while commenting on the conversion of DoT into Corporate has stated that the role of organized labour and trade associations has been attended to only by default. Jain, P.K (2004) opined that the better financial performance record of PSEs may be attributed, to an extent, to various steps taken by the government.

Pravin Prashant (2003) has stated further that with the corporatization of BSNL there has been an additional, entry tax and others. All these results in bringing PAT down and the financial burden on BSNL increases. Many expenses, which did not apply to government departments, became applicable to BSNL after corporatization.

Not much research work on the topic selected for the instant research work has been undertaken by the Department of

Telecommunications or research institutions or by any individual. It is, therefore, felt that there is a gap in the research work so far undertaken by the researchers on the topic selected for the proposed research work and it has been decided to fill up this gap by way of undertaking the instant research work

The objective of the study:

The basic purpose of the study is to critically review the nature of the challenges and difficulties the BSNL faced in the transition period of changeover from DoT to BSNL and to study the strategies adopted by the BSNL/DoT to overcome them. Also to study, what do the government sector employees perceive to be the appropriate approach for change initiatives.

Research methodology and data source:

In the present study, the methodology adopted is objective and analytical. The sources of data for the present research study are mainly Primary Data and Secondary Data as per the availability of Literature and other information. The primary data is collected through interviews with 47 managerial level officials of BSNL in various disciplines in New Delhi and Chennai. The secondary data are based on the information that comes from a variety of sources coming from the Government, the company, and the telecom industries. The first step in the study is to determine the purpose of the study and formation of questions based on a discussion with selected senior-level officers and the leaders of the employee unions in DoT as well as in BSNL for the

formation of questions, which is later used as a questionnaire for the interview. A copy of the questionnaire used for the interview is furnished as an Appendix to this paper. In the next step, the information collected from the interviews has been analyzed to form a complete case involving all the critical areas under the scope of the study and thereafter a conclusion is drawn on each issue.

Limitations:

The instant study is a live case study of the structural change that has taken place in respect of a hundred years old, a very big monopoly government department as a company. There are numerous studies related to change management. However, all of these studies deal with change management as it relates to changes that have occurred within an organization, primarily a business. However, none of the researchers attempted to study the nature of the changes that took place as in the instantaneous study. Each organization tends to undergo a natural change in its working methods over a given period, especially businesses. BSNL could also have made such changes following its formation that are not directly related to its structural change. Therefore, for the study, various aspects of change management that took place immediately after five years of its formation in 2000 were considered. However, the changes related to human resources issues have been considered for a longer period, particularly the issue of absorption of employees in BSNL.

Result and Discussion:

Various issues confronted by the BSNL as discussed below, during the transition period such as (i) Improving productivity, (ii) Cope up with rapid changes to compete with private operators, (iii) Adjusting to the regulatory environment, (iii) Maintaining employee relations, (iii) Modifying the skill required to meet various statutory requirements, (iii) Resources – to address various financial issues, increase in pension and wage bill, insurance, etc. have been examined to find out what are the strategies adopted by the BSNL to tackle the issues.

Marketing:

The BSNL realized that fast marketing of the telecom service in a competitive environment needs initiatives in the Sales and Distribution network. For the supply of continuous and uninterrupted supply of Telecom services, the BSNL created a Marketing Cell with a dedicated sales team in all field units and a newly created General Manager (Marketing) posts in each circle. Authorized agents have been appointed for the sale of Sim cards, recharge, and top-up coupons for Mobile services on a commission basis. This has helped the BSNL to make the General public understand the presence of BSNL throughout the country.

Customer Service:

Immediately on the formation, the BSNL made greater emphasis on customer services. Intending to serve better, all the application forms relating to customers have been simplified. To focus greater value

to its customers and lays greater focus on efficient and quick redressal of customer grievances, customer service centres (CSC) have been opened at all important locations, specifically one CSC at Secondary Switching Area (SSA) Headquarters and Area General Managers and at least one CSC in each Sub Divisional Area. (SDCA)

Restructuring of Telecom field Organizations:

In absolute size, the Indian Telecom field service organization was huge at the time of formation of BSNL with 4.5 lakhs employees, managed by over 3000 Group-A officers, 50 lakhs telephones, 20 Telecom territorial units, 20 functional units, several prestigious Training Institutions, and six captive Telecom workshops located in various cities in the country as of 1st April 2002. Based on the report of the Consultants appointed by DoT, the restructuring of BSNL was made by the separation of strategic Business from the Board downwards up to SSAs. The Telecom factories are engaged in the production of a wider range of Telecom materials and Coin Box, payphones, CD cabinets, CT Box, DP Box, etc. Introduced Balanced Business Scored Card methodology for improving the performance of its Circles.

Personnel and HR-related issues:

Recruitment:

There has been very little recruiting in the erstwhile DoT for 15 years before the formation of BSNL in 2000-01. The average age of the employees of the Company at

the time of its formation was very high and an acute shortage of professional staff was anticipated in many cadres. The BSNL has therefore gone in for recruitment of 5000 Telecom Technical Assistants, recruited by the Telecom circle and 3000 Graduate Engineers (Junior Telecom Officers – JTOs). The action was also initiated to recruit approximately 1275 Junior Accounts Officers with higher qualifications of CA/ICWA etc. Hitherto this post was filled up by way of promoting internal candidates based on an examination, and there was no outside recruitment at all from the time of British Rule. As there was surplus staff on account of closure of Telegraph offices and Manual Telephone exchanges, there needs no necessity of recruiting other Group-C employees.

Training:

For enhancing the managerial and technical skills and productivity of its personnel, the BSNL gave induction and in-service training to 66462 officers, behavioural and attitudinal training to 19203 non-executive staff in the various training centres of the Company in 2002-03 and 46639 Group C employees in 2003-04. Further, to motivate employees to be productive and innovative, the BSNL provided opportunities and made the employees undergo training and development programs to maximize personal potential and develop careers within the organization. A total of 91083 employees was trained in its in-house training centres for this purpose in 2003-04.

To impart advanced management knowledge

to the Senior Management personnel, the BSNL entered into an MOU with IIM Ahmadabad, according to which several Management Programs for officers were conducted by IIM Ahmadabad, and also in agreement with IIT Kanpur for undertaking operation-specific R &D training up to the year 2007-08.

Considering the tough competitive area of operations and with the view to continuously update the skills of officers, the BSNL sent abroad 128 officers for general training in 2006-07, 61 officers for various technical training, 100 officers for exhibitions, meetings, conferences, and 20 officers were deputed abroad for testing and validation of equipment in the year 2007-08. Offered overseas training to its employees in the other areas as well, ie ITU, APT study group meetings, business visits, and various forum meetings; seminars and workshops to 125 officers of the Company in 2003-04.

Industrial harmony and Industrial relations:

At the time of the creation of BSNL, a large number of issues affecting industrial relations were transferred by DoT, to the BSNL. With periodic consultations with employees' unions, many issues have been resolved. The employees' unions of Non Executives unionized cadres insisted the Government/BSNL to recognize the basic guiding principle of employee relations, viz (i) Security -there shall be no question of any retrenchment in restructuring, (ii) Service Condition -the present Service conditions of the employee should be fully

protected, if required it will be further improved. To negotiate the salaries and perks of the Group C and D employees, the BSNL insisted that a majority union is to be elected first after verification. For this purpose, the BSNL initiated the process of verification and completed it in Feb 2001. However, the unions have formed a Joint Action Committee and have requested to commence negotiations for salaries and perks with them pending verification of the majority staff union which has been agreed to by the Government.

An overview of personnel and HR system in DoT and BSNL:

There are four groups of employees in the DoT viz Group A, Group B, Group C, and Group D. The Group A service employees are the top-ranking officers who control the entire management of the organization. Group B officers are Gazetted officers and they are in the Junior Management cadre under all Groups A services. Group C employees are operational employees who are clerical staff, technicians, telephone operators, etc. The Group D employees are the lowest rung employees who are supporting staff in the organization.

There were eight Group A services in DoT at the time of formation of BSNL, they are (i) P& T Accounts and Finance Service (IAFS) (ii) Indian Telecom Service. (ITS) (iii) P&T Civil Engineering Service (P&T Building works –Civil) (iv) P&T Electrical Engineering Service (P&T Building works –Electrical) (v) P&T Architectural Engineering Service (P&T Building works –

Architecture) (vi) Telecom Factory Service (vii) General Central Service. (viii) Central Secretarial Service.

The posts in item 1 are recruited through civil Service examination of the UPSC. The posts in services from item 2 to item 6 are filled up through the Engineering Service examination of the UPSC. Employees under the central Secretarial service (Item 8) are in the common pool of Central Secretariat Service in the Ministries of the Government of India.

The breakup of the number of employees in each group of Service –Group A to D and their percentage to the total number of employees are furnished in Table-1. For the statistical purpose, the employees in the service in items 3 to 8 above are grouped and shown under General Central Service (Item 7).

Group A and B employees enjoyed a special status as gazetted officers and hold a high position in the administration of the government. Further, the recruitment rules which contain the service conditions - appointments, promotions, etc., are governed under the provisions contained in Article 309, of the Constitution of India. On protracted discussion with the employee unions, the Government has agreed to protect the pension benefit which the employees are eligible to get while in service with DoT, for which the BSNL has to pay a pension contribution to DoT till the retirement of the employees in BSNL.

Group C and D employees who enter

Table 1.
Number of Personnel in each Service and Grade in DoT as of 31-03-2021 and the information on the number of personnel got absorbed in BSNL

Services	Group - A	Group - B	Group - C	Group-D	Industrial Workers
DoT Head Quarters- All Sr Management level Posts.	77				
Indian P&T Accounts and Finance Service (P&TAFS)	1364	4757			
Indian Telecom Service	6318	42412			
Central Secretarial Service	17	174			
General Central Service	888	2645			
Group C (Group B Non-Gazetted and Group C)			276601		
Group D Excluding Industrial workers				83383	
Industrial workers					4391
Total	8664	49988	276601	83383	4391
Percentage of Total No.					
Of Staff /personnel	2.05	11.82	65.39	19.71	1.04
No. of Personnel Absorbed in BSNL and its percentage to the total strength in DoT					
P&T AFS (Approx)	140 (10%)	ALL 100%	ALL 100%	ALL 100%	ALL 100%
ITS	74 (1.17%)	ALL 100%	ALL 100%	ALL 100%	ALL 100%
Other Engineering Services. Services (Civil, Electrical &, Architect) (Other than ITS)	383 (100%) (Approx)	100 100% (Approx)	ALL 100%	ALL 100%	ALL 100%

Source: Compiled from the Data Available in the DoT Annual Report of 2000-01 and 2001-02 and based on the absorption orders issued by DoT to individuals.

the government service remain in service mostly for over 40 years. Certain Group C / Group B (Non-Gazetted) employees of Engineering and Accounts & Finance cadres are promoted to Group B (Gazetted) posts by way of promotion. Normally, this Group C employees had to wait for more than 20 years to get the first promotion, which is group B (Gazetted), and another 12 to 15 years to get the second promotion which is a Group A Post on an Adhoc basis. There were about 1700 Group A (Adhoc) officers in all services put together at the time of formation of BSNL in 2000. Recruitment rules of all Group A services provide a guarantee of time-bound promotions and thereby they may get 4 promotions within 20 years of entering into the service and a minimum of 6 promotions in their entire service. According to the CPSU cadre hierarchy, every executive and non-executive may get a time-bound promotion on completion of 3/4 years of service on a scale, with the result the BSNL absorbed DoT employees may also get a minimum of 4 promotions in 20 years of Service like the privilege enjoyed hitherto by Group A officers in DoT.

Absorption of DoT employees in BSNL:

The process of absorption of DoT employees in BSNL starts with the calling of option to submit the willingness of the employees to get absorbed in BSNL or to opt to remain in DoT. If no option is given, it will be assumed that the employee has opted for DoT. The rule is the same for all employees from Group A to Group D.

Absorption of Group B, C, and D employees:

The absorption process of Group C and D employees totaling 3.60 lakhs employees, which are about 85 percent of the total workforce was started and completed along with finalization and approval of the wage agreement within a year in 2001-02.

The BSNL finalized the proposal for absorption of Group B officers after discussion with the various associations in 2001-02 and started the absorption process by calling option in Jan 2002. The entire process of absorption was completed in 2003-04. Almost, all Group B officers opted for BSNL and got absorbed without any delay.

According to the absorption rules formulated by the DoT, the Group A (Adhoc) officers are eligible for absorption in BSNL only at the Group B level and after absorption, they are entitled to get the Group A promotion again on an Adhoc basis. The entire Group A (Adhoc) employees have also opted for BSNL and are absorbed in BSNL. The absorption process of Group A (Adhoc), Group B, C, D employees in BSNL with effect from 01.10.2000 was completed in 2003-04. The total of these employees works out to 4.15 lakhs out of the total of 4.23 lakhs employees, which is 98.5 percent of the total DoT employees. An almost a hundred percent of all these employees got absorbed in BSNL without any problem. The employees who remain unobserved in BSNL are the only Group A direct recruit officers as in 2003-04.

Absorption of Group A officers in BSNL:

The Union Cabinet approved in 2003, the deemed deputation status of Group A officers for 5 years from 01.10.2000 to 30-09-2005. The DoT started the absorption process of the Group A officers on 24-03-2005 by calling options separately for each service giving 4 weeks to submit the option. The majority of Group A officers in all services, except Indian Telecommunications Service (ITS) officers in the telecommunications operations stream, exercised their option in favour of BSNL and were absorbed in BSNL with effect from 01.10.2000.

In 2005, Indian Telecom Service Association (ITSA), the Association that represents ITS Group A officers, filed a case in the Hon Delhi High Court (HC) demanding a prospective date of absorption, instead of 01.10.2000. Various other individual officers have also filed cases against absorption in various courts, for this reason, the option submission date was extended 12 times to 09-12-2005. Because of the Court cases, the process was put on hold. The Government, in its order dated 03-11-2011, repatriated all unobserved Group A officers working in BSNL back to DOT. However, the BSNL relieved 355 Group A officers retaining 945 officers in BSNL. It is pertinent to state here that these ITS officers are holding top-level posts in the administration both in DoT and BSNL.

The Delhi HC ordered on 17-04-2012, that the deemed date of absorption fixed as 01-10-2000 is illegal and should be 08-12-2005 and allowed the ITS officers, two weeks to

exercise, fresh option, with the last date as 01-05-2012. The court also ordered that those who have not opted for BSNL should be sent back to DoT after the due date. Only one ITS officer exercised a fresh option in favour of BSNL. In March 2012 all the officers on deemed deputation were given promotions by DoT against BSNL posts till their absorption in BSNL.

BSNL Management filed another case on 18-05-2012 in the Delhi HC, asking for an extension of time to implement its order dated 17-04-2012. The Delhi HC agreed to extend the date of relief of all the ITS officers who have opted for DoT up to 30-09-2012. The BSNL management filed again a case in the Delhi HC on 01-10-2012 seeking an extension of time for the relief of unabsorbed officers till the recruitment of manpower by BSNL at the Management Trainee and DGM level. The Delhi HC, extended implementation of its order dated 17-04-2012 till 15-12-2012 and extended further in its order dated 18-12-2013 till the date of the next hearing. The Delhi HC in its order dated 15-02-2013, directed that its order dated 17-04-2012 should be complied with within six weeks from that date and disposed of all the cases.

The DoT filed a case in Delhi HC on 04-03-2013 seeking clarification on the decision of the court in its order dated 17-04-2012, on repatriation of all unobserved ITS officers in BSNL to DoT. The court has turned down the case. The DoT issued orders on 11-03-2013 repatriating all the unabsorbed ITS officers (911 Nos) from BSNL, issued

relieving orders on the same day, and issued another separate order deploying them again in BSNL on deemed deputation and further ordered that the leave salary and pension contribution for the ITS officers on deputation with BSNL shall be paid by BSNL to the DoT which is an additional expense to BSNL.

Two BSNL Executives Associations, the SNEA, and AIBSNEA filed a contempt of court case in 2014, in the Delhi High Court against BSNL and DoT for not implementing the orders of the Delhi HC court dated 17-04-2012, for not repatriating the non absorbed officers from BSNL to DoT. The Case was last heard on 25-10-2018 and is still pending final orders (2020)

The absorption process of all Group A employees, except ITS employees, has been completed smoothly without any trouble.

However, the process of absorption of about 2000 ITS Group A officers is lingering for the last 20 years as the ITS officers managed to continue in BSNL on deemed deputation enjoying the benefit of both the government and BSNL by adopting various strategies.

Performance of BSNL after its formation:

The BSNL has got additional cash outflow liabilities, which are for payment of various taxes, interest, payment of retirement/pension benefits to employees, payment of licensing fee, insurance on assets, compliance of Universal Service obligations, etc., which are all not there in DoT. The financial performance of DoT in its last year's operation and the corresponding performance of BSNL and the quantum of cash outflow in BSNL in selected years are shown in Table 2.

Table 2
Financial performance of DoT in its last year of operation and the corresponding performance of BSNL and the quantum of Cash outflow on additional expenses in selected years.

(Rs in Crores)

	In DoT	In BSNL					
	1999-2000	2001-02	2003-04	2005-06	2007-08	2009-10	2010-11
Net Profit	11975	6312	5977	8940	3009	-1823	-8851
Additional Cash outflow liabilities.	NIL	4384	4286	5182	Not assessed		

Source: Compiled from the information contained in the DOT and BSNL Annual Reports of various years.

It is seen that the net profit is comparatively low in BSNL and it is in a downward trend up to 2007-08 and started to show a loss from 2009-10. One of the reasons for BSNL's poor performance is on account of extra cash flow liabilities that are substantial. The BSNL cannot perform with its past glory unless the structural change is clubbed with the support of the Government and also addressing other operational problems faced by BSNL on account of cutthroat competition in the Telecom sector.

The absorption process of all groups of employees, except ITS Group A employees, has been completed smoothly without any trouble. The delay in the completion of absorption of one set of Group A service officers in BSNL has caused disadvantages to thousands of other employees and other operational problems in the organization.

Conclusion and recommendation:

In this case study, we have seen that how the BSNL has managed to make changes for the smooth running of the Company consequent on its formation. The change in the present case is not a pre-planned one, and all the issues connected with the change have been handled whenever the issues surfaced. However, handling HRD/Personnel issues is not fair and justifiable to all the employees. One set of Group A employees managed to remain in BSNL on deemed deputation even after the formation of BSNL 20 years back and this delay has caused disadvantages to thousands of other employees and other operational problems in the non-recruitment of Management

trainees and middle management officers. With this, the study has shed light that according to the perception of employees, to create change for achieving the desired results in public sector organizations, a different set of strategies on HR issues is required to be followed, other than the one followed in BSNL. Further, the BSNL which was generating substantial profit before its formation and also immediately for a few years after the formation has failed to generate operating profit since 2009-10. The main reason for this negative performance is on account of (i) additional cash flow liabilities in BSNL and (ii) losing the status as a monopoly government Department and thereby being made to operate as one of the Telcos in the country.

Recommendation:

The following are some of the suggested recommendations which have to be kept in view when the Government goes in for conversion of a Government Department as a company to achieve the result, the objectives of deciding for the change.

- The changes should be pre-planned instead of abrupt and hasty.
- All the issues that may likely come in the way of the change should be studied and possible solutions decided in advance.
- Employee issues should be handled fairly and equitably, giving them a clear position after the change is implemented, being the Government a model employer.

- The absorption process of employees from the Government to the Company should be top to bottom approach instead of bottom to top approach as is followed in the case of BSNL, that is the top-level Group of officers should be absorbed first and then the lower-level employees.
- The process of absorption of employees should be handled by a separate set of employees from the other Central government Department, other than the employees of the Department under change.
- The Government should extend liberal policy guidelines and directives to support the functioning of BSNL, as (i) it is the only fully Government-owned Telco in the Indian Telecom Market, (ii) its services are needed to provide services to rural and unreachable areas, and (iii) to comply with the social obligations of the government as a model employer.

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Appendix

The questionnaire used for the Interview

Name and designation of the interviewee:	
Date:	
PART I : Introduction	
1	Your current function in the organization and what were your responsibilities before this. How many years of experience do you have in the DoT/BSNL
2	How would you see the BSNL's changed situation in India with a lot of changes coming in.
3	What is your specific view on the conversion of DoT as BSNL? And whether you are happy with the change.
4	What is your view on such conversion for other Government Organizations like Indian Railway etc.
5	Are you happy with the overall implementation strategy for change management?
PART II: Service-oriented and structural issues. –Your opinion on	
6	Organizational Structural
7	Restructuring
8	Telecom field Service Organization
9	Marketing strategy
10	Customer relations.
PART III: Issues connected with Financial and Physical performance.	
11	Financial issues
12	Cost minimization techniques
13	Issues connected with the Pricing of Telecom Services.
PART IV: Absorption process and issues connected therewith	
14	State the procedure followed by DoT/BSNL in the absorption and Are you satisfied with the absorption Process.

PART V : HRD issues - State your opinion on	
16	Wage agreement
17	Training and skill up-gradation
18	Managerial expertise
19	Recruitment
20	Labour relations.
PART V1: Final	
21	What do you think about the overall change management process in the conversion of DoT into BSNL'

Company Risk Measurement through Two-Stage Principal Component Analysis: A Study of Select FMCG Companies in India in the Post-Reform Period

Krishna Singh

Rahul Kumar Ghosh

Debasish Sur

Abstract:

The present study was carried out to analyze the status of company risk of fifteen selected FMCG companies in India during the period 2003-04 to 2017-18 on the basis of company risk index (CRI).

In the present study Two-stage Principal Component Analysis ((TSPCA) was used for the purpose of designing the overall CRI of each of the selected companies. An attempt was also made to identify the impact of the CRI of selected companies on their profitability during the same period adopting regression analysis technique.

A notable outcome of the study is that half of the selected companies were placed in the category of higher level of company risk whereas one third of the companies under study found place in the category of lower level of company risk. The study also revealed that high company risk was well compensated by high overall return while high company risk was not at all compensated by high owners' return in the selected companies during the period under study.

No study has so far been made in India in the recent times to analyze company risk applying a CRI which has been formulated adopting Two-Stage Principal Component Analysis (TSPCA) technique. In order to bridge the gap, an attempt has been made in the present paper to design a suitable CRI applying TSPCA for measuring the company risk.

Key Word:

Company Risk, Business Risk, FMCG Companies, Profitability, Index

I. Introduction

In a highly volatile situation mitigating instability in operating profitability is a prerequisite for a company to accelerate the growth of its shareholders' wealth. If such instability is not recognized and mitigated, it may hurt the financial health of business firms. Thus, in today's challenging and competitive environment, the issue relating to the formulation of appropriate strategies for managing business risk in achieving the shareholders' value maximization objective of corporates is of utmost importance (Mallik et al. 2016). Business risk associated with a company stems from ups and downs in its capability to earn operating surplus. The degree of business risk depends on several factors that are generally categorized as economy-specific factors, industry-specific factors and, company-specific factors. Business risks which emanate from economy-specific, industry-specific and company-specific factors are regarded as economy risk, industry risk and company risk respectively. The genesis of company risk lies in dispersion in the company's different aspects, important of which are instability in the pattern of cost behaviour, variability in the capacity of yielding revenue using capital base and scattering of capability to meet current obligation which result in cost

structure risk (CSR), capital productivity risk (CPR) and liquidity risk (LR) (Ghosh, 1997). Though controlling company risk is not an easy task, it may be feasible to some extent. But economy risk and industry risk cannot be influenced by a particular company.

The international wave of privatization which started in the United Kingdom in the 1980s and subsequently spread to almost all countries in the world has stimulated considerable discussion in India on the need to adopt the measures relevant to the liberalization of the economy. "No power on earth can stop an idea whose time has come," said then finance minister, Dr. Manmohan Singh quoting Victor Hugo while presenting the Union Budget on 24th July 1991 and in his budget speech it was a clear indication of converting the state dominated economy into free market economy by adopting different measures of economic liberalization in India. The liberalization of the economy, which was initiated in India in July 1991, has proceeded a pace and several domestic companies have entered into newer geographies and got themselves listed in foreign exchanges. Both Foreign Direct Investment (FDI) and Foreign Institutional Investment (FII) in India, which were meager before 1991, have stepped up significantly in the post-

liberalization era (Rao & Kadam, 2016). The FDI in India which was 7.0 USD million in June, 1991 increased to 13.2 USD billion in December, 2019. The FII inflows in India in the form of purchase of securities by institutional investors were first allowed in September, 1992. Before the financial year 1992-93, the only channel of Foreign Portfolio Investment (FPI) inflow was through offshore funding. The FII in India began to take place in January, 1993. It was only 0.24 USD billion during the financial year 1992-93 which reached 18.76 USD billion in September, 2010 whereas it was 8.133 USD billion in December 2019 (CEIC Database, <https://www.ceicdata.com>). So, the Indian enterprises, which had their heydays during the forty years of India's independence, has had to compete with the foreign companies. As a result, they have been exposed to higher risks stemmed from different uncertainties arising out of economic, political, cultural, and other global activities (Ghosh, 2013). With the notable transformation in the scenario in the economic front, along with other issues relating to corporate affairs, there have also been notable changes in the profitability trends, cost behavior pattern, capital productivity and liquidity strategies in the Indian corporate sector resulting in significant changes in the pattern of business risk associated with the corporates

(Mallik & Sur, 2009). The Indian companies have been forced to reorient their strategies for managing their company-specific components of business risk i.e. company risk in the post-liberalization era. Some of them have taken suitable measures to adapt themselves to the new situation, some have been able to reach only the break-even-point while others have failed to meet the challenges posed by such liberalization (Mallik et al. 2016). In this backdrop, the present paper seeks to analyze the company risk in the selected FMCG companies in India during the period 2003-04 to 2017-18. Since company-specific components of business risk can only be controlled, to some extent, while a company has no influence over economy risk and industry risk, the evaluation of company risk only is carried out in this paper. The contribution of the paper to the existing literature is mainly methodological. In this paper the earlier studies have been extended by exploring the concept of designing composite index of each component of company risk applying Principal Component Analysis (PCA) technique.

The remainder of this paper is structured as follows. Section II is concerned with the review of related literature. In Section III the objectives of the study are stated. Section IV mentions the source of data and

also narrates the methodology of the study. Section V discusses the empirical results. In Section VI concluding observations are presented.

II. Review of Related Literature

A number of studies were conducted in India and abroad during the last two decades on the issue addressed in the present study. The following lines provide in this section a brief discussion on some of these studies.

A significant study carried out by Mishra and Mishra (2007) to analyze the risk - return status of the different sectors belonging to the Indian industry based on both the market and accounting information. The results obtained from the study based on market information indicated that FMCG, health care and oil and gas sectors established themselves as the most defensive sectors whereas metal and IT sectors found place in the most aggressive category. The outcomes as derived from the analysis made by using the accounting information reflected that FMCG, metal and IT sectors faced the highest business risk while technology, auto and public sector units were able to consolidate themselves in the category of the least business risk. The study also confirmed that the effect of market was not precisely reflected in the business risk measured on the basis of accounting information.

Sur (2007) in his study attempted to make a comparison between the business and financial risks of NTPC Ltd. in the pre-liberalization period and those in the post-liberalization era. A notable outcome of the study was that a significant declining trend in the risk profile of the company was observed during the post-liberalization period as both the components of risk, such as business and financial risks of the company reduced noticeably during the same period. The study also revealed that there was no scope of enhancing economy-specific and industry-specific components of business risk of NTPC Ltd during the post-liberalization era as almost monopoly power was enjoyed by NTPC in the Indian power sector during the study period (1982-1983 to 2005-2006). Moreover, a considerable reduction in the company-specific component of business risk of NTPC Ltd. was noticed during the post-liberalization era.

Mallik and Sur (2009) conducted a study in which the business and financial risks in fifty selected manufacturing companies in India were measured by using coefficient of variation during the period 1995-96 to 2006-07. The outcomes derived from the study did not conform to the theoretical arguments as strong evidence of positive or negative association between business and

financial risks as well as notable positive relationship between risk and return were absent in the selected companies during the study period.

Dhanabhakyan and Balasubramanian (2012) carried out a study of almost the same type based on three selected industries in India, such as automobiles, refineries and steel industries during the period 1999-2000 to 2008-09. The study revealed the similar outcomes as obtained in the study made by Mallik and Sur (2009).

Sur and Mitra (2011) in their study concentrated on the business risk analysis taking seventeen companies in Indian IT sector as sample during the period 1999-2000 to 2008-09. In this study Gini's coefficient of mean difference was applied in measuring the degree of business risk and its company-specific components associated with the companies under study. The results indicated that uniformity in respect of risk-return trade-off among the selected IT companies was absent during the study period. The notable finding of the study also was that the business risk completely mismatched with the return in the sample companies during the period under study.

Two similar studies on the business risk analysis as conducted by Gupta and Sur (2015) and Mallik et al. (2016) for the periods

2001-02 to 2010-11 and 1994-95 to 2013-14 respectively by taking 100 companies as sample in each case revealed contradictory results. The former study reflected that the extent of negative relationship between business risk and return was notable while the latter one observed a blend of high business risk-high return in the companies under study.

A few studies were conducted in both India and abroad in the recent past on the issue associated with the relationship between leverage and business risk (Mohammed, 2012; Chakraborty, 2015). But the researchers in their studies failed to arrive at a consensus on the nature of the relationship between leverage and business risk. A U-shaped function between business risk and leverage was observed in the study carried out by Mohammed (2012) whereas in the study made by Chakraborty (2015) a polynomial of degree 5 or more was found in the relationship between these two variables.

A completely different type of research study was conducted by Singh and Sur (2018) in which the company-specific components of business risk, such as liquidity risk, cost structure risk and capital productivity risk were measured by using Gini's coefficient of concentration. In this study the 'business risk index' (BRI) was ascertained applying

the principal component analysis based on these three company-specific components of business risk in twenty selected manufacturing sectors in India during the period 1994-1995 to 2013-2014. The study revealed that on the basis of the BRI values, eight industries were placed in the category of 'Business risk above the Indian manufacturing industry average' while the remaining twelve industries below the Indian manufacturing industry average. The business risk stemmed from instability in company-specific factors was the highest in paints and varnishes industry whereas the least risk was enjoyed by engineering-heavy industry during the study period. A significant positive influence of business risk as measured by BRI on return as indicated by the return on capital employed was shown in the selected industries during the period under study.

A study carried out by Yadav and Sur (2021) in order to make an overall comparison between the risk profile of NTPC Ltd. in the pre- and post-Maharatna periods applying both conventional non-statistical and statistical measures. The study revealed a positive association between business and financial risks associated with NTPC Ltd. in both the pre- and post-Maharatna periods. The study also reflected a negative association between risk and return during the period under study.

Based on the above discussion it is clear that some studies on the analysis of business risk were conducted in India and abroad during the post-liberalization era and particularly a few studies considering the Indian corporate sector were made during the last two decades in which the business risk was measured by applying coefficient of variation, Gini's coefficient of mean difference or Gini's coefficient of concentration (Sur & Mitra, 2011; Gupta & Sur, 2015; Mallik et al., 2016). A very few studies were also carried out in both India and abroad to examine the nature and extent of association between leverage and business risk with the help of semi-parametric regression model (Mohammed, 2012; Chakraborty, 2015). One significant study can also be mentioned in this context which was carried out in India and in this study the business risk associated with the Indian manufacturing sector was analyzed during the post-liberalisation era by using 'composite Business Risk Index' designed with the help of single-stage principal component analysis (PCA) (Singh & Sur, 2018). But no in-depth study was conducted in India in the recent past in which the analysis of company risk in Indian FMCG sector was made applying Company Risk Index (CRI) which was designed by applying two-stage PCA. The present study attempts to bridge this gap in the literature by adopting two-stage

PCA and the company risk in the selected companies in Indian FMCG industry was analyzed with the help of such index.

iii. Objectives of the Study

The present study has the following objectives:

- i) To construct Liquidity risk index (LRI), Capital productivity risk index (CPRI) and Cost structure risk index (CSRI) taking into consideration relevant components.
- ii) To assess the LR, CPR and CSR of each of the selected companies based on the LRI, CPRI and CSRI respectively and to determine the status of each of the companies based on such indices.
- iii) To examine whether there was uniformity among the LR, CPR and CSR of the selected companies.
- iv) To construct a Company risk index (CRI) taking into consideration the LRI, CPRI and CSRI.
- v) To ascertain the company risk of each of the sample companies with the help of the CRI and to identify the status of each of them based on such CRI.
- vi) To analyze the impact of company risk and some other selected

explanatory variables of the selected companies on their profitability.

IV. Source of Data and Methodology of the Study

Data Source:

The study was conducted by taking fifteen FMCG companies operating in India. The selection of the companies were made by adopting purposive sampling procedure from the top 20 companies in the Indian FMCG sector belonging to “BT 500 India’s Most Valuable Companies” (based on market capitalization) published by the Business Today (<http://bt500.businessday.in>) on 9th November, 2014. The sample companies are listed in Appendix-I. The data of the companies under study for the period 2003-04 to 2017-18 were taken from Capitaline Corporate Database of Capital Market Publishers (I) Ltd., Mumbai. The liberalization process initiated in India during the financial year 1991-92. It is expected that the impact of reforms would be felt after a few years since their announcement (Chakraborty, 2015). In fact, the outcome of the liberalization measures was clearly visible in India after the nineties (Ramaswami et. al., 2011). So, in order to account for the prominent effects of liberalization the present study considered the financial year 2003-04 as the initial year of the post-reform period.

Methodology:

In this study Gini's coefficient of concentration was used in measuring the LR, CSR and CPR of the sample companies. Gini's coefficient of mean difference (ΔI), which is an absolute measure of dispersion, is the ratio of g to m where g represents the sum total of the differences of the values of the observations, $m = \frac{n(n-1)}{2}$ and n is the number of observations whereas Gini's coefficient of concentration (G), which is a relative measure of dispersion, is equal to $(G) = \frac{\Delta I}{2 AM}$ where AM is the arithmetic mean. It is well accepted that a relative measure of dispersion is better as compared to its absolute one. So, G was used in this study while measuring the values of the selected components of LR, CSR and CPR. G is a pure number and is independent of units of measurement. It varies between 1 and 0. If G is 0, then it indicates that there is no risk while if it is equal to 1, then it implies that the risk is maximum.

In fact, there is a strong theoretical argument in favour of Gini's coefficient since it is based on all the values of the variable and the differences of values among themselves and not on deviations from some measures of central tendency. Traditionally, coefficient of variation (CV) is used in measuring different components of risk. CV is a relative measure of dispersion. It

represents the ratio of standard deviation (SD) to arithmetic mean (AM). SD is the 'root-mean-square deviations from mean'. So, while ascertaining the value of risk the deviations from AM are taken into consideration. But AM is a commonly used measure of central tendency which has certain severe shortcomings. First, AM is highly influenced by extremely high or low values. Recognizing the deviations from such measure of central tendency may, therefore, distort the value of risk. Secondly, in extremely asymmetrical distribution AM cannot be regarded as a suitable measure of central tendency. Thus, at the ascertaining risk if the distribution used is found skewed, the deviations from AM ascertained on such skewed distribution cannot reflect the true value of risk. Thirdly, in case of qualitative data, AM cannot be considered as a good measure of central tendency. In such case, only median can be recognized as the appropriate measure of central tendency. Risk is calculated using qualitative data. For example, CV of capital turnover ratio is used in ascertaining the value of capital productivity risk while liquidity risk can be computed by CV of current ratio. So, the data relating to such ratios are qualitative in nature. The use of deviations from AM is not at all tenable in this case. However, Gini's coefficient accounts for only the differences of values among themselves, the deviations

from AM are not taken into consideration. Thus, Gini's coefficient can be regarded as a better measure of risk as compared to the CV. This constitutes the rationale for using Gini's coefficient of concentration in the study.

For the purpose of designing the liquidity risk index (LRI), cost structure risk index (CSRI), capital productivity risk index (CPRI) and finally overall company risk index (CRI) of each of the selected companies Principal Component Analysis (PCA) was applied in this study. Each of these sub-indices was constructed on the basis of several components pertinent to that specific sub-index category. There was a two-fold purpose for dividing the overall set of indicators into three sub-indices. First, the three sub-indices have separate connotations and so additional disaggregated information was found which might be useful for policy purposes (Datta and Singh, 2019). Second, for methodological purposes, as the sub-indices encompass highly inter-correlated indicators, at first the sub-indices were estimated and then they were combined in order to arrive at the overall CRI.

PCA uses an orthogonal transformation for making conversion of a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables. The relevance of this approach lies in the

fact that it transforms the impact of a rather greater number of variables into a smaller set of uncorrelated factors. As a number of indicators are associated with each category of risk, the application of PCA is considered as the most appropriate technique to arrive at a single index reflecting overall company risk of the selected companies. A major benefit of the PCA emanates from quantifying the importance of each of the selected indicators for explaining the variability of a data set (Shlens, 2009). PCA can also be applied in compressing the data, by reducing the number of dimensions, without much loss of information. If a data set is analyzed by adopting PCA, a large percentage of the total variance can be explained with only a few components. Principal components are selected in such a way so that each successive one explains a maximum of the remaining variance.

It is the usual practice to consider the company risk index as well as sub-indices as latent or unobserved variable. The main problem is the assignment of weight to the indicators or sub-indices which is critical to maximize the information from a data set included in an index. A good composite index should comprise important information from all the indicators but not be strongly biased towards one or more of these indicators. Considering the view

proposed by Cámara and Tuesta (2014), two-stage PCA was applied in this study in measuring the degree of company risk as an indexing strategy. At the firststage, all the three sub-indices were constructed by using the PCA while at the second stage, overall CRI was estimated by using the sub-indices as explanatory variables.

Hence, it was assumed that the latent variable such as CRI can be expressed as a linear function as follows:

$$CRI = \alpha_1 I_i^L + \alpha_2 I_i^{CP} + \alpha_3 I_i^{CS} \dots\dots\dots (1)$$

Thus, for instance, liquidity risk index I^L as a latent variable was supposed to be determined by variables such as Gini's coefficient of concentration (G) of Cash and cash equivalent to current assets ratio (X_1), G of Inventory to current assets ratio (X_2), G of Trade receivables to current assets ratio (X_3) and G of Defensive interval ratio (X_4). Here the corresponding sub-index was obtained in the following weighted average form:

$$I^L = \frac{\sum_{j=1}^4 \lambda_j^L \cdot P_j^L}{\sum_{j=1}^4 \lambda_j^L} \dots\dots\dots (2)$$

Where λ_j^L and P_j^L ($j = 1, 2, \dots, 4$) denotes the j^{th} eigen value and principal component respectively. It is noted that the values of λ_j^L gradually fall as the suffix increases.

Capital productivity risk index (I^{CP}) was

supposed to be determined by G of Net sales revenue to investment in fixed assets ratio (Y_1), G of Net sales revenue to investment in inventory ratio (Y_2), G of Net sales revenue to investment in trade receivables ratio (Y_3) and G of Net sales revenue to investment in cash ratio (Y_4). In the weighted average form it stands as:

$$I^{CP} = \frac{\sum_{j=1}^4 \lambda_j^{CP} \cdot P_j^{CP}}{\sum_{j=1}^4 \lambda_j^{CP}} \dots\dots\dots (3)$$

Here λ_j^{CP} ($j = 1, 2, 3, 4$) is the j^{th} Eigen value and P_j^{CP} ($j = 1, 2, 3, 4$) denotes the j^{th} principal component.

Further, cost structure risk, as a latent variable was supposed to be linearly determined by three relevant components such as G of operating cost to total cost ratio (Z_1), G of direct cost to total cost ratio (Z_2) and G of total cost to net sales ratio (Z_3). In the weighted average form, the cost structure risk index (I^{CS}) can be expressed as:

$$I^{CS} = \frac{\sum_{j=1}^3 \lambda_j^{CS} \cdot P_j^{CS}}{\sum_{j=1}^3 \lambda_j^{CS}} \dots\dots\dots (4)$$

Here λ_j^{CS} ($j = 1, 2, 3$) denotes the j^{th} Eigen value and P_j^{CS} denotes the j^{th} principal component.

In the Second stage PCA was run to design the CRI by adopting the same steps as outlined above and ultimately the computed

CRI is as follows:

$$CRI = \frac{\sum_{j=1}^3 \lambda'_j P'_j}{\sum_{j=1}^3 \lambda'_j}$$

The highest weight, λ'_1 , is attached to the first principal component, since it accounts for the largest proportion of the total variation in all explanatory variables. As the suffix increases, the proportion of variance explained by the respective principal components decreases. Using algebra, each component, P'_j can be expressed as a linear combination of the three sub-indices as

$$P'_1 = \theta_{11} I^L + \theta_{12} I^{CP} + \theta_{13} I^{CS}$$

$$P'_2 = \theta_{21} I^L + \theta_{22} I^{CP} + \theta_{23} I^{CS}$$

$$P'_3 = \theta_{31} I^L + \theta_{32} I^{CP} + \theta_{33} I^{CS}$$

Hence, the overall CRI can be expressed as:

$$CRI = \frac{\sum_{j=1}^3 \lambda'_j (\theta_{j1} I^L + \theta_{j2} I^{CP} + \theta_{j3} I^{CS})}{\sum_{j=1}^3 \lambda'_j}$$

Model Specification:

The review of the existing literature reveals that the profitability of a company largely depends on several factors, such as company risk, tangibility, growth opportunity, efficiency of managing assets, firm size etc. There are plausible reasons as to why these factors are likely to influence the variation in profitability of the companies.

Company risk: Theoretically, high company risk should be rewarded by higher

profitability. It is not desirable for a company to operate its business wheel keeping high company risk-low profitability profile in the long run. However, a great deal of controversy has always been persisting over this issue. The findings of the relevant studies carried out so far failed to arrive at a definite conclusion. One school of thought pleads that profitability and company risk are not influenced by each other rather various industry conditions and business strategies affect them significantly (Oviatt and Bauerschmidt, 1991). Moreover, they also opine that there may be a negative relationship between company risk and profitability (Bettis and Mahajan 1985, Singh, 1986, Mallik & Sur, 2009). The other school of thought suggests a high degree of positive affiliation between company risk and profitability (Cootner and Holland, 1970). In this study, CRI was used as the company risk indicator while designing the regression models.

Tangibility: It is measured by the ratio of average fixed assets to total assets. Generally, the higher the proportion of investment in long term assets to investment in total assets, the higher is the tangibility and the higher the tangibility, the higher is the earning capability. So, theoretically tangibility should have a positive influence on the company's profitability. However,

the existing studies yield conflicting results. Pouraghajan et al. (2012) in their study showed a significant positive relationship of asset tangibility with return on assets and return on equity in Iranian firms while Abbas et al. (2013) in their study observed that asset tangibility failed to play a significant role in enhancing profitability of the companies belonging to the textile sector in Pakistan. Moreover, Zeitun & Tian (2007) in their study found a significant negative relationship of asset tangibility with the company's profitability.

Growth opportunity: It is measured by the average percentage change in the company's capital employed. It is recognized as one of the determinants of profitability of a company (Bhayani, 2010; Purohit & Tandon; 2015). The higher the growth opportunity, the higher is the profitability. So, the company's profitability is positively influenced by its growth opportunity.

Efficiency of asset Management: It is also considered as a determinant of profitability. It is theoretically argued that with an increase in the efficiency of assets management of a company, the profitability of the company steps up. In fact, the greater the efficiency

of managing assets of the company, the higher is the scope of generating operating surplus. In this study, assets turnover ratio was considered as the indicator of efficiency of managing assets.

Size of the Firm: Theoretically, it is argued that a firm having large scale of operation can take the advantage of economies of scale leading to reduction in operating cost, adopt diversification strategies to mitigate business risk and also possesses greater bargaining capability which helps in arranging funds relatively at a lower cost resulting in higher profitability. So, the size of the firm has a positive effect on its profitability (Kakani et al., 2001; Pratheepan, 2014).

Model-I:

$$(ROCE)_i = \alpha + \beta_1 (CRI)_i + \beta_2 (TAN)_i + \beta_3 (GOPR)_i + \beta_4 (EAM)_i + \beta_5 (FSIZE)_i + U_i$$

Model-II:

$$(RONW)_i = \gamma + \theta_1 (CRI)_i + \theta_2 (TAN)_i + \theta_3 (GOPR)_i + \theta_4 (EAM)_i + \theta_5 (FSIZE)_i + V_i$$

Here U_i and V_i are the random disturbance term which follows *i.i.d* (individually and identically distributed) normal.

Description of the Variables:

<i>Variable Name</i>	<i>Variable Description</i>
Return on capital employed (ROCE)	Operating profit to capital employed ratio. It indicates the overall profitability of a company.

Contd....

Return on net worth (RONW)	Net profit available to equity shareholders to owners' equity. It measures the profitability of a company from the viewpoint of its equity shareholders.
Company risk index (CRI)	It is an index measured by using PCA method. Details description of this index were presented in the methodology section.
Tangibility (TAN)	It is measured by the average fixed assets to total assets ratio.
Growth opportunity (GOPR)	Average % change in capital employed
Efficiency of assets management (EAM)	It is measured in terms of average asset turnover ratio.
Firm size (FSIZE)	It is measured by the average natural logarithm of sales revenue.

V. Results and Discussion

A. Analysis of Liquidity Risk Index, Cost Structure Risk Index and Capital Productivity Index

Table I presents the LRI, CPRI and CSRI of each of the selected companies for the study period measured applying PCA. This table discloses that based on LRI, out of the fifteen selected companies eight companies, namely Britannia, Colgate, Glaxo, Gujarat, Mondelez, Nirma, Tata and Uflex found place in the category of 'LR above the Indian FMCG industry average' while the remaining seven companies, namely Dabur, Godfrey, HUL, ITC, Marico, Nestle and Ruchi were placed in the category of 'LR below the Indian FMCG industry average'. Similarly, eight companies, namely Glaxo, Gujarat, Marico, Nestle, Nirma, Ruchi, Tata and Uflex established themselves in the category of 'CPR above the Indian FMCG

industry average' whereas the remaining seven companies, namely Britannia, Colgate, Dabur, Godfrey, HUL, ITC and Mondelez were able to consolidate themselves in the category of 'CPR below the Indian FMCG industry average'. Moreover, eight companies, namely Britannia, Gujarat, Marico, Mondelez, Nirma, Ruchi, Tata and Uflex were established themselves in the category of 'CSR above the Indian FMCG industry average' while the remaining seven companies, namely Colgate, Dabur, Glaxo, Godfrey, HUL, ITC and Nestle were placed in the category of 'CSR below the Indian FMCG industry average'. One notable outcome of this study is that only four companies, namely Dabur, Godfrey, HUL and ITC kept themselves in the lower risk classes in respect of all the dimensions of CRI in comparison with the Indian FMCG industry average during the study period.

Table- I: Liquidity Risk Index, Cost Structure Risk Index and Capital Productivity Index of the Selected FMCG Companies in India

Serial No.	Company	Liquidity Risk Index (LRI)			Capital Productivity Risk Index (CPRI)			Cost Structure Risk Index (CSRI)		
		LRI	Status	Rank	CPRI	Status	Rank	CSRI	Status	Rank
1	Britannia	0.227	A	6	0.093	B	10	0.380	A	1
2	Colgate	0.236	A	4	0.001	B	15	0.179	B	10
3	Dabur	0.175	B	12	0.057	B	13	0.190	B	9
4	Glaxo	0.322	A	1	0.111	A	7	0.100	B	13
5	Godfrey	0.173	B	13	0.044	B	14	0.143	B	11
6	Gujarat	0.218	A	7	0.147	A	3	0.291	A	5
7	HUL	0.138	B	15	0.078	B	11	0.121	B	12
8	ITC	0.190	B	10	0.096	B	9	0.072	B	15
9	Marico	0.196	B	9	0.102	A	8	0.252	A	7
10	Mondelez	0.292	A	3	0.071	B	12	0.231	A	8
11	Nestle	0.164	B	14	0.121	A	4	0.095	B	14
12	Nirma	0.229	A	5	0.116	A	6	0.347	A	2
13	Ruchi	0.178	B	11	0.158	A	2	0.299	A	4
14	Tata	0.304	A	2	0.198	A	1	0.325	A	3
15	Uflex	0.206	A	8	0.120	A	5	0.254	A	6
Indian FMCG Industry Average		0.217			0.101			0.219		

‘A’ denotes ‘LRI/CPRI/CSRI above the ‘ Indian FMCG Industry Average’

‘B’ denotes ‘LRI/CPRI/CSRI below the ‘Indian FMCG Industry Average’

Kendall’s coefficient of concordance among the selected components of company risk (W) is 0.531746 and Chi-square (χ^2) value of W is 22.3333 being significant at 10 per cent level.

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capitaline Market Publishers (I) Ltd., Mumbai.

Table I also shows that the highest rank was secured by Tata in respect of instability in revenue generating capability using capital base while the second and third ranks were captured by the company in respect of volatility in liquidity and cost structure fronts respectively. However, the sixth, first and tenth ranks were secured by Britannia in respect of risks associated with liquidity, cost structure and capital productivity fronts respectively. Colgate was placed in the lowest rank in respect of the risk on capital productivity front and occupied the tenth rank based on CSRI while the company established itself as one of the front runners in respect of LRI by occupying the fourth rank. HUL was placed on the back-benches by capturing the fifteenth, twelfth and eleventh ranks based on LRI, CSRI and CPRI respectively. Similarly, ITC established itself as back-bencher by occupying the fifteenth, ninth and tenth ranks in respect of CSRI, CPRI and LRI respectively and Godfrey was also able to consolidate its place on the back-benches by capturing the thirteenth, eleventh and fourteenth ranks in respect of LRI, CSRI and CPRI respectively. Glaxo enjoyed low degree of cost structure risk as it captured the thirteenth rank whereas the highest volatility and the seventh highest volatility were observed in liquidity and capital productivity fronts of the company

respectively during the study period. Marico kept a balance among the components of company risk by placing itself in the seventh, eighth and ninth ranks in respect of CSRI, CPRI and LRI respectively. Similarly, a uniformity was maintained by Uflex by capturing the fifth, sixth and eighth ranks in respect of CPRI, CSRI and LRI respectively. However, Nestle established itself on back-benches by occupying the fourteenth rank on the basis of both LRI and CSRI whereas the company was able to find place almost on front-bench by placing itself in the fourth rank in respect of CPRI. But, at a glance, it is next to impossible to draw an inference on the extent of closeness among LRI, CSRI and CPRI of the sample companies during the period under study. In order to resolve the issue associated with the presence of uniformity among the LR, CSR and CPR of the selected companies during the study period, Kendall's coefficient of concordance (W) among LRI, CSRI and CPRI was ascertained. For the purpose of examining the significance of W, Chi-square (χ^2) test was applied. Table I discloses that the computed value of W (0.531746) was found to be statistically significant at 10 per cent level. So, an evidence of uniformity among LR, CSR and CPR of the sample companies was noticed during the study period.

B. Status of Company Risk Index:

Table II discloses the CRI of each of the sample companies ascertained by adopting PCA during the study period. This table shows that the company risk was the highest in Tata (0.262) followed by Glaxo (0.214). Mondelez (0.200), Nirma (0.198), Gujrat (0.197), Britannia (0.192), Ruchi (0.181), Uflex (0.177), Marico (0.164), Colgate (0.141), ITC 0.139), Nestle (0.137), Dabur (0.131), Godfrey (0.120), and HUL (0.112) respectively in that order. Out of the fifteen sample companies, eight companies, namely Britannia, Glaxo, Gujarat, Mondelez, Nirma, Ruchi, Tata and Uflex consolidated themselves in the ‘above the Indian FMCG industry average category’. The genesis of it lies in the fact that the values of all the three components of CRI, such as LRI, CPRI and CSRI were greater than the concerned industry averages in Gujarat, Nirma, Tata and Uflex whereas any two of these three components of CRI were higher in comparison with the related industry averages in Britannia, Glaxo, Mondelez and Ruchi. The remaining seven companies, namely Colgate, Dabur, Godfrey, HUL, ITC, Marico and Nestle found place in the class of ‘below the Indian FMCG industry average’. It is gleaned from the fact that all the three components of CRI, namely LRI, CPRI and CSRI were lower as compared to

the concerned industry averages in Dabur, Godfrey, HUL and ITC while any two of these three components of CRI were lower as compared to the related industry averages in Colgate, Marico and Nestle.

While carrying out a systematic analysis as shown in Table II all the sample companies were classified into three groups. The sample companies having CRI values of above 0.18 were categorized as the highly risky companies, the companies with CRI values within the range of 0.14 to 0.18 were recognized as the companies with moderate level of risk and the companies having CRI values of below 0.14 were considered as the less risky companies. Table II reveals that seven companies, namely Britannia, Glaxo, Gujarat, Mondelez, Nirma, Ruchi and Tata established themselves as the highly risk companies; three companies, such as Colgate, Marico and Uflex found place in the category of the medium level of CRI and the remaining five companies, namely Dabur, Godfrey, HUL, ITC and Nestle consolidated themselves in the less risky class during the period under study.

Table- II: Company Risk Index of the Selected FMCG Companies in India

Serial No.	Company	Company Risk Index	Status	Rank
1	Britannia	0.192	A,H	6
2	Colgate	0.141	B,M	10
3	Dabur	0.131	B,L	13
4	Glaxo	0.214	A,H	2
5	Godfrey	0.120	B,L	14
6	Gujarat	0.197	A,H	5
7	HUL	0.112	B,L	15
8	ITC	0.139	B,L	11
9	Marico	0.164	B,M	9
10	Mondelez	0.200	A,H	3
11	Nestle	0.137	B,L	12
12	Nirma	0.198	A,H	4
13	Ruchi	0.181	A,H	7
14	Tata	0.266	A,H	1
15	Uflex	0.177	A,M	8
Indian FMCG Industry Average		0.171		

‘A’ denotes ‘CRI above the Indian FMCG Industry Average’.

‘B’ denotes ‘CRI below the India FMCG Industry Average’.

‘H’ denotes ‘Company having higher level of risk’.

‘M’ denotes ‘Company having medium level of risk’.

‘L’ denotes ‘Company having lower level of risk’.

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capitaline Market Publishers (I) Ltd., Mumbai.

C. Findings of Regression Models

Table- III: Estimated Regression results of Model- I (Dependent Variable: ROCE)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TAN	21.33317	21.24575	1.004115	0.3416
CRI	138.7552	88.47833	1.568239	0.1513
GOPR	3.774423	0.747722	5.047892	0.0007
EAM	14.98106	3.012648	4.972722	0.0008
FSIZE	-19.33155	6.376547	-3.031665	0.0142
C	61.60647	40.34961	1.526817	0.1612

R-squared **0.895747**
F-statistic 15.46573
Prob (F-statistic) 0.000345

Table III shows that the explanatory variables CRI, GOPR, EAM, and FSIZE had significant influence on the overall profitability as measured in terms of ROCE. The CRI had exercised a strongly positive influence on firm’s ROCE at 15 per cent level of significance. With one unit increase in CRI, there was a positive impact on the value of ROCE by an amount of 138.75. The result reveals that the growth opportunity had a highly significant positive influence on ROCE. The estimated coefficient value

implies that with 1 unit increase in growth opportunity may lead to 3.77 unit increase in ROCE. It was observed that EAM had highly significant positive impact on firm’s ROCE with a coefficient value of 14.98. It implies that an increase in the level of efficiency of the selected companies by 1 per cent resulted in an increase in ROCE by 14.98 percent. The relationship between firm size and ROCE was observed to be negative and significant in the selected companies.

Table- IV: Estimated Regression results of Model- II (Dependent Variable: RONW)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TAN	6.633370	17.55213	0.377924	0.7142
CRI	93.02058	82.63268	1.125712	0.2894
GOPR	3.398528	0.530754	6.403208	0.0001

Contd....

EAM	12.66412	1.271618	9.959061	0.0000
FSIZE	-16.94647	3.882594	-4.364731	0.0018
C	63.20615	37.61347	1.680413	0.1272

R-squared **0.919958**
F-statistic 20.68807
Prob (F-statistic) 0.000109

The estimated regression results reveal that out of the five explanatory variables, GOPR, MEFFI and FSIZE had significant influence on firm’s profitability from the viewpoint of its owners as measured in terms of RONW. The GOPR was positively associated with the RONW and was found to be statistically significant at 1 percent level with a coefficient value of 3.39. It indicates that an increase of 1 percent in the growth opportunity led to an increase in the RONW by 3.39 percent. The EAM had exercised a strongly positive influence on firm’s ROCE at 1 percent level of significance. With one unit increase in EAM, there was a positive impact on the value of RONW by an amount of 12.66. The FSIZE was negatively associated with the RONW of the selected companies and was found to be statistically significant at 1 percent level with a coefficient value of -16.94. Both the regression models were found to be statistically significant (F-test = 0.000, $p < 0.01$), with higher R² values indicating that the goodness of fit statistics of the examined models was very high. Furthermore, it is

important to note that although CRI had a positive significant influence on ROCE, its effect on RONW was found to be insignificant.

Conclusion:

Managing company risk is an important aspect of overall corporate management of FMCG companies in India. Proper measurement of company risk by considering its major components like liquidity risk, cost structure risk and capital productivity risk helps in taking relevant policy decisions. In this context, the measurement of company risk by applying a suitable composite index is the prime focus area of the present study.

The analysis of 15 selected Indian FMCG companies made in the study showed that the company risk was the highest in Tata (0.262) while it was the least in HUL during the study period. The systematic analysis based on the company risk index as designed in this study observed that half of the selected companies were in the category of higher level of company risk whereas one

third of the companies in the category of lower level of company risk.

The results obtained from the regression analysis revealed that company risk index, growth opportunity and efficiency of asset management had significant positive influence on the overall profitability as measured in terms of ROCE in the selected FMCG companies during the study period while strong evidence of positive influence of growth opportunity and efficiency of asset management on the company's profitability from the view point of its owners as measured in terms of RONW was observed in the selected companies in the same period. The firm size had a significant negative impact on both ROCE and RONW. On the basis of the outcomes as discussed above, it is inferred that high company risk was well compensated by high overall return while company risk completely mismatched with owners' return in the sample companies during the period under study.

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Appendix-I

Sl. No.	List of Selected Companies
1.	Britannia
2.	Colgate
3.	Dabur
4.	Glaxo
5.	Godfrey
6.	Gujarat
7.	HUL
8.	ITC
9.	Marico
10.	Mondelez
11.	Nestle
12.	Nirma
13.	Ruchi
14.	Tata
15.	Uflex

Competitive Differentiation through Intangibles— A case study of Maruti Suzuki Ltd.

Pradeep Kumar Singh

Abstract:

Contemporary environment is very dynamic and challenging, a company who want to survive and grow only mantra is minimization of competition with differentiation in offering (whether their product or service) for retention of customer to enhance brand loyalty. Competitive differentiation is a new strategy when your product/solution is unique and no one has anything “on the truck” that can compete against your offering at all. Competitive Differentiation is one step ahead from normal differentiation; indicates how a company is going to minimize competition using differentiation as a tool in the light of competitive strategy.

Competitive differentiation is possible by unique intangibles in current era. Unique intangible assets are those intangibles which are not common in nature or different status for value creation process and specific advantages offers to a corporate. According to the nature of different industries and corporate’s different types of information’s, internal structures, agreements are exist which are main source of wealth creation.

This research paper explicates conceptual understanding of Competitive differentiation, value creation & role of intangibles in general for top Indian corporate’s and as a special case study for Maruthi Suzuki ltd as an automobile company. Researcher analyzes their product offerings, service, brand image which creates a competitive differentiation in the contemporary market. Applying content analysis as tool, finally researcher finds some specific initiatives such as brand management and facelift of models, strong R&D network and skilled engineers, creation of patent every year, strong sales & service outlets, focus on customer’s engagement initiative, Digitalisation and Innovation and accessories etc. are the important intangible segment which creates competitive differentiation for Maruthi Suzuki ltd.

Key Word:

Competitive differentiation, Unique intangibles, Value creation, Social & Relational Capital, Brand Image

Introduction

In management differentiation mean how your activities are different as compare to you competitor. Basically differentiation is a word used in marketing management denotes how your product is different in terms of quality of product, superior or attractive design or structure wise or superior uses or in terms of brand value etc. It is a strategy which divide whole customers segment into own revenue segment or future perspective revenue segment.

In marketing management this word differentiation pioneered by Theodore Levitt¹ he argued that through differentiation companies can attract a large number of potential customers leads to higher revenue and higher market share for the corporate within industry. In the last four decades we have seen Indian as well as MNC's consistently differentiating their product one in another way in terms of process, design, and structure of the product, or differentiation in post purchase services and most important differentiation in brand image of the product, which will enhance customer loyalty in a long run.

Competitive differentiation is when your

¹Theodore Levitt (1980), Marketing Success Through Differentiation—of Anything, Harvard Business Review, January–February

product/solution is unique and no one has anything “on the truck” that can compete against your offering at all. Competitive Differentiation is one step ahead from normal differentiation; indicate how a company is going to minimize competition using differentiation as a tool in the light of competitive strategy. Especially after 1994 when globalization expended in all the area of business segment and most recent with various innovation came which enhance the area of competitive differentiation.

Competitive Differentiation -needs

Contemporary environment is very dynamic and challenging, a company who want to survive and grow only mantra is minimization of competition with differentiation in offering (whether their products or services) for retention of customer to enhance brand loyalty. Most of the multinational and large companies adopting competitive differentiation with the following objectives:

- Retention of customer to enhance revenue in a long run.
- Enhancement of Brand reputation and brand loyalty.
- Focus on growth and market share.
- Enhanced global orientation of the product or services.

- To follow strategic objective of the firm.

To align with the needs and objective of

the firm for competitive differentiation the following tools are used by the companies:

Exhibit I

Tools for Competitive Differentiation

Product	Services	Personnel	Channel	Images
Form	Ordering ease	Competence		
Features	Delivery	Courtesy		
Performance	Installation	Credibility	Coverage	Symbols
Conformance	Customer Training	Reliability	Expertise	Media
Durability	Customer Consulting	Responsiveness	Performance	Atmosphere
Reliability	Repair	Communication		Events
Style	Misc.			
Design				

Competitive differentiation & Intangibles

An intangibles is a invisible assets enhances future benefits that does not have a physical (e.g. building or equipment) or financial (e.g. stock or bond) embodiment². For example, patents, brand names, and unique organizational infrastructures that generate cost savings for companies can be defined as an intangible asset.

During the last three decades there has been a progressive movement into a knowledge-based, fast changing, technology intensive economy in which investments in human resources, information technology, research and development, and sales promotion and

advertising have become vital to support the strengthen the firm’s competitive position among the potential competitors enhance the future viability of the product and services.

But, today in the knowledge era it is well accepted that intangibles are the key drivers of the organizations. The intangible assets such as brand, patents, franchises, software, research programme, ideas, and expertise are having major role in the modern era.

Peter F. Drucker³, also suggested competitive differentiation through innovations. In his own words, “Innovation is the specific instrument of entrepreneurship. The act

²Lev, B. (2001). Intangibles: management, measurement, and reporting, Washington, D C: The Bookings Institution.

³Drucker, P F (1985). Innovation and Entrepreneurship: Practice and Principles, Harper Collins.s

that endows resources with a new capacity to create wealth.” Organizations can survive change only if they work towards creating new changes through continuous innovations. Drucker chided managers to not simply manage change but proactively create change⁴.

Success of a company depends upon the value creation and value creation associated with innovations, research and developments, brand building, relationship and networks. All these factors are directly or indirectly in the form of intangibles.

Various types of intangibles are popular in contemporary environment such as

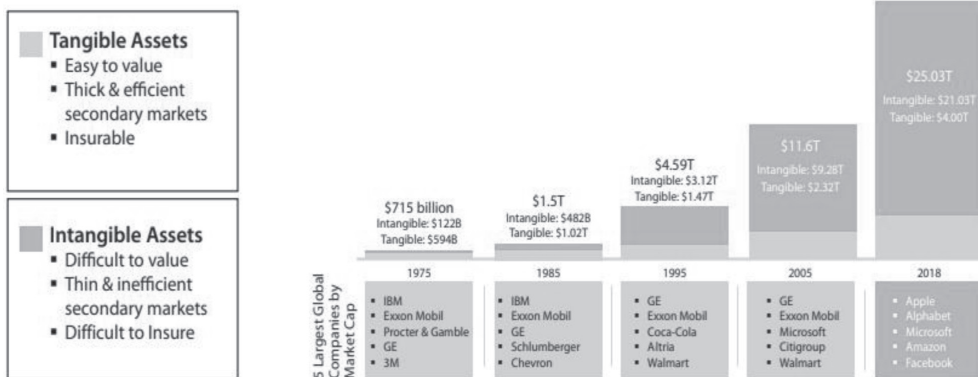
Exhibit II: The Intangible Advantage



Source: Swarup Kumar Dutta (2008), Intangible Assets as a Source of Competitive Advantage Look No Further, Effective Executive, April, pp 46.

Exhibit III:

Tangible Assets vs. Intangible Assets for S&P 500 Companies, 1975 – 2018



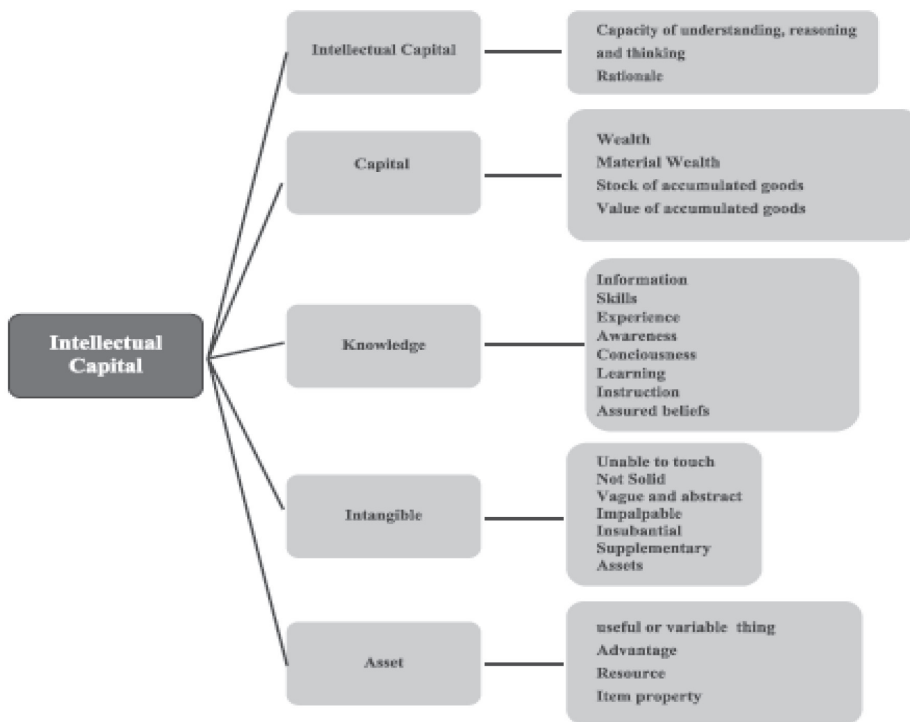
⁴Drucker, P F (1999). Management Challenges for the 21st Century, Harper Business.

customers related intangibles, artistic related intangibles, , market related intangibles , contract related intangibles, and technology related intangibles, etc all these are having imperative advantageous in value addition and value creation which finally leads to helps to create market share and enhance profitability. Various research studies in the last three decades endorsing the importance of intangibles in modern era.

Competitive Differentiation and Unique Intangibles

When a company is planning for competitive differentiation, they have to evaluate their unique intangibles provides superiority over other corporate's. Competitive differentiation is effected by unique intangibles. Unique intangibles assets are those intangibles which are not common in

Exhibit IV: Different aspect of Intellectual capital



Marr B & Moustaghfir K.(2005). Defining intellectual capital: *A three-dimensional approach*. *Management Decision* 43(9): 1114–1128.

nature or different status for value creation process and specific advantages offer to a particular corporate. According to the nature of different industries and corporate's different types of information, internal structures, agreements are exist which are main source of wealth creation, such as; Britannia may not be the most admired company but its strong brand continuously earns more money for it. The most valuable intangible assets for HUL are its brand and channel partners (both from the external structure).The market value of Dr. Reddy's is a factor of the quality of their knowledge base, the investment in R& D, the quality of their leadership (internal structure and employees knowledge). Several large corporations relate intangibles to something which cannot be easily replicated such as proven brands, strong distribution setups and R& D capabilities.

Features of distinctive intangibles which will enhance the competitive differentiation in the following ways:

- Major contribution in the value creation process of the corporate in knowledge economy.
- Not similar in (Unique nature) other industries and same types of corporate's which leads brand loyalty.
- Responsible for enhancement

of market share and creation of monopolistic competition.

- Offer specific business opportunities to the corporate's.
- Elimination/minimization of competition with unique design and process of product and services within the industry.
- Provides an opportunity to develop low cost sustainable product.

Some explicit intangibles according to nature of industry such as in Information Technology Companies (Acquired contract rights, Technical know-how), Pharma Industries (Drug Patent, Non-compete fee), FMCG sector (Trademarks Business and Commercial Rights), Automobile Industry (Industrial designs, Models fees), Capital Goods Industry (Technical know-how, Computer software), Infrastructure Industry (Mining rights, Manufacturing and Technology rights, Water Drawing Rights), Telecommunication Industry (Bandwidth Licenses, Entry/license fees, Indefeasible Rights of Use (IRUs)) and Banking industry (Application software, skills and human resources). Exhibit V indicates certain unique intangibles in different industries as per nature and activities in which they investing a large amount and are key intangibles in operational area.

Exhibit V : Intangible Assets and competitive differentiation by Indian corporates.

S.N.	Industries	Inimitable Intangibles & Competitive differentiation
01	Information Technology industry	Acquired contract rights, Technical know-how.
02	Pharmaceutical industry	Drug patent, Non-compete fee.
03	FMCG industry	Trademarks, Business and Commercial Rights.
04	Automobile industry	Industrial designs, Product designs Models fees. Non-Compete Fees
05	Capital Goods industry	Technical know-how, Computer software.
06	Infrastructure industry	Mining rights, Manufacturing and Technology rights, Water drawing rights.
07	Telecommunication industry	Bandwidth, Licenses, Entry/license fees, Indefeasible Rights of Use (IRUs).
08	Banking industry	Application software, Human resources.

Source: Authors own compilation and collection from annual reports of sample companies from 2009-10 to 2018-19.

These are the assets which enhance market share of corporate’s in India as well as global market. It provides cost effectiveness to the corporate, offers specific business opportunities to the business group, eliminate competition among same corporate group etc. with the help of these intangibles corporate’s will be able to provide low cost sustainable and affordable product and services to the lower income consumers (bottom line of the pyramid as suggested by C.K. Prahalad, 2000) to enhance revenue and utilize business opportunities. The following are the specific intangibles provide competitive differentiation within industry:

- **Computer and application software’s**
In the age of knowledge and

information technology Computer and application software’s they are unique intangible, different from corporate to corporate. According to the requirement of corporate, are developing application software to provide better services and information within time.

- **In automobile industry Model fees is the unique intangible which promotes their different product models. according to the fashion, trends, requirement of the various customers and suitability automobile companies are developing various models and creating value for companies.**



- **Patent** is another unique intangible assets which is significant in Pharma and FMCG industries. Patent is key intangible especially in Pharma sector with the help of this corporate's developing and marketing various drugs in Indian as well as global market.
- **Technical Know-How** is important intangible assets in many industries because in the current competitive era without sustainable innovations industry cannot survive in the market. Technical Know-How is common in IT sector, Pharma, Automobile, Capital Goods and Infrastructure Industry, which leads sustainable and affordable innovations resulted higher value creation for shareholders.
- **Non-Compete Fees** is another unique intangible asset which is popular in Pharma and FMCG industry, is paid to minimize commercial competition in one particular segment area of market. With the help of this type of agreement, companies are creating higher market share and higher profitability in particular areas of market or region.
- **Trademarks and Designs** are most popular unique intangibles in FMCG industry. They are attracting and retaining a large numbers of customers with their unique trademarks and as

well as design of the product, helpful for differentiation of product among the various competitors products. Trademarks and designs are also attracting more and more customers toward product which leads higher earnings for the corporate's.

- **Mining rights** are the unique intangibles in Capital Goods and Infrastructure industry (such as iron and steel etc.) with this right only they are ensured for prompt supply of raw material for a long time. They are amortizing it on the basis of lease on SLM method or as per the life of mines.
- **Water Drawing Rights** is unique intangibles in infrastructure industry (especially in cement companies and steel companies), which ensures sufficient and smooth supply of raw water for cooling and other purpose of industry.
- **Bandwidth license** is unique intangible assets in Telecommunication industry; based on this license, frequency is allotted to the telecommunication operators.
- **Indefeasible Rights of Use (IRUs)** are unique intangible assets in Telecommunication industry; an IRU gives the purchaser the right to use some capacity on a telecommunications cable system, including the authority

to lease IRU capacity to other parties who are interest. Being a technical rights IRU's are to a physical part of an underground cable is having commercial value considered as an asset.

COMPETITIVE DIFFERENTIATION-trends of Indian Corporates:

After the content analysis of the leading corporates of India from 2009-10 to 2019-20 the following observations are made by the researcher:

- Human resource accounting, Economic value added, Value added reporting are the most common and popular methods to disclose and report about the intangibles creates Competitive differentiation in terms of reporting practices.
- Technical know-how, Trademarks and Application Software's are highly preferred intangibles by the Indian companies through which they are achieving competitive differentiation.
- Customer's relationship, Order backlogs, Supplier relationship, Non-compete fees are the subsequent preferences of the Indian corporate's as competitive differentiation.
- Secret intangibles such as; organization structure, organizational culture, companies' strategies, process and procedures are not shared by

Indian corporate's due to competitive advantages over competitors and secret nature of such information's.

- Information technology companies are having competitive advantages over others due to voluntarily reporting about intangibles in form of Human value, brand valuation, EVA, MVA, Enterprise value, Intangible assets score sheet etc.
- In Pharma sector Dr Reddy's is one of the leading firm, which is voluntarily reporting and disclosing information related to Intangibles such as; EVA, MVA, Brand valuation, and Total shareholders returns in their annual reports. Their research and development facilities creating competitive differentiation with other pharma companies.
- In Telecommunication companies their brand names, internal operation methodologies, network communication, client base are the intangibles creates competitive differentiation.
- Brand loyalty and Brand management is having major impact on consumers, suppliers, staff and investors/ financiers. Brand management is important segment for competitive differentiation (specially FMCG and Electronic Goods Industry)

Customer loyalty and employee commitment are two of the most important intangible assets. Future investors may look for things like a customer satisfaction index or employee satisfaction index in companies where they plan to put their money⁵. International companies like 3M, General Electric, Intel, Microsoft, ABB, Kao Corporation and Indian companies like Infosys, Hindustan Unilever Ltd., and Reliance in India have already started leveraging intangible assets smartly.

COMPETITIVE DIFFERENTIATION STRATEGY by Maruthi Suzuki Ltd

Maruti Suzuki (formerly Maruti Udyog Ltd) was established in 1981 as a joint venture between the Government of India and Suzuki Motor Corporation (SMC), Japan.

Today, Maruti Suzuki is the one of leading car manufacturer in India and one of the largest subsidiary of SMC’s in terms of volume of production and sales. Maruthi

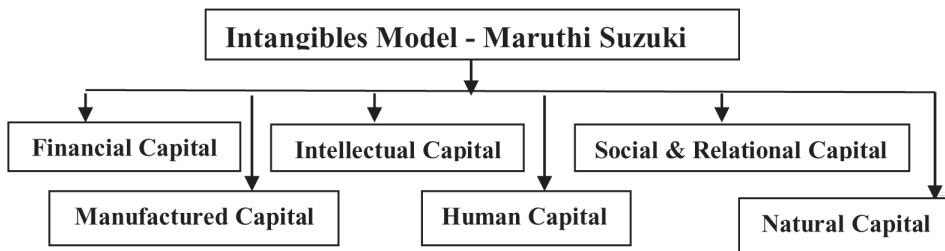
holds 46.8% market share in the Indian passenger vehicles market. it is listed on the BSE and NSE of India. 56.21% equity stake owns by SMC in the maruthi ltd.

Competitive differentiation is having two aspects: tangible and intangible aspect that distinguishes your products in your customers’ eyes: Tangible features are observable differences that make your products or services better, cheaper, or faster.

a company like Maruthi it includes attributes such as design features, size, , materials used, weight, color, technology embedded in the product, new technology that the product can now make use of, speed, safety, consistency, reliability, durability, and adaptability.

Differentiating features of the Maruthi that complement the product, such as pre-sale and after-sale service, parts availability, ease of upgrading, credit policies, speed of delivery, and accessories. Intangible

Exhibit VI



⁵Swarup Kumar Dutta (2008), Intangible Assets as a Source of Competitive Advantage Look No Further, Effective Executive, April,2008 p 44

differentiation is the “aura” of the product such as; exclusivity, quality, individuality, security, and image.

Analyses of various capital of Maruthi for the last three years are as follows:

Financial Capital:

Financial capital is the important aspect of any organization and its performance. It involves funds obtain from various external sources or internal sources of the

organization and application for productivity purpose. It is used for day to day operation of business or long term objectives such as capital expenditure, provision of services etc. It is the backbone of all other activities. It is responsibility of the organization to understand utility of finance and how it is useful for various interrelated activities. It is one of the important parameters for the success of the organization.

Exhibit VII: Financial Capital

Financial Capital variables	2019-20	2018-19	2017-18
The company’s growth strategy along with disciplined allocation of capital , has led to sustained financial returns			
Capital employed (Rs in crore)	48,437	46142	43,928
Net Sales(Rs in crore)	71,691	83,027	78,105
PAT Margin (%)	7.9	9.0	9.9
Book value per share (In Rs)	1603	1527	1,382
ROCE(%)	14.9	23.8	28.1
DPS	60	80	80

Financial Capital-Input and output

2019-20		2018-19	
Input capital	Output capital	Input capital	Output capital
● Rs. 46142 crorecapital employed at beginning of the year.	● Rs. 48437 crore capital at end of the year.	● Rs. 417,57crore capital employed at the start of year. 48437crore capital at end of the year.	● Rs. 46142 crorecapital at end of the year.



Manufactured capital

Manufactured capital is the composition of various physical infrastructures such as; land and building, plant and machinery, Computers & Equipment’s etc. It is important for an organization to keep all physical facilities’ for smooth production and enhance the productivity. It may be

owned by the organization or belongs to the others which is used such as; Ports, public infrastructure etc. it enhance production schedules minimizes production cycle and maximize efficiency. Efficient management of physical resource and timely modernization is the key for the sustainability and create differentiation by Maruthi as compare to the competitors.

Exhibit: VIII Manufactured Capital

Manufactured Capital variables	2019-20	2018-19	2017-18
The company utilized state of art facilities and highly efficient green manufacturing processes to manufacture reliable and quality product.			
Vehicles sold (In No)	15,63,297	18,62,449	16,53,500
Value in (Rs in crore)	71,691	83,027	78,105

Manufactured Capital- Input output

2019-20		2018-19	
Input capital	Output capital	Input capital	Output capital
<ul style="list-style-type: none"> ● 2 manufacturing facilities in Haryana, and 1 manufacturing facility in Gujarat, managed by Suzuki Motor Gujarat. ● Key raw material – steel coils (210,764 MT), non-ferrous castings (38,888 MT) and paints (10,070 KL) 	<ul style="list-style-type: none"> ● 1,563,297 vehicles sold ● Value of sales Rs.71,690crore 	<ul style="list-style-type: none"> ● Key raw materials – steel coils (284,306 MT), ferrous castings (41,204 MT), non-ferrous castings (48,354 MT) and paints (13,005 KL) ● 2 manufacturing facilities in Haryana, India (capacity 1.5 million vehicles per annum) ● SMG manufacturing facility in Gujarat, India supporting additional sales capacity 	<ul style="list-style-type: none"> ● 1,862,449 vehicles sold ● Value of sales Rs.83027crore

Intellectual Capital:

Intellectual capital is the important key for differentiation in the competitive era. It includes Brands, Management of reputation which is critical for the organization. Intellectual capital is a combination of resources such as patents, copyrights,

intellectual property and organizational systems, procedures and protocols. All these can enhance the competitive advantages in the contemporary environment. Constant effort's to create intellectual capital and management is essential to leverage the competitive advantages by Maruthi.

Exhibit: IX Intellectual Capital

Intellectual Capital variables	2019-20	2018-19	2017-18
With the product and technology license received from SMC, the company is able to offer relevant products in the Indian market.			
New models	2	2	NIL
Facelift models	6	2	NIL
R & D spends (Rs. in crore)	764	713	832
Patent applied/granted	98/11	100/12	80/3
Designed filed/registered	53/60	35/54	27/48
R & D Engineers	1845	1600	1452

Intellectual Capital- Input output

2019-20		2018-19	
Input capital	Output capital	Input capital	Output capital
<ul style="list-style-type: none"> ● Rs. 7,64 crore R&D investment ● R&D facility at Rohtak, India, supported by SMC, Japan ● 1,845 R&D engineers ● Product licenses from SMC 	<ul style="list-style-type: none"> ● 2 New models – XL6 and S-Presso ● 6 facelift models – VitaraBrezza, Ignis, Dzire, ● Alto 800, Eeco and Baleno ● 98 patents filed and 11 granted ● 53 designs filed and 60 registered ● 19 technical papers presented ● Product development cycle reduced ● Vehicle fuel economy, lower emissions, and enhanced safety features 	<ul style="list-style-type: none"> ● Product licences from SMC ● R&D facility at Rohtak, India supported by SMC, Japan ● Rs. 7,13Crore R&D investment ● 1,600 R&D engineers 	<ul style="list-style-type: none"> ● 2 New models – Wagon R, Ertiga ● 2 facelift models – Baleno, Ciaz ● 100 patents filed and 12 granted ● 35 designs filed and 54 registered ● 24 technical papers presented. ● Reduced product development cycle ● Improved vehicle-fuel economy, lower emissions and enhanced safety

Human Capital:

Human capital denotes to the knowledge, skills and know-how of an organization’s professionals as well as their motivation and commitment and their leadership ability, innovation skill and shared knowledge. The competitiveness and success of an organization is tied to effective management

of its teams and care for their motivation and well-being. Excessive attrition or insufficient remuneration policies can harm reputations and impair an organization’s capability to create value. It is also affected by proper training developmental space and career management and most important selection of professionals and role offered by organization.

Exhibit X: Human Capital

Human Capital variables	2019-20	2018-19	2017-18
The company is focused on developing the skills, competencies, health, safety and wellbeing of its human resources, so that they may be optimally leveraged for value creation across other capitals.			
Fatalities	NIL	NIL	NIL
Lost time injury rate	NIL	NIL	NIL
Employees benefit expenses (Rs. in crore)	3384	3255	2834
Total person –Hours of training provided to employees (Person-Hours)	9,85,518	14,20,576	1,033,055
Total Employees	33282	34197	34,515

Human Capital- Input output

2019-20		2018-19	
Input capital	Output capital	Input capital	Output capital
<ul style="list-style-type: none"> ● 15,945 regular employees ● 602 regular employees joined ● 985,518 person-hours of training ● Rs.3,384 crore employee benefit expenses 	<ul style="list-style-type: none"> ● 2 Cordial industrial relations ● Zero fatalities and zero Lost Time Injury Rate ● 636,851 suggestions from employees, leading to Rs.248 croresavings 	<ul style="list-style-type: none"> ● 15,892 regular employees ● 1,432 regular employees joined ● 1,196,822 training person-hours ● 32,549 million employee benefit expenses 	<ul style="list-style-type: none"> ● Cordial industrial relations ● Zero fatalities and lost-time injury rate ● 880,000 suggestions from employees leading to Rs. 74 crore savings

Social and Relationship Capital:

Social and relationship capital-the preservation of resources created by the relationships between an organization and all its various stakeholders. It includes relation with the community, government

relations, customers and supply chain partners with the way of Corporate Social Responsibility (CSR), social engagement etc. it also includes networking with the various partner organization such as Operating licenses, dependence on the public sector supply chain managers.

Exhibit: XI: Social and Relational Capital

Social and Relational Capital variables	2019-20	2018-19	2017-18
The company strives to maintain mutually respectful and beneficial relationship with its stakeholders such as customers, value chain partners, local communities and the Government, creating a favorable environment for business.			
Sales outlets	3086	2934	1,820
Service outlets	3864	3614	3,145
Sales workforce trained	50,000+	50,000+	50,000+
Service workforce trained	16,20,000+	13,00,000+	11,00,000+
Training facilities setup for improving the capabilities of suppliers workforce	304	169	158
Tier 1 Suppliers	519	512	488
Customers engagement initiative (No)	2,20,00,000+	2,00,00,000+	700,00,000+
CSR spends (Rs. in crore)	168	154	125
Road safety (No of drivers trained)	4,07,771	3,91,761	3,71,448

Social and Relationship Capital

2019-20		2018-19	
Input capital	Output capital	Input capital	Output capital
<ul style="list-style-type: none"> ● 519 Tier-1 suppliers ● 4,306 sales outlets (including pre-owned car sales outlets) ● 3,864 service outlets 	<ul style="list-style-type: none"> ● Over 22 million customers touched through customer engagement activities ● Over 50,000 sales staff trained ● Over 160,000 service staff trained 	<ul style="list-style-type: none"> ● 444 Tier-I suppliers with 551 plants ● 4,186 sales outlets (including True Value) ● 3,614 service outlets ● Over 28,000 customer engagement activities 	<ul style="list-style-type: none"> ● Over 20 million customers touched through sales and service activities ● Over 50,000 sales staff trained ● Over 130,000 service staff trained



2019-20		2018-19	
Input capital	Output capital	Input capital	Output capital
<ul style="list-style-type: none"> ● Training and capacity building of value chain partners ● Rs. 168 crore spent on CSR 	<ul style="list-style-type: none"> ● Social development programmes in 26 villages ● 407,771 persons trained at Institutes of Driving Training and Research and Road Safety Knowledge Centres 	<ul style="list-style-type: none"> ● Training and capacity building of value chain partners ● Rs. 1,54crore spent on Corporate Social Responsibility 	<ul style="list-style-type: none"> ● Social development programmes in 26 villages ● 391,761 persons trained at Institutes of Driving Training and Research.

Natural Capital:

Natural capital serves as the root and success for the entire business system (economic and social system). It provides resources which are critical to the company for production that often cannot be replaced. Resources are vary useful for development of economy includes water or fossil fuels, solar energy or agricultural crops, air, forests and oceans

etc. for automobile corporates iron ore, coal, petroleum and diesel are relevant factors. Similarly nature of land and other climatic conditions are equally important.

Dependence on natural resources, the environmental impact of its productive process, and what the company has to do to operate within the limits imposed by the environment.

Exhibit XII: Natural Capital

Natural Capital Variables	2019-20	2018-19	2017-18
The company strives to reduce the impact of its products and services on the environment through the sustainable use of natural resources and responsible wastage, wastewater and emission management practices			
Models in which proportion of material recyclable and recoverable measured using the international material data system(IMDS)	XL6 &S-PRESSO	WAGON- R	WAGON- R
TIER 1 supplier plants implemented ISO-14001 Environmental Management Systems	607	565	512
Water saved through dry wash system at service workshop(million liters)	1248	656	316

Natural Capital Variables	2019-20	2018-19	2017-18
Recycling of steel scraps	100%	100%	100%
Renewable energy used in manufacturing of vehicles (total solar power capacity– (MWp)	6.3	1.3	1.1
Cumulative CO2 Saved by using alternative fuel-driven vehicles since 2005-06(million MT)	1.16	1.06	0.84

Natural Capital- Input output

2019-20		2018-19	
Input capital	Output capital	Input capital	Output capital
<ul style="list-style-type: none"> ● 6,084,948 GJ energy consumed for manufacturing. ● 34.46 million spent on energy efficiency measures. ● Use of solar power for manufacturing. ● Canal water used for manufacturing. 	<ul style="list-style-type: none"> ● 120,187 MT metallic scrap recycled 429,485 tCO2e Scope 1 and 2 emissions. ● 3,182 million litres of water recycled 12,713 MT hazardous waste co-processed. ● Cumulative 1.16 million tCO2 emissions saved by using alternative fuel-driven vehicles since 2005-06. 	<ul style="list-style-type: none"> ● 7,577,755 GJ energy consumed for manufacturing. ● 44.76 million spent on energy efficiency measures. ● Use of solar power for manufacturing ● Canal water used for manufacturing. 	<ul style="list-style-type: none"> 122,439 MT metallic scrap recycled ● 488,834 tCO2e Scope 1 and 2 emissions ● 62% of manufacturing water demand met through recycled water ● 15,082 MT hazardous waste co-processed ● Cumulative 1,006,511 tCO2 emissions saved since 2005-06 due to alternative drive trains (e.g. CNG, hybrid) of in-use vehicle fleet ● 4-21% CO2 emission reduction in new and facelift models

Competitive Differentiation Strategy- key findings

- Brand Management and Facelift of models by Maruthi.
- Strong R& D Network and Skilled Engineers.
- Creation of Patent every year.
- Strong emphasizes on Training &Development of Engineers &Employees
- Strong Sales &Service Outlets.
- Focus on Customers Engagement Initiative (No)
- Larger spending on CSR
- Strong base of R& D engineers as compare to competitors.

Competitive Differentiation Strategy- New challenges in contemporary environment

Contemporary environment has been very dynamic especially in the last two years due to global pandemic–Covid 19. India in general and automobile sector in particular were affected by this situation considerably. Automobile sector is facing pressure to grow and evolve rapidly to stay competitive in this new environment. But growth can be difficult, and even the most intrepid sometimes need an extra dose of inspiration and that inspiration is brought about through

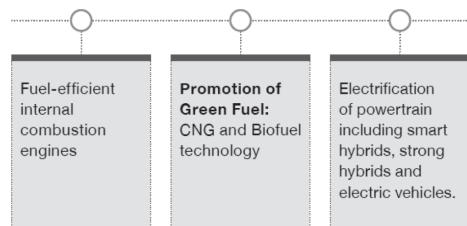
intangibles. The new product segment called ‘Electric vehicles (EV)’ is a new strategic area for automobile companies especially in four-wheeler vehicle segment. They are the game changer in coming days. To counter the challenges posed by Electric Vehicles (EV) segment the following **Strategic move adopted by Maruti Suzuki** are⁶:

- **Long-term strategic vision** - Company will launch electric vehicles in the country only after 2025 as demand for such vehicles at the moment is less and it would like to sell around 10,000 units a month whenever it enters the electric mobility space.
- **Focus on lower emissions**- According to company strategic plan immediate need to lower emissions and minimize the carbon footprint, India’s largest carmaker doesn’t see buyers transitioning to battery electric vehicles (BEVs) in droves anytime soon.
- **Review of Economic and infrastructure conditions** - Maruti Suzuki’s electrification strategy has to be “consistent with the economic and infrastructure conditions prevailing in the country.

⁶Annual report of 2020-21 Maruti Suzuki India Ltd p 21-23.

- **Lower income push demand-** the issues facing mass adoption of BEVs, highlighting significantly lower incomes, the high present-day cost of BEVs and negligible charging infrastructure in the country as the major hurdles.
- **Per capita income limitation's -** According to chairman's opinion highlighted in annual report "The per capita income in India is only about \$2,000, about five percent of that in Europe and Japan. This reduces the ability of a large number of people to buy expensive cars. Unfortunately, the technology presently available leads to electric cars being produced at a cost much higher than the conventional cars. This, along with the lack of charging infrastructure, makes it very difficult to sell electric cars to people who can only afford small cars".
- **Cost factor -** cars priced over Rs 15 lakh make up only five percent of passenger vehicle sales in India at present, and that would mean the acceptance of electric vehicles would be limited to a select few. Interestingly, almost all electric vehicles on sale in India today – barring the entry-level versions.

- **Focus on alternatives-** BEVs will go from being a great idea to a practical reality, and is thus seeking to strengthen its compressed natural gas (CNG) and hybrid vehicle portfolio, which it believes will help lower the impact of vehicular emissions on the environment till BEVs become feasible.



- **Focus on Global alliance -** Maruti Suzuki often mentions how it will leverage Suzuki's global alliance with Toyota to develop hybrid powertrain solutions for future models. hydrogen fuel cell technology for electric vehicles as an "interesting alternative" that should be "considered specially to reduce dependence on importing lithium."
- **Focus on life cycle-recycling strategy-** The Company is trying to make the entire life cycle of a car sustainable, including scrapping, dismantling and recycling. The Company collaborated with Toyota

Tsusho Group and established a joint venture named Maruti Suzuki Toyotsu India Private Limited (MSTI) for vehicle dismantling and recycling facility in India. The MSTI facility is almost ready to be operationalized and will be announced soon.

- **Focusing on future ecosystem-** Suzuki Motor Corporation is also developing the battery manufacturing ecosystem in India. Some measures includes, investing in India's first cell-level lithium battery manufacturing, skilling people on battery manufacturing, recycling of lithium-ion batteries and others.

Conclusion

Competitive Differentiation is a new corporate strategy to enhance the market share and growth in contemporary environment. Many companies slowly moving towards product innovation, product differentiation, changes in delivery process and many more, all are intangible in nature. Contemporary environment is very dynamic and challenging, a company who want to survive and grow only mantra is minimization of competition with differentiation in offering (whether their products or services) for retention of customer to enhance brand loyalty. Among the other automobile companies Maruthi

Suzuki is ahead from other competitors. Differentiating features of the Maruthi that complement the product, such as pre-sale and after-sale service, parts availability, ease of upgrading, credit policies, speed of delivery, Digitalisation and Innovation and accessories. Intangible differentiation is the "aura" of the product such as; exclusivity, quality, individuality, security, and image which differentiated Maruthi products as compare to competitors.

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Foreign Portfolio Investment in India: Trends and Determinants

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Bhaskar Goswami

Abstract:

The present study analyzes the long-run and short-run relationship of foreign portfolio investments (FPI) with other explanatory variables. The study uses monthly data from January 2002 to July 2020. The autoregressive distributed lag (ARDL) technique is used to find the long run co-integration relationship of the model variables. The result obtained from error correction model shows that the model is stable and there by explains the integration of the long-run relationship of FPI with other variables. The results confirm to the fact that in the long run, IIP has a significant positive relationship with FPI inflows while the stock market capitalization has significant negative relationship. However, in the short-run we find that all variables have a significant relationship with FPI. Thus our study can be a guide to investors and the policy makers to predict the pattern of the foreign portfolio investment in India.

Key Word:

Foreign Portfolio Investment (FPI), index of industrial production (IIP), stock market capitalization (MC), autoregressive distributed lag (ARDL) model.

Introduction

In an open economy, capital mobility across the borders is a common phenomenon. Most of the developing and underdeveloped countries suffers from saving investment gap. To bridge the saving-investment gap, capital inflow from the capital surplus developed countries to capital deficit countries can be a prerequisite for economic development. The capital flows from capital surplus country to capital deficit countries can be either in the form of debt or investment. Two types of capital inflows that are generally considered:

- (i) Foreign Direct Investment (FDI)
- (ii) Foreign Portfolio Investment (FPI)

Foreign Portfolio Investment (FPI) includes foreign institutional investment (FII), American depository receipts (ADR), and global depository receipts (GDR). Foreign institutional investment is that component of investment where the foreign institutional investors invest in assets that belong to a different country other than where these organizations are based. A foreign company shares that are listed in the US financial market and allows trade by individuals, banks and other financial institutions are the American depository receipts (ADR). The ADR is listed in American Stock Exchange i.e. New York Stock Exchange (NYSE)

or National Association of Securities Dealers Automated Quotations (NASDAQ). A company shares listed and traded in any stock exchange around the world except the company's originating country stock exchange and US stock exchange, through Overseas Depository Bank (ODB) branches is the global depository receipts (GDR). GDR is listed in non-US stock exchanges like London Stock Exchange or Luxembourg Stock Exchange etc.

India suffers from the problem of saving investment gap and capital deficiency. In 1990, Indian government faced a serious balance of payment problem and one major policy response was to register the foreign institutional investors under the securities and exchange board of India (SEBI) and allow them to invest in the financial markets so as to bridge this saving-investment gap. Portfolio equity investments are highly liquid, fluctuating in nature and easy to convert into currency within a short time. Foreign portfolio investment is also popularly known as "hot money". Lipsey (1999) argues that foreign direct investment (FDI) has more permanent nature than foreign portfolio Investment (FPI). The incidences of financial crises, including the great economic slowdown of the Indian economy between the time periods 1990 to 2020, can be attributed to the highly volatile

nature of FPI. Under these circumstances, there has been a renewed research interest in analyzing the determinants of foreign portfolio investment in India.

The paper is organized as follows; Section 2 deals with a brief survey of literature review followed by causal empiricism. In section 3 we highlight the trends in FPI in India. Section 4 deals with data and methodology. The results are spelled out in Section 5 and finally section 6 concludes.

Section 2: The literature review

In the existing literature as pointed out below, the determinants of FPI are not the same as those of FDI. However, there are some the factors that are common in both FDI and FPI. Some of very important and most relevant studies are presented here: Ekeocha, P. Chukwuemeka (2008) from their analysis found that FPI flows to Nigeria have a positive long run relationship with growth of non oil GDP. Duasa and S. H. Kassim (2009) find that economic growth causes more the FPI inflows to Malaysia. More volatile portfolio investment does not imply more economic growth in Malaysia. Yahya, W., & shujahat haider Hashmi, m. I (2015) found that FPI variation in Sri Lanka follows the economic growth. Garg and Pumi Dua (2014) found that higher domestic growth has significant positive relationship with foreign portfolio

investment (FPI). Parthapratim Pal's (1998) studies do not support the standpoint that FPI influx encourages economic development. Kasthuri K., M.N (2019), higher economic growth continues to attract more foreign portfolio investment inflows, but India's economic growth is independent of foreign portfolio investment.

Kulwant Rai and Bhanumurthy (2003) analyzed the determinate factors of foreign institutional investment (FII). They found positive relation between foreign institutional investment (FII) and return on the BSE while negative relationship between inflation in the US. Yahya, W., & shujahat haider Hashmi, m. I (2015) found that inflation rate have significant effect on volatility of foreign portfolio investment (FPI) in India but is insignificant in case of Pakistan and Sri Lanka.

Amarendra A, P. Salvi and S. Kumar (2017) estimation found that the foreign institutional Investment (FII) is very sensitive to the global liquidity in the long run. However, liquidity originating from the UK, the Euro area and Japan has no impact on Foreign Institutional Investment (FII) inflows to India. On the other hand, they also found that liquidity originating from US is a potent factor in steering FII flows to India. Role of liquidity channel to attract FII inflows to India is very important and

US monetary policies has larger influence on portfolio inflows to India than those of other major central bank. Ekeocha, P. Chukwuemeka (2008) from their analysis found that FPI flows to Nigeria has a positive long run relationship with real interest rate, financial openness, institutional quality and has a long run negative relationship with real exchange rate. Ritika Garg and Pumi Dua (2014) found that lower exchange rate volatility has significant positive relationship with foreign portfolio investment (FPI). Yahya, W., & shujahat haider Hashmi, m. I (2015) observed that inflation rate, interest rate and stock index have a significant effect on volatility of foreign portfolio investment (FPI) in India. Among these variables, in China, Pakistan and Sri Lanka, interest rate is insignificant in effecting the volatility of FPI. Khalafalla et. al (2018) investigation found that volatility of foreign portfolio investment (FPI) inflow to Saudi stock market have positive long run relationship with interest rate differential and nominal effective exchange rate. Rekha and Akasha Jain (2015) examined the causal relationship between FOREX reserves and foreign institutional investment inflows in India. They revealed that FII inflows have no noticeable impact on increasing FOREX reserves. Patricia L, D. Makoni (2020) study finds real exchange rate and inflation have a significant negative influence on foreign portfolio investment inflows in India.

According to Kotishwar's (2020) analysis, foreign institutional investment flows have a significant effect on equity market volatility. Agu et. Al (2019) empirically examination in Nigeria shows that interest rate has negative impact on foreign portfolio investment and stock market returns has positive significant impact. They recommended that to encourage the foreign portfolio investor government should provide business friendly environment. Bandani, K.K. (2005) observed that foreign portfolio investments in India have a significant positive impact on stock market returns. Prabheesh KP. (2020) studies found unidirectional causal relationship from foreign portfolio investments to stock returns.

Against these backdrops of existing literature, we can pinpoint the research gap as follows:

- a. No study can be found that uses the monthly data for the Indian economy.
- b. The choice of the study period (January 2002 to July 2020) is prompted by the availability of monthly data for the Indian economy.
- c. In the Indian context, no single study can be found that uses all the explanatory variables like index of industrial production (IIP), Trade Balance (TB), market

capitalization (MC), US Dollar exchange rate (DEXR), real effective exchange rate (REER), International Liquidity (IL) and Interest rate differential (IRD).

Keeping in view the above research gaps, the objectives of the study can be stated as follows.

- a. To empirically examine the short-run and long run determinants of foreign portfolio investment inflows to India using time series data.
- b. To investigate the short run and long run relationship of foreign portfolio investment with index of industrial production (IIP), real effective exchange rate (REER), Trade Balance (TB), International liquidity (IL), Interest rate differential (IRD), stock market capitalization (MC) and US dollar exchange rate.
- c. To offer policy implications to obtain more foreign portfolio investment inflows to India.

Accordingly, the hypothesis of the present research can be posited as:

Hypothesis:

Null Hypothesis (H_0)

- There is no noteworthy effect of index of industrial production (IIP), real effective exchange rate (REER),

stock market capitalization (MC), International liquidity (IL), Interest rate differential (IRD), US dollar exchange rate (DEXR) and Trade Balance (TB) on Foreign portfolio Investment (FPI) inflows in to India in the short-run and long-run.

The basis of this study is the hypothesis that there exists a linkage between foreign portfolio investments inflows with other key macroeconomic variables. The significance of this study lies in exploring the new channels that would bridge the gap of capital deficiency in India. This research work utilizes a more robust co-integration technique known as Auto Regressive Distributed Lag (ARDL) approach. The study is different from the others in the existing literature in terms of the variables considered. No other study can be found that uses such a comprehensive set of explanatory variables is a single empirical research Work. Furthermore, the choice of the explanatory variables is based on the conceptual understanding of what might be the macro variables that influence FPI inflows in India. The findings of this empirical work would be helpful and relevant to policy makers for enhancing economic growth and meet the capital gap through attracting more foreign portfolio investment inflows.

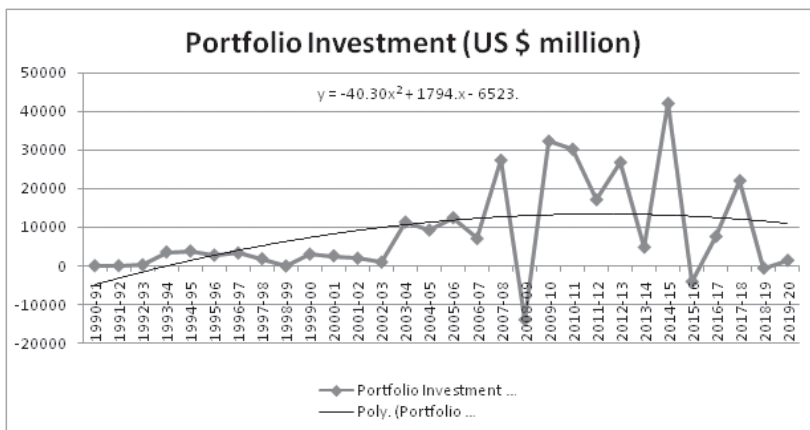
Section 3: Trends of foreign portfolio investment (FPI) in India

Foreign portfolio investment includes international investment in equity and debt securities issued by unrelated nonresident entities excluding any instruments classified as direct investment or reserve assets. Due to low foreign exchange reserves and unsustainable macroeconomic balance, Indian economy suffered from the balance of payments crisis in 1990-1991. The government responded with the introduction of liberalization, privatization and globalization (LPG) policy. With the introduction of LPG, Indian economy entered a new era and opened up its financial market to foreign institutional investors (FII) in 1992.

Since the inception of LPG reform, in every

financial period the trends in the foreign portfolio equity investment inflows to India is positive, except for the financial year 1998-1998, 2008-2009, 2015-2016, and 2018-2019. Causal empiricism suggests that the Asian tiger crisis in the year 1998-1999 and the global sub-prime crisis of 2008-2009 might be the cause of negative foreign portfolio equity investment inflows in India. Also in 2016, the Indian government implemented the demonetization policy which coupled with the fear of global economic slowdown and immanent interest rate hike by Federal Reserve resulted in negative magnitude of FPIs in India for the years 2015-2016 and 2018-2019. From the figure-1 we get a pictorial trends and fluctuating nature of foreign portfolio equity investment inflows in India.

Figure – 1 foreign portfolio investment inflows in India



Section 4: Data and Methodology

For the purpose of empirical investigation, the time series monthly data is collected from the period January 2002 to July 2020. Foreign Portfolio Investment (FPI) monthly data is collected from Central Depository Services India Ltd (CDSL) website and annual data from the RBI website. The data on the index of industrial production (IIP), Trade Balance (TB) and stock market capitalization (MC) is collected from the reserve bank of India (RBI) handbook statistics. US Dollar exchange rate (DEXR) data is taken from the website Bis.org and real effective exchange rate (REER) data is downloaded from Bruegel.org websites. International Liquidity (IL) and Interest rate differential (IRD) data has been collected from International financial statistics.

1. Real effective exchange rate: The strength of a currency relative to a basket of other currencies is measured with the help of an index that is known as the real effective exchange rate. Suppose a country has X trading partners and denoted by ‘Trade_i’ and ‘E_i’ as the trade and exchange rate with the country ‘i’ respectively. The exchange rate is calculated

$$E_{effective} = E_1 \frac{Trade_1}{Trade} + \dots + E_x \frac{Trade_x}{Trade}$$

Effective exchange rate is volatile in nature over a short period of time

2. Trade Balance (TB): In a globalized world every country trades according to the benefits and necessities of the countries. The trade balance is the difference between the export and imports of a country.

$$Trade\ balance = Imports - Exports$$

3. US dollar exchange rate (DEXR): The rate at which one national currency can be exchanged for another countries currency is known as the currency exchange rate. Similarly, the US Dollar exchange rate is the exchange rate at which rate US dollar is exchanged with the exchangeable currency of the respected countries.

4. Stock market capitalization (MC): The Bombay stock exchange (BSE) was established in 1875; BSE is the 7th largest stock exchange around the world in terms of its market capitalization And National stock exchange (NSE) was established in 1992; it’s the world’s 11th largest stock exchange in terms of its market capitalization. At a particular time period, the price of a share of company multiplied by its total number of shares is called the market capitalization of that company. If we add the market capitalization of all companies listed under BSE and NSE, the total amount India’s stock market capitalization.

5. International liquidity (IL): Global liquidity/International liquidity refers to the ease of financing in the global financial market. Global liquidity includes many indicators like credit, Gold reserve, IMF reserve position, US dollars reserve, SDRs, Official assets, Net foreign assets, Liabilities To Non-residents, Other Foreign Liabilities, etc. But in our study, we use total reserve excluding gold, US dollars as international liquidity and the data was collected from international financial statistics.

6. Interest rate differential (IRD): For pricing purposes in the foreign exchange markets, the interest rate differential is used. With the varying degree of economic development across the countries, interest rate differential sparked a new level of curiosity. The difference between two countries interest is the interest rate differential. But in our study, the difference between the lending rate in India and the USA is considered as the interest rate differential.

7. Index of Industrial Production: To measure the general level of industrial activity in the economy, the all-India Index of Industrial Production (IIP) provides a single representative figure. For constructing the IIP index we use the wholesale price Index for deflating the value-based index.

Methodology:

We specify the following equation to investigate the effect of US dollar exchange rate (DEXR), index of industrial production (IIP), Stock market capitalization (MC), International liquidity (IL), Interest rate differential (IRD), real effective exchange rate (REER) and Trade Balance (TB) on foreign portfolio investment (FPI).

$$FPI_t = \beta_0 + \beta_1 (DEXR_t) + \beta_2 (IIP_t) + \beta_3 (MC_t) + \beta_4 (IL_t) + \beta_5 (IRD_t) + \beta_6 (REER_t) + \beta_7 (TB_t) + u_t \quad 2.1$$

To examine the short-run and long-run relationships between focused variables, the co-integration method proposed by Engel and Granger (1987) based on residual and Johansen (1991, 1995) and Johansen-Juselius (1990) based on maximum likelihood estimation is applicable only if the all-time series variable is integrated of the same order. However, in order to identify the relation between any two or more variables in time series economic study, it may be the case that the variables are not integrated of same order. In that case, the autoregressive distributed lag (ARDL) approach to the co-integration method proposed by Pearson and Shin (1999) and Pearson, Shin and Smith (2001) may be used. The possibility of using non-linear ARDL (NARDL) is ruled out because of the fact that all the explanatory variables

used in the analysis, follows a linear trend over the chosen study period. To investigate the relationship among the variables with foreign portfolio investment we specify the following model.

$$\begin{aligned}
 FPI_t = & \beta_0 \sum_{i=1}^q \beta_{1i} \Delta(FPI_{t-i}) + \sum_{i=0}^q \beta_{2i} \Delta(DEXR_{t-i}) \\
 & + \sum_{i=0}^q \beta_{3i} \Delta(IIP_{t-i}) + \sum_{i=0}^q \beta_{4i} \Delta(MC_{t-i}) + \sum_{i=0}^q \beta_{5i} \Delta(IL_{t-i}) \\
 & + \sum_{i=0}^q \beta_{6i} \Delta(IRD_{t-i}) + \sum_{i=0}^q \beta_{7i} \Delta(REER_{t-i}) + \sum_{i=0}^q \beta_{8i} \Delta(TB_{t-i}) + \beta_9 (FPI_{t-1}) + \beta_{10} (DEXR_{t-1}) \\
 & + \beta_{11} (IIP_{t-1}) + \beta_{12} (MC_{t-1}) + \beta_{13} (IL_{t-1}) + \beta_{14} (IRD_{t-1}) + \beta_{15} (REER_{t-1}) + \beta_{16} (TB_{t-1}) + u_t
 \end{aligned} \tag{2.2}$$

Where Δ is the first difference operate, q is the optimum lag length $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ and β_8 represents short-run dynamics of the model and $\beta_9, \beta_{10}, \beta_{11}, \beta_{12}, \beta_{13}, \beta_{14}, \beta_{15}$ and β_{16} are long-run elasticises. Before running the ARDL model we check whether any variable is of the order I(2) because we know that if any variable is of the order I(2) then the above ARDL approach to co-integration is not applicable. For checking the integration of all variables, we use the Augmented Dickey Fuller test (ADF) and Phillip-Perron test (PP). In order to find the long run relationship as given equation (2.1), we conduct the bound test of equation (2.2). After testing co-integration, we use the Akaike information criterion (AIC) and Hunnan-Quinn information criterion

(HQ) to select the optimal lag length of the variable. The error correction model is represented by equation (2.3)

$$\begin{aligned}
 FPI_t = & \beta_0 \sum_{i=1}^{q_1} \beta_{1i} \Delta(FPI_{t-i}) + \sum_{i=0}^{q_2} \beta_{2i} \Delta(DEXR_{t-i}) \\
 & + \sum_{i=0}^{q_3} \beta_{3i} \Delta(IIP_{t-i}) + \sum_{i=0}^{q_4} \beta_{4i} \Delta(MC_{t-i}) + \sum_{i=0}^{q_5} \beta_{5i} \Delta(IL_{t-i}) \\
 & + \sum_{i=0}^{q_6} \beta_{6i} \Delta(IRD_{t-i}) + \sum_{i=0}^{q_7} \beta_{7i} \Delta(REER_{t-i}) + \sum_{i=0}^{q_8} \beta_{8i} \Delta(TB_{t-i}) + \lambda EC_{t-1} + e_t
 \end{aligned} \tag{2.3}$$

Where $q_1, q_2, q_3, q_4, q_5, q_6, q_7$ and q_8 represent optimal lag length, λ is the speed of adjustment parameter and EC represent the error correction term derived from long run relationship as given in equation (2.3).

Section 5: Results and Discussion

Statistical analysis or Descriptive statistics

Before going to time series econometric analysis, a detailed statistical analysis is carried out. Our complete data set consists of eighteen years of monthly observations from January 2002 to July 2020. The descriptive statistics are shown in table -1 and exhibits that the average of foreign portfolio investment (FPI) is 5319.368 with a standard deviation of 16169.11. The average dollar exchange rate (DEXR) is 54.21304 with a standard deviation of 10.46927, the average for index of industrial production (IIP) is 448.4210 with a standard deviation of 216.2398, the average for stock

Table-1 Statistical analysis of selected variables

	FPI	IL	DEXR	IIP	IRD	MC	TB	REER
Mean	5319.368	257056.7	54.21304	448.421	6.272937	6878439	-27599.7	106.4521
Median	4175.4	269968.6	48.95485	531.0536	6.75	123391.7	-11785.2	105.9891
Maximum	56261	497249.3	75.66493	835.7449	9.64	31665614	6006	131.147
Minimum	-118203	47173.23	39.24275	166.2	3	11031.56	-132567	87.07019
Std. Dev.	16169.11	106814.6	10.46927	216.2398	1.562453	11415244	34846.73	13.65829
Skewness	-1.94837	-0.28514	0.42965	0.193787	-0.14966	1.230583	-1.32252	0.181636
Kurtosis	17.97553	2.265134	1.707288	1.536296	2.372162	2.701722	3.654682	1.608028
Jarque-Bera	2224.899	8.039492	22.38827	21.30248	4.495026	57.10945	68.98957	19.2296
Prob	0.000000	0.017958	0.000014	0.000024	0.105662	0.000000	0.000000	0.000067

Source: Authors' own calculation E-view 9

market capitalization (MC) is 6878439 with standard deviation 11415244, the average the International liquidity (IL) is 257056.7 with a standard deviation 106814.6, the average for the Interest rate differential (IRD) is 6.272937 with a standard deviation 1.562453, the average for real effective exchange rate (REER) is 106.4521 with a standard deviation 13.65829 and the average trade balance (TB) is 27599.65 with a standard deviation 34846.73. The variables US dollar exchange rate (DEXR), Index of Industrial production (IIP), Market capitalization (MC) and real effective exchange rate (REER) are positively skewed on the other hand, foreign portfolio investment (FPI), trade balance (TB), the International liquidity (IL) and Interest rate differential (IRD) are negatively skewed.

The kurtosis statistic of the variables shows that only foreign portfolio investment (FPI) and trade balance (TB) are leptokurtic (long-tailed or higher peak) and all other variables are platykurtic (short tailed or lower peak). The Jarque-Bera test results show that only interest rate differential (IRD) is normally distributed while all other variables are not normally distributed.

Unit root test:

It is very necessary to make sure before applying the ARDL technique to co-integration that not a single time series variables under study here are of I(2) or higher order. Because in the presence of I(2) the calculated F-statistics does not remain varied or higher-order lag (Sezgin and Yildirm 2003, Ouattara 2004). As pre-

test criteria, before applying the ARDL approach to co-integration, Unit roots of the entire time series variables are tested. For the purpose, the order of integration of the variables under consideration of the present study, we employed “Augmented dickey-Fuller test (ADF 1979)” and “Phillips-Perron (PP 1988)” complementarities. Table-2 reports the results of the augmented dickey-Fuller test (ADF 1979)” and “Phillips-Perron (PP 1988) at 1%, 5% and 10% level of significance to check the stationary of the variables.

From the table-2 it can be easily deduced that not a single variable is of I(2) or higher order. The foreign portfolio investment (FPI) variable is I(0) and all other variables

is I(1). Since the present study is based on 223 observations and none of the variables is integrated of I(2) or higher-order, the most appropriate technique to analyze short-run and long-run relationships among the variables is the ARDL co integration technique developed by Pearson et al. (1996,2001).

Lag Order Selection Criteria:

To choose the optimum lag, we use the Akaike information criterion (AIC) and Hannan-Quinn information criterion (HQ). The results of VAR lag order selection criterion based on the Akaike information criterion (AIC) and Hannan-Quinn information criterion (HQ) we found that the optimum lag is two.

Table-2 Unit root test

Variables	Augmented Dickey-Fuller Test (At Level)		Augmented Dickey-Fuller Test (At First Difference)		Phillips-Perron test (At level)		Phillips-Perron test (At first difference)	
	Test Statistic	Prob	Test Statistic	Prob	Test Statistic	Prob	Test Statistic	Prob
DEXR	0.174718	0.9705	-3.601011*	0.0000	0.207637	0.9726	-14.25006*	0.0000
FPI	-10.42985*	00.0000	-6.39833	0.00000	-10.45432*	0.00000	-75.2711	0.0001
IIP	-0.242891	0.9295	-5.329841*	0.0000	-0.470291	0.8931	-26.92250*	0.0000
IL	0.137579	0.9679	-9.21122	0.0000	-0.166326	0.9393	-9.81399	0.0000
IRD	-1.64543	0.4577	-13.4462	0.0000	-1.997399	0.2879	-13.6038	0.0000
MC	0.374050	0.9815	-14.631	0.0000	0.518106	0.987	-14.6482	0.0000
REER	-0.904847	0.7855	-12.59965*	0.0000	-0.815668	0.8124	-12.49556*	0.00000
TB	-2.250594	0.1892	-6.235748*	0.0000	-2.34008	0.1604	-17.24601*	0.0000

Source: Authors’ own calculation E-view 9

Table-3 VAR Lag Order Selection Criteria

Lag	Log	LR	FPE	AIC	SC	HQ
0	-14481.3	NA	4.05e+47	132.3226	132.4464	132.3726
1	-12103.6	4560.037	2.70e+38	111.1926	112.3068*	111.6426
2	-11977.8	232.0123	1.54e+38*	110.6285*	112.7331	111.4785*
3	-11932.5	80.28608	1.83e+38	110.7991	113.8941	112.0491
4	-11877.6	93.29450*	2.01e+38	110.8820	114.9675	112.5320

Source: Authors' own calculation E-view 9

Bound test:

In order to check the co integration status among Dollar exchange rate (DEXR), foreign portfolio investment (FPI), Index of Industrial Production (IIP), stock market capitalization (MC), International liquidity (IL), Interest rate differential (IRD), Real Effective Exchange Rate (REER) and Trade balance (TB), the bounds test has been applied. The calculated F-statistic is 28.87943 and which is greater than the lower and upper bounds of critical values indicating that it is the null hypothesis of no co-integration relationship should be accepted. The results of the ARDL bounds testing approach to co-integration tests confirm the existence of a long-run relationship among the variables. Before proceeding with the autoregressive distributed lag (ARDL) bounds testing approach to co-integration, the appropriate lag order is selected based on the Akaike information criteria (AIC) and Hannan-

Quinn information criterion. Lag length help to select the best autoregressive distributed lag (ARDL) model to estimate in capturing the relationship. Table-4 reports the results of the bounds test to co-integration.

The results of the long-run relationship of the selected ARDL model (1, 1, 1, 1, 1, 1, 2) using AIC and HQ is presented below table-5. The table-5 reveals that Index of Industrial Production (IIP) has a significant positive relationship with foreign portfolio

Table-4 ARDL- co integration test results

Test Statistic	Value	K
F-statistic	28.87943	7
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.03	3.13
5%	2.32	3.5
2.5%	2.6	3.84
1%	2.96	4.26

Source: Authors' own calculation E-view 9

investment (FPI) while the stock market capitalization (MC) has a significant negative relationship. The coefficient (47.27751) of Index of Industrial Production (IIP) shows that a one percent increase in Index of Industrial Production (IIP) leads to almost 47% increase in FPI in the long run and the coefficient of stock market capitalization (MC) (-0.00053) shows that a one percent increase in stock market capitalization (MC) leads to less than 1% decrease in FPI in the long run. All other variables have no significant relationship in the long run at 1%, 5%, and 10 % level of significance. The results indicate that policymakers should devise and implement such policies for Index of Industrial Production (IIP) and stock market capitalization (MC) which

could increase the total foreign portfolio investment inflows in India.

Table-6 reports the results of error correction representation of the selected ARDL model. The results revealed that there is an existence of the short-run relationship of Foreign Portfolio investment with other variables. The coefficients of the variables show the short-run elasticity. The results represent that in the short run US dollar exchange rate (DEXR), Interest rate differential (IRD) and Trade Balance (TB) is a negative and significant factor with the largest coefficient and t-ratio of Foreign Portfolio Equity Investment. However, the variable DEXR, IIP, and TB affect the FPI equity inflows at 1% and 5% significance level. In the short -run Stock

Table-5 Long Run Coefficients of ARDL (1, 1, 1, 1, 1, 2, 1) Model Dependent Variable FPI

Long Run Coefficients				
Regressor	Coefficient	Std. Error	t-Statistic	Prob.
IL	-0.01555	0.027058	-0.5748	0.5661
DEXR	-379.386	264.1069	-1.43649	0.1524
IIP	47.27751	15.99569	2.955641	0.0035
IRD	473.3868	782.313	0.605112	0.5458
MC	-0.00053	0.000264	-2.00522	0.0463
TB	-0.02744	0.052984	-0.51783	0.6051
REER	-18.959	232.6928	-0.08148	0.9351
C	8711.063	22657.1	0.384474	0.701

Source: Authors' own calculation E-view 9

market capitalization (MC), International liquidity (IL), and Real Effective Exchange Rate (REER) is also the significant positive factor of Foreign Portfolio Investment inflows in India. On the other hand, index of industrial production (IIP) has no significant relationship with Foreign Portfolio Investment (FPI) inflows in the short-run. In the short run with one percent significance level the coefficients of error correction term (ECM) value (-0.76369) confirm the integrity of the long-run relationship as the error correction term (ECM) value reported is negative and statistically significant at 1% level. The coefficient of ECM revealed that once there is disequilibrium in the system, it can be adjusted back toward equilibrium

level in the long run at the average speed of 76%.

To test the stability of selected ARDL based on error correction model using Brown et.al (1975) cumulative sum of recursive residuals (CUSUM) testing technique. Plots have been shown in figure-2 the plots remain within critical bounds at 5% level of significance, from the plots figure we conclude that the model is stable.

Section 6: Conclusion:

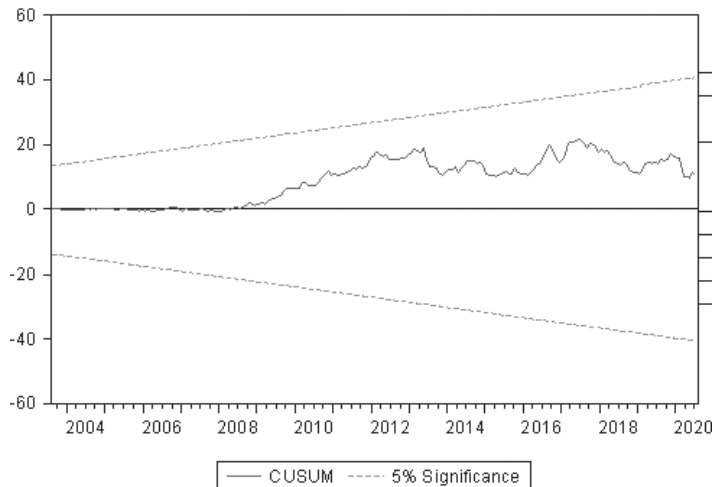
This paper analyzes the determinants of Foreign Portfolio Investment inflows to India for the period January 2002 to July 2020 where portfolio investment inflows to India have been increasing since 2002-

Table-6 Short Run Coefficients of ARDL (1, 1, 1, 1, 1, 2, 1) Model Dependent Variable FPI

Regressor	Coefficient	Std. Error	t-Statistic	Prob.
D(IL)	0.523499	0.159907	3.273764	0.0012
D(DEXR)	-3080.25	811.85	-3.79411	0.0002
D(IIP)	-35.0286	21.72491	-1.61237	0.1084
D(IRD)	-7943.67	2366.65	-3.3565	0.0009
D(MC)	0.0033	0.000666	4.955059	0.0000
D(TB)	0.093205	0.071406	1.305286	0.1933
D(TB(-1))	-0.17657	0.069631	-2.53576	0.012
D(REER)	2596.258	506.7079	5.123776	0.0000
CointEq(-1)	-0.76369	0.05167	-14.7802	0.0000
Cointeq = FPI - (-0.0156*IL -379.3860*DEXR + 47.2775*IIP + 473.3868 *IDR -0.0005*MC -0.0274*TB -18.9590*REER + 8711.0634)				

Source: Authors' own calculation E-view 9

Figure – 2
Plots of cumulative sum of recursive residuals (CUSUM)



2003 financial years and accelerated in 2006-2007 financial years. But due to Global financial crisis in 2008-2009, it slowed down. Again portfolio investment inflows accelerated in the years 2014-2015. The backdrops of fear of a global slowdown and immanent interest rate hike by Federal Reserve have spooked portfolio investors away from riskier assets.

This study revealed that in the long-run stock market capitalization (MC) have significant negative impacts on foreign portfolio investment inflows to India. The results is similar to Ekeocha, P. Chukwuemeka (2008) FPI flows in Nigeria

has also a long run negative relationship with market capitalization. But Index of Industrial production (IIP) has long-run positive relationship with FPI inflows to India. As foreign portfolio investment is volatile in its nature it is also known as ‘hot money’, our study finds that in the short-run foreign portfolio investment inflows have negative relationship with Trade Balance (TB), US dollar exchange rate (DEXR) and Interest rate differential (IRD), but have a significant positive relationship with real effective exchange rate (REER), International liquidity (IL) and stock market capitalization (MC).

Our findings help explain the puzzle of which factor has more influence in foreign portfolio investment inflows and how the policymaker can attract more foreign portfolio investment inflows to India. We show that there are many factors that attract foreign portfolio investment inflows to India and other discourages. Our findings suggest that in formulating portfolio investment policies, portfolio investors and the policy makers should pay close attention to the variables used in this study.

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Perception of Commerce Graduates of Kerala State about the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

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Abstract:

Corporate Social Responsibility is not a new idea at all. But, the companies Act 2013 and its latest amendments has given a new dimension to the vital concept of CSR of joint stock companies which are registered in India. Besides ,Government of India has amended CSR Rules to give a new impetus to the welfare projects of companies .Now, during Covid -19 Pandemic, we struggle with the pandemic and the economic crisis which is the new reality around us .At this critical juncture ,we have to understand the various dimensions of CSR and its practical applications and implications in our corporate and public life .Therefore ,the researchers want to analyse Perception of Commerce Graduates of Kerala State about the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

Key Word:

Amendments, Corporate Social Responsibility, Perception ,Commerce Graduates, Kerala State

Introduction

Every business, whatever may be its form of organization, stands for the society. It survives and grows using the social, human and ethical capital of the society and public at large. Therefore, from time immemorial, business houses have incorporated business responsibility within its plan and agenda. Companies Act 2013 has recognized and incorporated various provisions relating to Corporate Social Responsibility in it. Most important section is sec 135. Besides, various amendments has been made in that section since 2013. The Government of India has notified certain amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014 on 22 January 2021 through a MCA Notification.

Statement of the Problem

Even though Corporate Social Responsibility is a familiar concept, latest and updated knowledge about Corporate Social Responsibility among public especially among the commerce people is the need of the hour. Hence, the researchers want to understand the Perception of Commerce Graduates of Kerala State about the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

Objectives

1. To understand the Perception of Commerce Graduates of Kerala State about the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014
2. To understand about the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

Hypothesis

1. H₀: There is no significant difference between the age of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014
2. H₀: There is no significant difference between the gender of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014
3. H₀: There is no significant difference between the Educational Qualification of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014
4. H₀: There is no significant difference between the Employment Status of

commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

Review of Literature.

1. Samuel O. Idowu (2007)¹ made an analysis of CSR and the companies had now brings ethics in the social responsibility. For this he makes use of twenty companies. The companies disclose its CSR with a view of government request, public benefits and issue information to stakeholders.
2. Vaaland, Heide (2008)² conducted a case study on managing social responsibility in Oil Industry. Its objective was to handle the critical incidents of CSR and helps to enforce the CSR activities. The study came to a finding that CSR can be handled by managing unexpected events, reduction of gap between stakeholders, their expectation and performance of the company. It also concluded that CSR should be managed in such a way that the maintaining relationship with society by actor, resources and activities.
3. Truscott, Bartlett, Trwoniak (2009)³ conducted case study on Corporate Social Responsibility in Australia. Interview of key persons of industries in Australia, concept of CSR was explained in detail.

They understood that the significance of CSR has been increasing. They make an analysis of CSR in economic, legal and ethical areas of business. Businessman viewed CSR as an ideal for corporate reputation.

4. Hartman (2011)⁴ published an article on Corporate Social Responsibility in food industry. The role of CSR in companies having high brand had been discussed in this study. CSR is an inevitable part of these firms. But for SME's it is different picture. They were unable to fulfil the obligations towards society. The food companies discharge their duties in respect of their customers. Consumers had preference against those firms who were meeting their social responsibilities.
5. Bansal, Parida, Kumar (2012)⁵ published a paper on recent trends of CSR in India. For this they used annual reports of 30 companies of 11 sectors listed in Bombay Stock Exchange. This study covers Transport Equipment sector, Finance and metal mining sector, It & power, Capital goods, Telecom, Housing, FMCG, Oil & Gas and Cipla. This made a conclusion that the companies were not only working with profit motive but also being social friendly.
6. CS Nayan Pitroda (2021) has published

the extracts of MCA published FAQ for CSR u/s 135 of the companies Act. Through the article ,the author could highlight important points regarding CSR.

Sample size of the Study

This research paper is based on both data collected from primary sources and the secondary sources. In order to address the research problem, a primary survey was conducted in line with demographic variables of the commerce Graduates in different parts of Kerala with a total sample size of 62 and for this a structured questionnaire was developed covering a variety of inter related aspects, such as respondent's gender, age and Educational Qualification . Google forms are developed

and circulated to get the data. Commerce Graduates means persons who have passed B.com or BBA from any university of Kerala state or students of commerce who are pursuing B.com or BBA in any university of Kerala state.

Methodology of the Study

Data obtained through survey were analyzed using suitable statistical tools and testing of hypothesis (One-Way Analysis of Variance).SPSS Software is used for analyzing primary data .Secondary data is collected from the website of Ministry of Corporate Affairs.

Data Analysis.

Secondary data has been collected from the website of Ministry of Corporate Affairs.

Table 1

Important amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

Serial No	Rule	Amendments
1	Rule 2	New definition to “Corporate Social Responsibility “,”CSR Policy”, ”Net Profit” , “Ongoing Project” and “Administrative overheads”
2.	Rule 4	The entity as per the Rule 2(1) , which is the implementing agency, should be registered with the central Government through electronically. The relevant form for e-filing with the Registrar is CSR-1.Verification of CSR-1 is to be done (digitally) by a practicing CA or practicing CMA or practicing CS. While completing form CSR-1 on the portal, the company will get an unique CSR Registration Number. Besides ,Collaboration With international organization is permitted for implementing CSR activities
3	Rule 5	CSR Committee has to formulate an annual action plan in lines with the CSR Policy and it has to be recommended to the board for compliance
4	Rule 6	Omitted
5	Rule 7	<ul style="list-style-type: none"> i. Every company has to limit the Administrative overheads as 5 % of the total CSR Expenditure. ii. A company can set off the excess amount (when spends more than 2 %of net profits) as per the amended Rule 7(3) of the Companies (CSR Policy) Rules 2014.
6	Rule 8	The Scope of Rule 8 has been widened. Certain companies has to undertake impact assessment with the help of independent agencies and such report should be submitted for board’s approval.
7	Rule 9	Mandatory disclosure in the website is needed. Besides ,the unspent CSR amount has to be transferred by the entity to any fund as per schedule VII of the Companies Act 2013

(Source: [https://www.mca.gov.in/Ministry/pdf/CSR Amendment Rules_22012021.pdf](https://www.mca.gov.in/Ministry/pdf/CSR%20Amendment%20Rules_22012021.pdf))

Testing of Hypothesis

Table No. 2

ANOVA for Age and Perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

ANOVA

		Sum of Squares	Df	Mean Square	F *
Rule 2	Between Groups	3.982	1	3.982	14.605
	Within Groups	16.357	60	0.273	
	Total	20.339	61		
Rule 4	Between Groups	3.195	1	3.195	13.238
	Within Groups	14.482	60	0.241	
	Total	17.677	61		
Rule 5	Between groups	3.195	1	3.195	13.238
	Within Groups	14.482	60	0.241	
	Total	17.677	61		
Rule 6	Between Groups	16.357	1	3.982	14.605
	Within Groups	20.339	60	0.273	
	Total	20.339	61		
Rule 7	Between Groups	2.198	1	2.198	8.693
	Within Groups	15.173	60	0.253	
	Total	17.371	61		
Rule 8	Between Groups	2.198	1	2.198	8.693
	Within Groups	15.173	60	0.253	
	Total	17.371	61		
Rule 9	Between Groups	3.982	1	3.982	14.605
	Within Groups	16.357	60	0.273	
	Total	20.339	61		

(Source: Primary Data)

*level of significance is 0.05

Table 2 revealed that One way ANOVA was applied to find whether the mean scores vary accordingly to the age of Commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

The ‘p’ value is less than 0.05 in all the

above cases .Therefore, the result is significant and hence the null hypothesis is rejected in all the above cases. Therefore, it is inferred that there is significant difference between the age of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

Table No. 3

ANOVA for Gender and Perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

ANOVA

		Sum of Squares	Df	Mean Square	F *
Rule 2	Between Groups	2.452	1	2.452	9,260
	Within Groups	15.887	60	0.265	
	Total	18,339	61		
Rule 4	Between Groups	1.673	1	1.673	5.363
	Within Groups	18.714	60	0.312	
	Total	20.387	61		
Rule 5	Between groups	2.452	1	2.452	9.260
	Within Groups	15.887	60	0.265	
	Total	18.339	61		
Rule 6	Between groups	1,673	1	1,673	5.363
	Within Groups	18.714	60	0.312	
	Total	20.387	61		
Rule 7	Between groups	0.903	1	0.903	3.063
	Within Groups	17.693	60	0.295	
	Total	18.597	61		
Rule 8	Between groups	0.903	1	0.903	3.063
	Within Groups	17.693	60	0.295	
	Total	18.597	61		

Rule 9	Between groups	1.673	1	1.673	5.363
	Within Groups	18.714	60	0.312	
	Total	20.387	61		

(Source: Primary Data)

*level of significance is 0.05

Table 3 revealed that One way ANOVA was applied to find whether the mean scores vary accordingly to the gender of Commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014. The ‘p’ value is greater than 0.05 in the cases of Rule 7 and Rule 8. Therefore, the result is not significant and hence the null hypothesis is accepted in the above cases. Therefore, it is inferred that there is no significant difference between the gender of commerce Graduates and their

perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

The probability value is less than 0.05 in the cases of Rule 2, Rule 5, Rule 4, Rule 6 and Rule 9. Therefore, the result is significant and hence the null hypothesis is accepted in those cases. Therefore, it is inferred that there is no significant difference between the gender of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

Table No. 4

ANOVA for Educational Qualification and perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

ANOVA

		Sum of Squares	Df	Mean Square	F *
Rule 2	Between Groups	0.614	2	0.614	2.712
	Within Groups	13.595	59	0.2227	
	Total	14.210	61		
Rule 4	Between Groups	2.873	2	1.437	3.537
	Within Groups	23.966	59	0.406	
	Total	26.839	61		

Rule 5	Between groups	0.614	2	0.614	2.712
	Within Groups	13.595	59	0.2227	
	Total	14.210	61		
Rule 6	Between Groups	2.873	2	1.437	3.537
	Within Groups	23.966	59	0.406	
	Total	26.839	61		
Rule 7	Between Groups	0.614	2	1.437	2.712
	Within Groups	13.595	59	0.406	
	Total	14.210	61		
Rule 8	Between Groups	0.614	2	1.437	2.712
	Within Groups	13.595	59	0.406	
	Total	14.210	61		
Rule 9	Between Groups	2.873	2	1.437	3.537
	Within Groups	23.966	59	0.406	
	Total	26.839	61		

(Source: Primary Data)

*level of significance is 0.05

Table 4 revealed that One way ANOVA was applied to find whether the mean scores vary accordingly to the Educational Qualification of Commerce Graduates towards their perception about the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

The 'p' value is greater than 0.05 in the cases of Rule 2, Rule 5, Rule 7 and Rule 8. Therefore, the result is not significant and hence the null hypothesis is accepted in the above cases. Therefore, it is inferred that there is no significant difference between the Educational Qualification of commerce

Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

The probability value is less than 0.05 in the cases of Rule 4, Rule 6 and Rule 9. Therefore, the result is significant and hence the null hypothesis is rejected in the above cases. Therefore, it is inferred that there is significant difference between the Educational Qualification of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

Table No. 5

ANOVA for Employment Status and perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014

ANOVA

		Sum of Squares	Df	Mean Square	F *
Rule 2	Between Groups	0.015	1	0.015	0.029
	Within Groups	31.356	60	0.523	
	Total	31,371	61		
Rule 4	Between Groups	0.122	1	0.122	0.242
	Within Groups	30.265	60	0.504	
	Total	30.387	61		
Rule 5	Between groups	0.122	1	0.122	0.242
	Within Groups	30.265	60	0.504	
	Total	30.387	61		
Rule 6	Between Groups	0.015	1	0.015	0.029
	Within Groups	31.356	60	0.523	
	Total	31,371	61		
Rule 7	Between Groups	0.122	1	0.122	0.242
	Within Groups	30.265	60	0.504	
	Total	30.387	61		
Rule 8	Between Groups	0.122	1	0.122	0.242
	Within Groups	30.265	60	0.504	
	Total	30.387	61		
Rule 9	Between Groups	0.015	1	0.015	0.029
	Within Groups	31.356	60	0.523	
	Total	31,371	61		

(Source: Primary Data)

*level of significance is 0.05

Table 5 revealed that One way ANOVA was applied to find whether the mean scores vary accordingly to the Employment status of Commerce Graduates towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

The 'p' value is greater than 0.05 in all the above cases. Therefore, the result is not significant and hence the null hypothesis is accepted in the above cases. Therefore, it is inferred that there is no significant difference between the Employment Status of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

Findings

1. It is found that there is no significant difference between the gender of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.
2. It is found that there is significant difference between the age of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.
3. It is found that there is no significant difference between the Educational

Qualification of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

4. It is found that there is no significant difference between the Employment Status of commerce Graduates and their perception towards the latest amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

Conclusion

Besides the above mentioned amendments, certain other amendments are made by the Government of India through circulars and Companies (Amendment) Act 2020. Every minute details has to be understood by every stakeholder for a better implementation of CSR in the public domain and thereby increase the efficiency of our system.

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Performance Assessment through Sustainable Value Added (SVA): Case Study of an Indian Iron & Steel Conglomerate

Debrupa Chakraborty, Satabdee Banerjee

Abstract:

Sustainable Value Added (SVA) represents the value created or damage caused by an enterprise as a result of using economic, environmental and social resources as compared to a benchmark. It enables to evaluate how far an enterprise uses its resources for better or worse, as compared to a chosen benchmark. This paper makes an effort to calculate the SVA of an environmentally conscious resource intensive steel manufacturing company of India. Financial indicator (economic value added or EVA) and environmental performance indicators like carbon-dioxide (CO₂) emissions, water used, and energy used have been taken into consideration for SVA calculation of the company. The results helped towards identification of the best performance areas as well as the weak points of the studied corporation.

Key Word:

Sustainable Value Added (SVA), Economic Value Added (EVA), Steel Manufacturing Unit, Efficiency, Corporate Sustainability

1. Introduction

Traditionally, the performances of different industries were evaluated on the basis of what goods and services they were supplying to the economy i.e., it was a supply side oriented evaluation. However, with the changing responses and with the increasing awareness towards sustainable development, the philosophy of performance indicator has changed over time. This changed philosophy is an advocate of measuring corporate sustainability not only on the basis of economic results, but also taking non-financial factors into consideration (Siew, 2015). This change has given birth to a parallel approach laying emphasis on how much of the natural resources the industries are consuming to maintain the supply level. Thus, there has been a shift from production or more specifically, supply-oriented approach to a consumption-oriented one.

For measuring the natural resources consumed by the industries, the need for a new environmental performance indicator was felt for quite a long time. Thus, the efficient use of resources started to be considered as an environmental performance indicator; all more so, for two reasons. Primarily, the efficiency of natural resource use was viewed to be instrumental in reducing costs or liability.

Secondly, it was also considered as a means of increasing revenue for the business and to assess corporate contribution towards sustainability and Sustainable Development Goals (SDGs). SDGs, also known as the Global Goals, were adopted by all United Nations Member States in 2015 as a universal call to action, to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. There are 17 SDGs.

One of the best and common methods of measuring corporate sustainability is Triple Bottom Line (TBL) approach that incorporates economic, environmental and social dimensions (Hahn, et al., 2015, Siew, 2015). The objective of TBL is to meet the resource needs of current and future generations without hampering the environment. One school of authors suggested sustainable business models (SBMs) that encompassed the TBL and reported about multiple parties along with the environment and society at large (Bocken, Short, Rana, & Evans, 2014). They opined that that was essential in directing and implementing innovative business processes for sustainability by adopting circular economy (CE) strategies which focused on narrowing, slowing and closing the resource loop (Geissdoerfer, Savaget, Bocken, & Hultink, 2017), making them

the key drivers of competitive advantage (Bocken, Short, Rana, & Evans, 2014) and overall SD.

However, a number of methods for assessing corporate sustainability had been prescribed by different authors. One school of authors opined that companies contributed towards sustainability if the value created by them surpassed the damage caused by them externally. Another school of authors advocated eco- efficiency (Schaltegger & Burritt, 2000). In 2017, the International Business Council (IBC) of the World Economic Forum identified the metrics of SDGs as the roadmap for making it easier for companies to align their goals to serve the long term goals of the society. The metrics constituted of four pillars – Principles of Governance, Planet, People and Prosperity – which were aligned with the essential elements of the SDGs, directing the companies to adopt such course of action to shift the world onto a sustainable and resilient path (World Economic Forum, Deloitte, EY, KPMG and PwC, 2020). Banerjee & Chakraborty (2020) in their study made an attempt to calculate eco-efficiency of ITC Ltd., an environmentally-conscious Indian conglomerate, both in a business-as-usual scenario, as well as after considering the environment-friendly measures taken by

them, to find out how they are contributing towards the achievement of the SDGs. However due to the limitations associated with these methods a more monetary method of assessing corporate sustainability called Sustainable Value Added (SVA) has been discussed in this paper.

Originally proposed by Figge and Hahn in 2004, SVA enables to measure the contribution of an enterprise to sustainability (Figge & Hahn, 2004). SVA shows if an enterprise is more sustainable as compared to a chosen benchmark (Figge and Hahn, 2013). Thus, SVA expresses corporate environmental performance in monetary terms or by quantitative units depending on the data availability at the enterprise level as well as on the benchmark (Kuosmanen & Kuosmanen, 2009). It measures the value or damage created while using economic, environmental and social resources as compared to a given or relevant benchmark (Figge and Hahn 2012, 2013). SVA considers effectiveness and efficiency of all the three dimensions of sustainability (Figge and Hahn, 2004).

In this changing competitive global business paradigm, confronted with challenges like climate change, the business leaders have realized that if they do not embrace TBL approach, they will lose their competitive edge in the long run which will finally

affect the profitability and goodwill of their business. The present paper, therefore, is an attempt to identify the role and status of a resource-based industry, namely Iron & Steel, in creating or depleting sustainable value through their activities over the years. In this context, Tata Steel Limited, a pioneering, one of the oldest and in 2019, the biggest privately owned Indian multinational steel manufacturing company, renowned as the 11th biggest steel manufacturing firm around the world, has been studied for the years 2017-2018 and 2018-2019. We deliberately did not consider the financial performances of the years 2019-20 and 2020-21, as the global spread of COVID 19 pandemic created disruptions in industries across the globe making their financial performance non-comparable. This is paper is indicative and thus, similar methodology can be applied to assess corporate performance across industries and time zones.

2. Materials and Methods

2.1 Methods

The study has followed the method of calculating partial SVA or SVA of a single resource applied by Strakova (2015), encapsulated through the following equation:

$$SVA_{ir} = \left(\frac{y_i}{x_{ir}} - \frac{y_r^*}{x_r^*} \right) x_{ir} \quad (1)$$

where, SVA_{ir} = SVA of the resource r in firm i

y_i = Economic Value Added (EVA) by the firm i

x_{ir} = quantity used of the resource r in the firm i

$\frac{y_i}{x_{ir}}$ = Eco-Efficiency of the firm i in using resource r

$\frac{y_r^*}{x_r^*}$ = Benchmark Eco-Efficiency of the resource r

Hence, SVA of a specific resource can be explained as, the difference between the actual eco-efficiency of a specific resource r , and the benchmark eco-efficiency of the same resource, multiplied by the quantity of its use. ‘Eco-efficiency’, is economic-ecological efficiency, or a ratio between an economic performance indicator and an environmental performance indicator of an enterprise (Schaltegger & Burritt, 2000).

On the other hand, for calculating the overall SVA of a firm, equation (1) can be modified as follows:

$$SVA_i = \frac{1}{R} \sum_{r=1}^R \left(\frac{y_i}{x_{ir}} - \frac{y_r^*}{x_r^*} \right) x_{ir} \quad (2)$$

where, R = number of environmental resources and

r = specific environmental resource (Figge & Hahn, 2004, 2006, 2012, 2013, 2015).

In this case, the partial SVAs are summed up and thereafter, their simple average is computed to find out the overall SVA of the firm.

The economic performances of the firms have been measured by calculating their EVA extracting secondary data from Ace Equity, a financial research database of Accord Fintech, and from the website of National Stock Exchange (NSE) for the financial years 2017-18 and 2018-2019 as follows:

$$\text{EVA} = \text{Net Operating Profit after Tax (NOPAT)} - (\text{Weighted Average Cost of Capital (WACC)} \times \text{Capital employed}) \quad (3)$$

where, NOPAT = EBIT * (1 – tax rate)

EBIT = Earnings before interest and tax, or operating profit

$$\text{WACC} = \left(\frac{E}{V} \times K_e\right) + \left(\frac{D}{V} \times K_d\right) \quad (4)$$

E = Equity in the capital structure

$$K_e = \text{Cost of Equity} = (R_f + \beta (R_m - R_f)) \quad (5)$$

(Capital Asset Pricing Model)

R_f = Risk-free Rate of Return (364-day Treasury Bill Rate)

β = Systematic risk of a security or portfolio as compared to the market

R_m = Expected Market Return of the securities

D = Debt in the capital structure

$$K_d = \text{Cost of Debt} = \frac{\text{Interest}}{\text{Debt}} (1 - \text{tax rate})$$

$$V = E + D$$

Capital employed has been considered at beginning-of-the-period value (Kishore, 2009)

And the environmental performance indicators namely, energy used (in million GJ), water used (in million m³) and CO₂ emission (in million tCO₂e), have been calculated using secondary data from the respective company annual reports. The environmental performance measurement through eco-efficiency framework comprises of recognizing certain economic as well as ecological indicators and finding out the ratio between them.

$$\text{Eco-efficiency} = \frac{\text{Economic Value}}{\text{Environmental Influence}} \quad (5)$$

2.2 Materials

In this study, for calculating the benchmark SVA of Indian steel industry, firstly, the steel manufacturing companies were identified from the NIFTY Metal index. Out of the fifteen mining and metal stocks included there, only four were shortlisted on the basis of their primary business of steel manufacturing. The companies, with their share in sectoral distribution, are,

- a. Tata Steel Ltd. (17.80 per cent), the focal area of this study
- b. JSW Steel Ltd. (14.78 per cent)
- c. Hindalco Industries Ltd. (14.06 per cent), and
- d. Steel Authority of India Ltd. (2.27 per cent)

The causes of considering Tata Steel Limited as our case study are:

- a. Firstly, with an annual crude steel capacity of approximate 25.3 million tones, it is recognized all across the world and was awarded as World’s Most Ethical Company for the third time in 2015 under the metals category by the leading and famous Ethisphere Institute.
- b. Secondly, during 2018-2019 the plant at Jamshedpur became the benchmark for steel industries in India for CO₂ emission intensity at 2.29 tonnes CO₂ equivalent (tCO₂e) per tonne of crude steel (tcs) produced.

- c. And finally, the company was adjudged as the Steel Industry Leader Globally in Sustainability on Dow Jones Sustainability Index in 2018 with a top score of 100 percentile in environmental dimension because of its continued focus on sustainability.

The year 2018 has been considered as benchmark for comparing the respective values of each parameter for both 2018 and 2019.

3. Results and Discussion

In the first step of calculation, the Economic Value Added (EVA) of the selected four companies have been computed by the authors for the years 2018-19, in accordance to equation (3), as stated in the methodology section of the paper and on the basis of the data extracted from the Ace Equity database and the website of NSE. The details of the parameters used for EVA calculation is being appended hereunder in Table 1 below:

Table 1: Parameters and data applied in calculating the Economic Value Added (EVA)

	TATA		HINDALCO		JSW		SAIL	
	2019	2018	2019	2018	2019	2018	2019	2018
EBIT	19050.83	9448.87	3493.48	4129.36	15525	10666	6492.81	2063.81
PBT	16227.25	6638.25	1810.44	2228.82	11817	7075	3337.89	-758.94
PAT	10533.19	4169.55	1205.43	1436.49	8259	4625	2178.82	-481.71
Tax	5694.06	2468.7	605.01	792.33	3558	2450	1159.07	-277.23
Effective Tax rate	0.3509	0.3719	0.3342	0.355493	0.301092	0.34629	0.347246	0.365286
NOPAT	12365.99	5934.93	2326.034	2661.401	10850.55	6972.473	4238.206	1309.93

Capital Employed	91811.92	76464.46	69748	74482.31	64426	62692	81122.39	77404.71
R_f	0.0639	0.0649	0.0639	0.0649	0.0639	0.0649	0.0639	0.0649
β	1.3	1.57	1.43	1.71	1.26	1.56	1.49	2.17
R_m	0.12943	0.09058	0.12943	0.09058	0.12943	0.09058	0.12943	0.09058
k_e	0.149086	0.10522	0.157605	0.108816	0.146465	0.104964	0.161537	0.120629
Interest	2823.58	2810.62	1683.04	1900.54	3708	3591	3154.92	2822.75
D	29701.47	28125.8	68092.02	69748	42069	36519	45170.04	45408.72
kd	0.061707	0.062767	0.016457	0.017562	0.061602	0.064281	0.045592	0.039456
Equity Paid Up	1145.92	1145.92	222.37	222.87	240	241	4130.53	4130.53
Reserves and Surplus	69308.59	60368.7	48437.02	49211.86	34770	27564	34021.04	31583.14
E	70454.51	61514.62	48659.39	49434.73	35010	27805	38151.57	35713.67
V	100156	89640.42	116751.4	119182.7	77079	64324	83321.61	81122.39
$E/V*k_e$	0.104874	0.072206	0.065686	0.045135	0.066526	0.045372	0.073965	0.053106
$D/V*K_d$	0.018299	0.019694	0.009598	0.010278	0.033622	0.036495	0.024716	0.022086
WACC	0.123174	0.0919	0.075284	0.055412	0.100148	0.081867	0.098681	0.075192
EVA	1057.167	-1092.14	-2924.89	-1465.84	4398.421	1840.095	-3767.04	-4510.29

Source: Ace Equity, NSE website and authors' calculations

In calculating SVA, the EVA of a company is used as a significant independent variable forming part of the numerator of the explanatory equation. After calculating the respective EVAs, in the second step, the

economic and environmental parameters of Tata Steel Ltd. and the rest of the steel manufacturing companies of India included in NIFTY Metal Index is encapsulated, as exhibited in the Table 2 below:

Table 2: Economic and Environmental Parameters of Steel Manufacturing Companies

Parameters	Year	TATA	JSW	HINDALCO	SAIL
Economic Value Added (₹ in crores)	2018	-1092.1	-1465.8	1840.09	-4510.3
	2019	1057.17	-2924.9	4398.42	-3767
Energy used (million GJ)	2018	295.77	448.50	276.77	407.46
	2019	313.55	450.60	276.64	442.43
Water Used (million m ³)	2018	22.11	47.51	52.81	29.86
	2019	22.47	44.09	52.72	29.51
CO ₂ emission (million tCO ₂ e)	2018	28.70	42.15	27.72	38.45
	2019	30.95	45.84	27.77	41.78

Source: Annual Reports and authors' calculations

In the third step, the benchmark value of each of the parameters have been calculated on the basis of the information contained in

Table 2 above. It is the median value of the year 2018 for each of the parameters, which is then used to compute the benchmark eco-efficiency as shown in Table 3 below.

Table 3: SVA of a Single Resource Used by Tata Steel Ltd. (₹ in crores)

Parameters	Year	Eco-efficiency of TATA (₹ in crores/parameter)	Benchmark Eco- efficiency Value (₹ in crores/parameter)	Impact Added (₹ in crores/parameter)	Quantity of Resource Used	Impact Added × Value Spread (₹ in crores)
Energy used (million GJ)	2018	-4.32427	-3.64	-0.69	295.77	-203.13
	2019	-2.97834		0.66	313.55	206.67
Water Used (million m ³)	2018	-57.8467	-33.06	-24.79	22.11	-548.00
	2019	-41.5603		-8.50	22.47	-190.96
CO ₂ emission (million tCO ₂ e)	2018	-44.5641	-38.09	-6.47	28.70	-185.71
	2019	-30.1732		7.92	30.95	245.13

Source: Authors' calculations

The fourth stage is the comparison of the eco-efficiencies of Tata Steel Ltd. with the benchmark eco-efficiencies to find out the impact added against each parameter for each of the year.

Then, in stage five, following equation (1), the impact added is multiplied by the value spread, i.e. the quantity of the respective resources used, to find out the SVA of a single resource, as depicted in Table 3 above. The benchmark values represent the expected or the standard eco-efficiency ratios of each of the resources used during the period concerned. In Table 3, the benchmark eco-efficiencies are found to

be negative because in 2018, three of the four selected companies, including TATA Steel Ltd. had negative EVAs (Table 1). The Table also substantiated that during 2019, Tata Steel Ltd. had outperformed the benchmark for two of the three categories of resources considered and thereby has added sustainable value through their production processes.

The sixth step is measuring the overall SVA of Tata Steel Ltd. following equation (2). The study has applied simple average method to measure it. The SVA of each of the three resources have been added up and then divided by 3 to arrive at the SVA of Tata Steel Ltd. as portrayed in Table 4.

Table 4: Calculation of SVA of Tata Steel Ltd. (₹ in crores)

Parameters	2018	2019
Energy used (million GJ)	-203.13	206.67
Water Used (million m3)	-548	-190.96
CO2 emission (million tCO2e)	-185.71	245.13
Total	-936.84	260.84
Simple Average or SVA	-312.28	86.95

Source: Authors' calculations

Table 4 demonstrates that though Tata Steel Ltd. depleted sustainable value of ₹ 312.28 crores in 2018, it added sustainable value to the extent of ₹ 86.95 crores in 2019.

The related environmental information has

also been tabulated in the following Table 5. It corroborates that the production of crude steel and greenhouse gas (GHG) intensity of TATA Steel Ltd. has increased while specific water consumption has reduced and specific energy intensity has remain unchanged.

Table 5: Production, Consumption and Emission Details of TATA Steel Ltd.

Resource Use / Parameters *	2018	2019
Production of Crude Steel (in Mn tcs)	12.48	13.23
Specific Energy Consumption (in GCal/ tcs)	5.67	5.67
GHG Intensity (tCO ₂ e/ tcs)	2.30	3.34
Specific Water Consumption (m ³ / tcs)	3.68	3.50
Effluent Discharge Intensity (m ³ / tcs**)	1.60	1.21

Source: Annual Reports of Tata Steel Ltd.

* Data relates to Tata Steel, Jamshedpur Plant

**tcs – tonnes of crude steel

Considering both the Tables 4 and 5, it can be commented that the substantial increase of about ₹400 crores in the value of SVA in 2019 as compared to 2018 is primarily due to the improvement in the EVA of TATA Steel Ltd. in 2019 as against in 2018.

4. Limitations of the study

The study undertaken in this paper is not free from limitations. Primarily, the study could not take into consideration the impact of one of the three pillars of sustainability, i.e., the

social performance of the enterprises due to dearth of comprehensive secondary data. Inclusion of the social dimension would have helped towards projection of a more comprehensive sustainability assessment. Secondly, for measuring the overall SVA of Tata Steel Ltd. the study has applied only the simple average method. However, use of weighted averaged resources might have provided a more authentic and accurate picture of the overall SVA, making comparison of the results of simple and weighted resources viable. Lastly, the study includes environmental performance indicators namely, energy used, water used and CO₂ emissions. Inclusion of parameters like waste (both hazardous and non-hazardous) could have added more value to the present study which the authors hope to include in their future research work.

5. Conclusion

Corporate sustainability assessment is an all embracing process to identify the best performance and the weak points of an organization. SVA approach provides an effective method for assessment of corporate sustainability and hence has been adopted for the case study of steel manufacturing companies. Results revealed that Tata Steel Ltd. improved its economic and to some extent environmental performance and efficiently used their resources during the period under study. This helped the company to achieve the SDG 06 – Clean Water and Sanitation; 07 – Affordable and

Clean Energy; 12 – Responsible Production & Consumption; 13 – Climate Action and 15 – Life on Land. TATA's commitment towards their shareholders, in turn, is supposed to reap long run benefits by dint of creating shareholders' wealth.

Tata Steel Ltd. uses Life-Cycle Assessment (LCA) as a tool to assess environmental impacts at the various stages of its products' life-cycle. In 2018-19, some of the key products of Tata Steel Ltd. (Tata Pravesh Doors, Tata Structure and Tata Pipes) achieved the Green Pro certification by CII Green Business Centre. These are the first steel products in India to get the eco-label using the LCA study. The company leaders are also actively engaged with various industry bodies such as the World Steel Association, the Confederation of Indian Industry (CII), the Global Reporting Initiative, the International Integrated Reporting Council and the Task Force on Climate related Financial Disclosures, guiding Tata Steel Ltd. further on implementing sustainability practices.

However, Tata Steel Ltd. can take further initiatives in incorporating clean and renewable energy, adopting waste recovery technologies and maximizing scrap utilization in steel making. The company should assess the potential of renewable energy usage across all locations in India. The steel industry contributes to about 6 to 8 per cent of global emissions and is considered to be a 'hard-to-abate sector'

since low carbon steel-making technologies are yet to be commercialized. Nonetheless, the company has already initiated Carbon Capture Use (CCU) in its Jamshedpur Plant. Moreover, enhancement of investments in pollution control equipment can facilitate reducing dust emission intensity further. Tata Steel Ltd. can also reduce water consumption by increasing the rainwater harvesting potential or structures and taking steps to reduce the effluent discharge to zero level, and thereby present themselves as a global benchmark in all aspects of environmental performance in the years to come.

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Performance of Canara Bank and Syndicate Bank before the Merger: A CAMEL Model Analysis.

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Abstract:

Banks use mergers and acquisitions as one of the most common corporate restructuring strategies to diversify or develop their operations. Due to the arrival of new competitors and products with advanced technology, globalisation of the financial markets, changing customer behaviour, expanded services at a lower cost, and other factors, the Indian banking system has changed dramatically in recent years in terms of mergers and acquisitions. As a result the Indian banking system has been strengthened. Canara Bank and Syndicate Bank merged in 2019 to improve efficiency and centralise operations. The purpose of this descriptive and analytical study is to use the CAMEL model to analyse the financial performance of Canara Bank and Syndicate Bank prior to the merger period (2014-15 to 2018-19). Finally, it can be concluded that the Syndicate Bank is considered to be the best performer, while the Canara Bank is a poor performer, and it needs to improve its performance with respect to capital adequacy, assets quality, and liquidity. In other words, before the merger, there was a significant difference in Canara Bank and Syndicate Bank's performance.

Key Word:

Merger and Acquisitions, Performance, Banking, CAMEL Model

Introduction

Banking is one of the fastest growing sectors in India. The banking sector helps in boosting capital formation, inventiveness, and monetization, along with the facilitation of monetary policy. The banking sector has helped to bring about a revolutionary change in the financial sector in direction of economic growth. The banking sector plays a momentous role in the overall development of the economy in all countries. Mergers and acquisitions are expected to promote synergies, i.e., create more value than individual banks operating in competition. Mergers and acquisitions are stepped up as a means for entry into new markets, faster growth in market share, asset growth, and the attempt to become more competitive in the marketplace and survival in the long-run. In this backdrop, an attempt has been made in this paper to analyse the performance of Canara Bank and Syndicate Bank before the merger using CAMEL model.

Review of Literature

¹**Meenakshisundaram K S and Kannan A S (2020)** attempted to assess the performance of Bank of Baroda during 2008-09 and 2016-17. The research is based on secondary data. The variables for data analysis include ROA, Net-Interest Margin, Credit-Deposit Ratio, and ROE. The analysis discovered

that during the pre-merger period, there was a greater NPA and a lower ROA. Finally, it is concluded that, in order to strengthen the merged firm, Bank of Baroda must improve its ROA and reduce NPAs.

²**Anitha M (2019)** evaluated the performance of SBI using CAMEL Model from 2007-08 to 2017-18. Ratio analysis was used in this study. The study finds that the efficiency of recovering debt, as well as ROA, has shown negative trend, and that the performance of State Bank of India was better pre-merger than post-merger.

³**Ravi Agarwal (2019)** examined the financial performance of nationalized banks using CAMEL model from 2013-14 to 2017-18. The study noted that in overall performance rating Indian Bank secured first rank having the excellent performance followed by Andhra Bank. Union Bank of India was poor performing bank as per results.

⁴**Priyanka Bargal and Manish Phalke (2019)** examined the influence of the merger on customer awareness of bank services before and after the merger. The research is entirely based on original data gathered through surveys of customers and employees of selected merging banks. Finally, it concludes that there are mixed opinions about the merger's impact on customers and employees.

⁵**Sonia Singh and Subhankar Das (2018)** looked at the financial performance of a few Indian private and public sector banks after they merged. The researchers looked at the current ratio, activity ratio, asset turnover ratio, profitability, net profit margin, and return on capital employed. The study noted that the current ratio for the Bank of Baroda and Punjab National Bank did not improve, SBI's acquiring process improved, and the asset turnover ratio efficiency for the longer period was not the same as it was for the shorter period.

⁶**Dhartiben P Rami and Kamini Shah (2018)** examined the impact of merger on financial performance of selected Indian companies from 2010 to 2014 using various ratios such as net profit margin, return on net worth, return on capital employed, current ratios, quick ratios, earnings per share, and dividend per share. The study shows that mergers and acquisitions have no significant impact on the financial performance of acquirer companies.

⁷**Christine Ombeka and Ambrose Jagonga (2018)** evaluated the financial performance of Kenyan commercial banks following mergers and acquisitions, the study observes that operational synergy, differential efficiency, and risk diversification, have a substantial impact on the financial performance of Kenyan banks.

⁸**Pankaj Sinha and Sushanth Gupta (2018)** examined the pre and post-analysis of the Indian financial service sector for the effect of mergers and acquisitions in India. The study was based on secondary data which was gathered from different journals, websites, and annual reports etc. The study concludes that mergers and acquisitions had a positive impact on the liquidity position of the Indian financial services sector.

⁹**Nidhi and Tanwar (2017)** investigated the performance analysis and impact of mergers and acquisitions on the financial and operating performance of selected Indian banks. The study found that mergers and acquisitions have proved to be an effective instrument in achieving corporate diversity and growth in the Indian banking sector to some extent.

¹⁰**Bijoy Gupta and Parimalendu Benerjee (2017)** studied the influence of mergers and acquisitions on the financial performance of selected Indian enterprises in India. From 2006 to 2012, the study examines mergers and acquisitions in seven different businesses. Secondary data was gathered for the study, and financial parameters were used to determine profitability and liquidity. The study shows that the financial performance of acquiring companies does not improve after the merger.

Statement of the Problem

The financial system, especially in banks, has seen significant reforms, laws, and norms in the last few years. In terms of profitability, low operating expenses, and reduced levels of non-performing assets, public sector banks compete with private sector banks. As a result, public-sector banks saw mergers and acquisitions as the most effective way to restructure. Numerous research works have been conducted to examine the performance of banks in terms of profitability factors, awareness studies, wealth studies, and other financial indicators. Even yet, there remains a significant gap that has to be addressed by the researchers looking at the problem from many perspectives. A Camel Model Analysis is used to evaluate Canara Bank and Syndicate Bank's performance prior to their merger. It takes into account a five-year period prior to the merger (2014-15 to 2018-19).

Objectives of the Study

The objectives of the Paper are as follows:

1. To analyse and compare the performance of Canara Bank (CNB) and Syndicate Bank before the merger using the CAMEL Model.
2. To give recommendations and Suggestions for the financial improvement of Canara Bank (CNB).

Research methodology

CAMEL is a ratio-based model to analyse the performance of banks. The present research is both descriptive and analytical. For the objective of this study, Canara Bank and syndicated bank have been selected. The data for the sample banks was gathered from the banks' published annual reports over a five-year period (2014-15 to 2018-19). To evaluate bank performance, fifteen financial ratios were used. A five-year average has been calculated with the help of simple arithmetic mean and one-way ANOVA, which were used for analysing the data to arrive at a reliable conclusion.

Hypotheses

H₀: There is no significant difference in the performance of Canara Bank and Syndicate Bank before the merger using the camel model.

Discussion

CAMEL model is based on the following parameters: the major findings based on these parameters constitute the subject matter of this section.

1. Capital Adequacy

The quantity of money that banks should have on hand to withstand losses and protect their depositors / stakeholders is referred to as capital adequacy. It is critical for a bank

to preserve and defend its stakeholders’ trust needs no emphasis. The capital adequacy of a bank is a vital determinant of its financial stability. The ability of a bank to absorb unexpected losses is referred to as “capital adequacy.” It shows the banks’ overall financial situation as well as management’s ability to meet the increased capital need. Instead of the Basel-mandated 8 percent, the Reserve Bank of India advised desired

banks to maintain a Minimum Capital to Risk-Weighted Asset Ratio (CRAR) of 9 percent. For the analysis of capital adequacy of selected banks, Capital Adequacy Ratio, Government Securities to Total Investments Ratio, and Total Advances to Total Assets Ratio are used. The higher the selected ratios under the capital adequacy criteria indicate better performance of bank.

Table-1: Capital adequacy of sample banks from 2014-15 to 2018-19.

Banks	Capital Adequacy Ratio		Govt. Securities to total investments		Total Advances to Total Assets		Group Rank	
	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank
CNB	11.91	2	89.26	2	59.90	2	2.00	2
SB	12.04	1	89.78	1	65.98	1	1.00	1

Source: Annual Reports of Canara Bank and Syndicate Bank.

Table 1 reveals that the syndicate bank is ranked first with a CAR of 12.04%, and the Canara bank has a lower CAR of 11.91%. In the government securities to total investment ratio, the syndicate bank obtained the first rank with an average of 89.78 percent, followed by Canara Bank with an average of 89.26 percent. In the Total Advances to Total Assets ratio, the syndicate bank secured the first rank, with an average of 65.98%, and the Canara bank, with an average of 59.90%. In terms of composite group rank, syndicate bank

got the first rank with a group average of 1.00, while Canara bank obtained a group average of 2.00. Syndicate Bank was relatively better than Canara Bank in capital management in banks.

Assets Quality

Asset quality is a key criterion for determining a company’s financial strength. It shows what kinds of advances the bank has made in order to earn interest. The falling value of assets has a cascading impact, as losses are finally written off against capital,

exposing the institution’s earning capability. For the analysis of assets quality of selected banks, Gross NPAs to Net Advances, Net NPAs to Net Advances, and Net NPAs to

Total Assets, ratios are used in this study. The lower the selected ratios under the assets quality criteria indicate better assets quality in the bank.

Table-2: Assets quality of sample banks from 2014-15 to 2018-19.

Banks	Gross NPAs to Net Advances		Net NPAs to Net Advances		Net NPAs to Total Assets		Group Rank	
	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank
CNB	9.06	2	5.65	2	3.38	2	2.00	2
SB	8.61	1	4.80	1	3.15	1	1.00	1

Source: Annual Reports of Canara Bank and Syndicate Bank.

Table 2 shows that the ratio of gross NPAs to net advances reveals that the syndicate bank came in first with an average of 8.61%, while Canara bank at second with an average of 9.06%. The syndicate bank ranks best with the lower net NPAs to net advances ratio of 4.80 percent, while Canara bank ranks last with the higher average of 5.65 percent. In terms of net NPAs to total assets ratio, Syndicate Bank was first with a low average of 3.15% and Canara Bank was last with a high average of 3.38%. In composite group rank, Canara bank came in second with a group average of 2.00, while Syndicate bank came in first with a group average of 1.00. Canara Bank has a lower asset quality than Syndicate Bank.

2. Management efficiency

The ability of a bank’s top management to make the best decisions is measured by management efficiency. By evaluating improved management quality, management efficiency aids a bank’s ability for long-term growth. Management effectiveness establishes the organization’s vision and goals and ensures that they are met. For the analysis of management efficiency of selected banks, Total Advances to Total Deposits ratio, Business per Employee, Profits per Employee, ratios are used. The Higher the selected ratios under the Management Efficiency parameter indicate better management efficiency in the bank.

Table-3: Management efficiency of sample banks from 2014-15 to 2018-19.

Banks	Total Advances to Total Deposits		Business per Employee		Profits per Employee		Group Rank	
	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank
CNB	69.75	2	15.02	1	-0.008	1	1.33	1
SB	77.49	1	14.43	2	-0.034	2	1.67	2

Source: Annual Reports of Canara Bank and Syndicate Bank.

Table 3 shows that the Syndicate bank is at the top of the list with a better average of 77.49% and the Canara bank is at the bottom of the list with a lower average of 69.75% in the Total Advances to Total Deposits ratio. Canara Bank is in first position with a business per employee average of 15.02, while Syndicate Bank is in second place with a business per employee average of 14.43. The table shows that both banks have negative profit per employee values, i.e., -0.008 and -0.034. Due to its poor performance in business per employee and profit per employee ratios, Syndicate Bank obtained the higher composite group rank for managerial efficiency with an average of 1.75, whereas Canara Bank received the

lower composite group rank with an average of 1.25. In terms of management efficiency, Canara Bank outperformed Syndicate Bank.

3. Earning Quality

The criterion focuses how a bank generates profits. This also explains the long-term viability and increase in earnings. By expanding earning capacity, banks can boost their development and productivity. For the analysis of earning quality of selected banks: ROA, Interest Income to Total Income, and Non-interest Income to Total Income ratios are employed. The higher the selected ratios under Earnings Quality indicate better earnings in the bank.

Table-4: Earning quality of sample banks from 2014-15 to 2018-19.

Banks	Return on Assets		Interest Income to Total Income		Non- Income to Total Income		Group Rank	
	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank
CNB	-0.092	1	87.69	2	12.30	1	1.33	1
SB	-0.34	2	89.51	1	10.47	2	1.67	2

Source: Annual Reports of Canara Bank and Syndicate Bank.

Table 4 reveals that both banks have negative return on assets ratios of -0.092 and -0.34, respectively. Syndicate Bank came in first with an average of 89.51% in the interest income to total income ratio, while Canara Bank came in second with an average of 87.69%. Canara Bank came out on top with a non-interest income to total income ratio of 12.30 percent, while Syndicate Bank came in last with a ratio of 10.47 percent. In the composite group rank, due to its low performance in ROA and non-interest revenue to total income ratio, Syndicate Bank was ranked second with a group average of 1.67, whereas Canara Bank was ranked first with a group average of 1.33. Canara Bank outperformed Syndicate Bank in earnings quality.

Liquidity

The ability of a bank to meet both short-

and long-term obligations, such as loan commitments, is referred to as liquidity. Liquidity is a vital part of any business that deals with money, and it evaluates a bank's ability to meet its financial obligations. Cash and investments are the most liquid assets in a bank. If liquidity is too low, banks will be unable to satisfy their present financial obligations. On the other hand, if liquidity is excessively high, banks are not properly employing their cash. As a result, a correct liquidity balance is required so that banks may produce a high profit while still providing liquidity to depositors. For the analysis of selected banks, Total Credit to Deposits Ratio, Government Securities to Total Assets Ratio and Quick Ratios are used in this study. The higher the selected ratios indicate a better liquidity position in the bank.

Table-5: Liquidity of sample banks from 2014-15 to 2018-19.

Banks	Total Credit to Total Deposit Ratio		Government Securities to Total Assets		Quick Ratio		Group Rank	
	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank	Average (%)	Rank
CNB	70.11	2	21.81	1	26.04	2	1.67	2
SB	78.08	1	20.89	2	29.78	1	1.33	1

Source: Annual Reports of Canara Bank and Syndicate Bank.

Table 5 shows that the Syndicate bank came in first with an average total credit to deposit ratio of 78.08%, followed by the Canara bank with 70.11%. With an average government securities to total assets ratio of 21.81 percent, Canara Bank was placed first, while Syndicate Bank was ranked last with 20.89 percent. Syndicate Bank was the best in terms of quick ratio, with an average of 29.78%, while Canara Bank was the

poorest, with an average of 26.04%. Due to its poor performance in the credit to deposit ratio and quick ratio, Canara Bank obtained the highest rank with a group average of 1.67, while Syndicate Bank obtained the lowest rank with a group average of 1.33. The composite group rank demonstrates that the syndicate bank outperformed the Canara bank.

Composite ranking of Canara Bank and Syndicate Bank

Table-6: Overall Composite ranking

Name of the Banks	Capital Adequacy	Assets Quality	Management Efficiency	Earning Quality	Liquidity	Mean	Rank
CNB	2.00	2.00	1.33	1.33	1.67	1.666	2
SB	1.00	1.00	1.67	1.67	1.33	1.334	1

Table 6 clearly illustrates that Syndicate Bank outperformed Canara Bank on parameters such as capital adequacy, asset quality, and liquidity. Canara Bank outperformed Syndicate Bank in terms of management efficiency and earnings. According to the analysis, Syndicate Bank was ranked top with an overall composite ranking average of 1.334, while Canara Bank was ranked bottom with an overall composite ranking average of 1.666.

Findings of the Study

The major findings of the present study are presented below:

1. Syndicate Bank is the best performer

in terms of capital adequacy, asset quality, and liquidity, but it needs to improve its management efficiency and earnings quality.

2. Canara Bank is a weak performer and needs to improve its performance with respect to capital adequacy, asset quality and liquidity.

One-Way ANOVA Results (Based on Overall Composite Ranking)

To evaluate whether there is any significant difference between the mean values of the Canara Bank and Syndicate banks using CAMEL ratios, a One-Way ANOVA test is employed on the data shown in Table 6.

Table-7: ANOVA Results

Sources of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-Value	Significance
Between Groups	0.276	1	0.276	2.455	0.156
Within Groups	0.898	8	0.112		
Total	1.173	9			

Source: Computed through SPSS at 5% level of Significance.

According to the results, the p value of 0.156 is greater than the level of significance of 0.05. Therefore, the null hypothesis is rejected. Hence, it is clear that the Canara Bank and Syndicate Banks' performances under the CAMEL Model differ significantly.

Conclusion

The current study has been conducted to examine the performance of Canara Bank and Syndicate banks before the merger using the CAMEL model during the study period from 2014-15 to 2018-19. The study found that Syndicate Bank ranked first in terms of capital adequacy, asset quality, and liquidity, while Canara Bank was in a solid position in terms of managerial efficiency and earnings. The study reveals that in the overall performance rating, Syndicate Bank secured the first rank, followed by Canara Bank, which stood at the second rank, respectively. The analysis of the data shows that the performance of Canara Bank and Syndicate Bank differs significantly.

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Appendices

Table-1: Appendices of Capital Adequacy Ratio

Sl. No.	Bank	2014-15	2015-16	2016-17	2017-18	2018-19	Mean	Rank
Capital Adequacy Ratio(CAR)								
01	Canara Bank (CNB)	10.56	11.00	13.00	13.00	12.00	11.91	2
02	Syndicate Bank (SB)	10.54	11.16	12.03	12.24	14.23	12.04	1
Total Advances to Total assets								
01	Canara Bank (CNB)	60.14	58.30	58.20	61.56	61.29	59.90	2
02	Syndicate Bank (SB)	66.87	65.38	66.76	65.03	65.87	65.98	1
Govt Securities to Total Investments								
01	Canara Bank (CNB)	88.37	89.22	90.45	88.82	89.46	89.26	2
02	Syndicate Bank (SB)	89.72	87.47	89.58	90.88	91.27	89.78	1

Source: *capitalline.com, **moneycontrol.com, ***money.rediff.com

Table-2: Appendices of Assets Quality

Sl. No.	Bank	2014-15	2015-16	2016-17	2017-18	2018-19	Mean	Rank
Gross NPAs to Net Advances								
01	Canara Bank (CNB)	3.95	9.74	10.00	12.43	9.17	9.06	2
02	Syndicate Bank (SB)	3.17	6.86	8.81	12.22	12.03	8.61	1
Net NPAs to Net Advances								
01	Canara Bank (CNB)	2.65	6.42	6.33	7.48	5.37	5.65	2
02	Syndicate Bank (SB)	1.90	4.48	5.21	6.28	6.15	4.80	1
Net NPAs to Total Assets								
01	Canara Bank (CNB)	1.59	3.74	3.68	4.60	3.29	3.38	2
02	Syndicate Bank (SB)	1.26	2.92	3.48	4.08	4.05	3.15	1

Source: *capitalline.com, **moneycontrol.com, ***money.rediff.com

Table-3: Appendices of Management Efficiency

Sl. No.	Bank	2014-15	2015-16	2016-17	2017-18	2018-19	Mean	Rank
Total Advances to Total Deposits								
01	Canara Bank (CNB)	67.92	67.68	69.05	72.74	71.40	69.75	2
02	Syndicate Bank (SB)	77.78	76.93	76.63	77.23	78.89	77.49	1
Business Per Employee (Rs.Cr)								
01	Canara Bank (CNB)	14.35	14.45	14.43	14.81	17.07	15.02	1
02	Syndicate Bank (SB)	15.39	14.61	13.51	14.39	14.27	14.43	2
Profits Per Employee (Rs.Cr)								
01	Canara Bank (CNB)	0.05	-0.05	0.02	-0.07	0.01	-0.008	1
02	Syndicate Bank (SB)	0.06	-0.06	0.01	-0.10	-0.08	-0.034	2

Source: *capitalline.com, **moneycontrol.com, ***money.rediff.com

Table-4: Appendices of Earning Quality

Sl. No.	Bank	2014-15	2015-16	2016-17	2017-18	2018-19	Mean	Rank
Return on Assets								
01	Canara Bank (CNB)	0.55	-0.52	0.20	-0.75	0.06	-0.092	1
02	Syndicate Bank (SB)	0.58	-0.56	0.12	-1.05	-0.87	-0.34	2
Interest Income to Total Income								
01	Canara Bank (CNB)	90.58	90.03	84.56	85.60	87.68	87.69	2
02	Syndicate Bank (SB)	91.10	90.24	86.93	88.58	90.71	89.51	1
Non-Interest Income to Total Income								
01	Canara Bank (CNB)	9.42	9.97	15.43	14.40	12.32	12.30	1
02	Syndicate Bank (SB)	8.89	9.75	13.06	11.41	9.28	10.47	2

Source: *capitalline.com, **moneycontrol.com, ***money.rediff.com

Table-5: Appendices of Liquidity

Sl. No.	Bank	2014-15	2015-16	2016-17	2017-18	2018-19	Mean	Rank
Total Credit to Total Deposit Ratio								
01	Canara Bank (CNB)	70.55	68.66	68.38	70.95	72.03	70.11	2
02	Syndicate Bank (SB)	80.52	78.14	76.78	76.94	78.05	78.08	1
Govt Securities to Total Assets								
01	Canara Bank (CNB)	22.88	22.80	23.13	20.64	19.61	21.81	1
02	Syndicate Bank (SB)	20.52	19.49	19.60	22.54	22.30	20.89	2
Quick Ratio								
01	Canara Bank (CNB)	25.44	27.62	25.72	24.67	26.78	26.04	2
02	Syndicate Bank (SB)	26.92	28.89	31.96	34.81	26.31	29.78	1

Source: *capitalline.com, **moneycontrol.com, ***money.rediff.com

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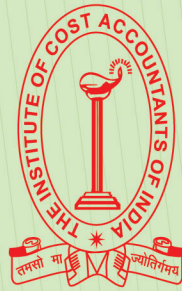
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