ISSN 2395-0293

KICMA Reach

Peer Reviewed Journal of Commerce & Management

Vol. 9 • No. 1 • January-June 2023

APPROVED BY UNIVERSITY OF KERALA

KICMA-B. School
Kerala Institute of Co-operative Management (KICMA)
Neyyardam, Thiruvananthapuram, Kerala

KICMA Reach

Peer Reviewed Journal of Commerce & Management

Vol. 9 • No. 1 • January-June 2023

KICMA-B. School
Kerala Institute of Co-operative Management (KICMA)
Neyyardam, Thiruvananthapuram, Kerala
Website: www.kicma.ac.in

KICMA Reach is a bi-annual Publication.

The views expressed by the contributors are their own and the Institute does not accept any responsibility.

SUBSCRIPTION RATES		India	Abroad
Annual	Individuals	₹ 300	$ 50
	Institutions	₹ 500	& 100
For Five Years	Individuals	₹ 1250	
	Institutions	₹ 2000	
Single copy	Individuals	₹ 200	
	Institutions	₹ 300	

Bank Draft should be drawn in favour of
The Managing Editor, KICMA-Reach
Payable at Thiruvananthapuram
Neyyardam, Thiruvananthapuram-72

The opinion expressed in the articles published in KICMA-Reach do not necessarily represent the views of Editor-in-Chief

CONTENTS

EDITOR’S NOTE

In today's rapidly evolving business landscape, keeping pace with the latest technology, knowledge, trends, and research is essential for professionals and organizations striving to achieve exceptional growth and success. KICMA's Reach Management Journal is a remarkable resource that brings fresh ideas, insightful perspectives, and practical solutions to the forefront. Artificial Intelligence (AI) can provide significant support in addressing various management challenges. This editorial refers some of the key challenges that AI can help with are as follows:

Data analysis and decision-making: AI can handle vast amounts of data and analyze it quickly and accurately. It can provide insights, trends, and predictive analytics that assist managers in making informed decisions. Automation and efficiency: AI has the potential to automate routine and repetitive tasks, allowing managers to focus on more strategic activities. This can lead to increased productivity and efficiency across the organization.

Risk management: AI can help identify potential risks by continuously monitoring data and detecting anomalies or patterns that may indicate potential issues. It can also assist in predicting and mitigating risks in real-time. Customer relationship management: AI-powered chatbots and virtual assistants can provide personalized and efficient customer service, responding to inquiries, resolving problems, and even recommending products or services.

Talent management: AI can streamline recruitment processes by screening resumes, conducting initial interviews, and identifying suitable candidates. It can also provide data-driven insights to improve employee performance and engagement. Supply chain optimization: AI can analyze and optimize supply chain data, improving inventory management, demand forecasting, and logistics efficiency.

Cybersecurity: AI can enhance cybersecurity by identifying and responding to potential threats in real-time. It can detect anomalies and patterns that may indicate a security breach and take proactive measures to prevent it.

However, it is important to note that while AI can be extremely useful, it is not a complete solution and may have limitations. It requires the right data infrastructure, proper implementation, and human oversight for optimal results. In this KICMA Reach edition we have included seven articles from Human resource, Marketing and Financial Management areas.

Dr. S. Rakesh Kumar
Director i/c

KICMA - REACH • ISSN 2395-0293 | VOL. 9 • NO. 1
Peer Reviewed Journal of Commerce & Management | JAN-JUN 2023

A Study on the Relationship between Green Energy Initiatives and Quality of Life of Employees of Selected Business Schools in Kerala

Dr. Manju K.G.

Abstract

The present study attempted to analyse the extent of satisfaction of business school employees on the green energy initiatives in their campus and the extent of quality of life of these employees in relation to the green initiatives. The relationship between green energy initiatives and quality of life of employees is also quantitatively analysed. Using a sample of 450 employees from various AICTE approved business schools from Kerala, the investigator conducted a survey and collected data on the green energy initiatives and quality of life of employees in these business schools. The tools used were demographic profile of the respondents, Rating Scale on Green Energy Initiatives and Influence of Green Initiatives on Quality of Life Scale. The relationship analysis proved that there is significant positive relationship between green energy initiatives in business schools and quality of life of employees of these business schools. Several recommendations are provided in the study to extract maximum benefit from the green energy initiatives in business schools and enhance the quality of life of the stakeholders in these business schools.

Keywords: *Green Energy Initiatives, Quality of Life, Business Schools of Kerala, Pearson's product moment correlation*

Significance of the Problem

Environmental conservation and associated topics that have an impact on Earth are becoming more and more relevant today. Worldwide, there is a demand for a deep involvement in favour of sustainable development. Pursuing sustainable development objectives requires day-by-day commitment from all individuals. The current rapid growth in the economy and the patterns of consumption and behaviour all over the world are the main causes of environmental deterioration. Environmental issues bring about thoughtful questions on the roles of business organisations in society. Irrespective of whether they are contributing to a better environment or deteriorating it, organisations have to accept environmental or green issues through impact research and measurement.

Educational Institutions across the world have realised that they are in a unique position to address the issue of environmental degradation. Faculties and students at several colleges have undertaken efforts to

Assistant Professor, GKM Co-operative College for Management and Technology

make their campus more sustainable. An empirical research conducted in Italy (Kuhtz, 2007) concludes that a continuing educational process in addition to the efforts of the school system will make people aware of sustainable development needs and improve their willingness to actively contribute in this endeavour. It is envisioned that future managers pursuing management courses can be effective change agents pursuing sustainable corporate strategies.

Considering the destructive nature of greenhouse gas emission and its impact on global warming, several countries have already introduced various measures to mitigate the impact of global warming on the lives and livelihoods of its people. The Government of India has also introduced several measures in its fight against greenhouse gas emission. The incentives and subsidies provided by the government in substituting fossil fuels with green energy technologies has made huge strides in the deployment of alternate energy sources in the generation of electricity. It is envisaged that by 2030, 50% of our energy requirements will be met by renewable energy sources such as solar, wind and other green energy sources.

Realising the importance of green initiatives in reducing the adverse effects of climate change, the AICTE has introduced a national scheme in 2017 for its affiliated institutions in implementing green campus initiatives. By recognising that sustainable living can be taught through higher education institutions, the AICTE stipulates all its affiliated institutions to include its environmental policy in their institutional policies and strategies. Moreover, the AICTE has also instituted a Best Green Campus Award for encouraging healthy competition among its affiliated institutions. It is stated in AICTE policy that the green campus activities will help building a society with a conservation attitude and live in harmony with nature (https://www.aicte-india.org/sites/default/files/Enviroment_Policy.pdf).

The AICTE Environment Policy has given the much needed impetus to the green initiatives by business schools of Kerala. Majority of the business schools have started implementing waste management, energy management, travel management and ICT practices in their campus at varying degrees. Among the various type of green initiatives, energy management is vital in the reduction of greenhouse gas emission. Replacing conventional energy sources with renewable energy sources such as solar energy, implementation of eco friend classrooms to reduce electricity consumption and use of LED bulbs are some of the green energy initiatives that can be practised to mitigate the effect of climate change. The present study is an attempt to analyse the effect of green energy initiatives by business schools in Kerala on the quality of life of stakeholders. Some of the studies related to the area are given below.

Ajayan, Periyasamy, and Mohankumar (2020) are of the view that it is important to develop an energy monitoring system for saving energy in vehicles, buildings, communication networks and industries and factories. The study concludes that energy generation and energy savings are both equally important and steps must be taken for the same. Arcadis (2019) remarked that green infrastructure can reduce the energy consumption. A study by Mohammadalizadehkord and Weaver (2018) concluded that environmental protection is the responsibility of all the university stakeholders and sustainable energy consumption is a major prerequisite in achieving this. Mohd. Wira and Hooman (2017) found that the green building is still at its infancy stage and serious attention is needed in the development of green building and energy efficiency in developed countries. The review of related studies revealed that there are no studies on the effect of green energy initiatives by business schools in Kerala on the quality of life of stakeholders. Hence the investigator selected the present study.

Method

Survey method was adopted for the study. The researcher has identified the faculties and administrative staff of the respective Business Schools as sample units. Using proportionate sampling, the researcher selected 450 respondents (290 faculties and 160 administrative staff) from various AICTE approved business schools in Kerala. The tools used were demographic profile of the respondents, Rating Scale on Green Energy Initiatives and Influence of Green Initiatives on Quality of Life Scale. The statistical analysis of the data was done using percentage analysis and Pearson Product Moment Correlation.

Objectives

1. To assess the extent of green energy initiatives in Business Schools of Kerala as perceived by the faculty and administrative staff.
2. To assess the extent of quality of life in relation to green initiatives in Business Schools of Kerala as perceived by the faculty and administrative staff.
3. To find out the relationship between green energy initiatives in business schools of Kerala and quality of life of employees in relation to green initiatives.

Hypothesis

There is no significant relationship between green energy initiatives in business schools and quality of life of employees in business schools.

Analysis of Data

Extent of Satisfaction of Employees on Energy Management Practices in their Business Schools

In order to assess the extent of satisfaction of academic and administrative employees on the energy management practices in their business schools, the total scores obtained by each respondent on the energy management practices were calculated. The respondents were categorised into three groups based on the total score as employees with high satisfaction, employees with moderate satisfaction and employees with low satisfaction on energy management practices. The details of the categorisation are given in Table 1.

Table 1
Extent of Satisfaction of Employees on Energy Management Practices in their Business Schools

Extent of Satisfaction	No.	%
High satisfaction	101	22.44
Moderate satisfaction	271	60.22
Low satisfaction	78	17.33
Total	450	100

Mean = 18.35 Standard Deviation = 4.95

Table 1 shows that 22.44% of the employees in business schools have high level of satisfaction, 60.22% of the employees have moderate level of satisfaction and 17.33% of the employees have low level of satisfaction on the energy management practices in their business schools. It means that majority of the employees have only moderate level of satisfaction on the energy management practices in their business schools.

Extent of Satisfaction of Employees on Quality of Life in relation to Green Initiatives in their Business Schools

In order to assess the extent of satisfaction of employees on the quality of life in relation to the green initiatives adopted in the campus, the total scores obtained by each respondent obtained through the quality of life scale were calculated. The respondents were categorised into three groups based on the total score as employees with high quality of life, employees with moderate quality of life and employees with low quality of life. The details of the categorisation are given in Table 2.

Table 2
Extent of Quality of Life in relation to Green Initiatives in the Campus

Extent of Quality of Life	No.	%
High Quality of Life	56	12.44
Moderate Quality of Life	329	73.11
Low Quality of Life	65	14.44
Total	450	100

Mean = 103.59 Standard Deviation = 21.01

Table 2 shows that 12.44% of the employees in business schools have high level of quality of life, 73.11% of the employees have moderate level of quality of life and 14.44% of the employees have low level of quality of life in relation to the green initiatives adopted in the campus. It means that majority of the employees have only moderate level of quality of life in relation to the green initiatives adopted in the campus.

Relationship between Energy Management Practices in Business Schools of Kerala and Quality of Life of Employees

The relationship between energy management practices in business schools of Kerala and quality of life of employees was found out for the total sample of employees and for employees classified on the basis of select demographic variables. The results of Pearson's product moment correlation analysis are presented in Table 3.

Table 3
Relationship between Energy Management and Quality of Life

Sl.No	Groups	Category	N	r	SEr	CI at 0.01 level	Significance Level
1		Total Sample	450	0.601	0.030	0.679 to 0.523	0.000**
2	Gender	Female	244	0.620	0.039	0.722 to 0.518	0.000**
		Male	206	0.580	0.046	0.699 to 0.461	0.000**
5	Marital Status	Married	260	0.606	0.039	0.707 to 0.505	0.000**
		Unmarried	165	0.582	0.051	0.715 to 0.449	0.000**
		Others	25	0.759	0.085	0.978 to 0.540	0.000**
6	Designation	Asst. Professor	179	0.665	0.042	0.773 to 0.557	0.000**
		Associate Professor	75	0.418	0.095	0.664 to 0.172	0.008**
		Professor	36	0.421	0.137	0.775 to 0.067	0.010**
		Administration	160	0.622	0.048	0.747 to 0.497	0.000**

7	Educational Qualification	MBA	208	0.588	0.045	0.705 to 0.471	0.000**
		MPhil	36	0.566	0.113	0.858 to 0.274	0.000**
		PhD	65	0.585	0.082	0.795 to 0.375	0.000**
		Other	141	0.645	0.049	0.772 to 0.518	0.000**
8	Experience	Up to 5 Years	263	0.582	0.041	0.687 to 0.477	0.000**
		6-10 Years	115	0.652	0.054	0.790 to 0.514	0.000**
		Above 10 Years	72	0.568	0.080	0.774 to 0.362	0.000**
9	Income	Below Rs. 15,000/-	168	0.574	0.052	0.707 to 0.441	0.000**
		Rs.15,000-35,000/-	165	0.651	0.045	0.767 to 0.535	0.000**
		Rs.35,000-50,000/-	99	0.534	0.072	0.719 to 0.349	0.000**
		Above Rs. 50,000/-	18	0.722	0.113	10.013 to 0.431	0.001**

**Significant at 0.01 level CI-Confidence Interval

Table 3 reveals that there is significant positive relationship between energy management practices in business schools and quality of life of employees as all the obtained r-values are positive and significant at 0.01 level. This shows that better energy management practices in business schools have resulted in enhanced quality of life of employees. The obtained r-values ranged from 0.418 to 0.759. This shows that the relationship ranged from moderate to high.

Thus, the hypothesis "There is no significant relationship between green energy initiatives in business schools and quality of life of employees in business schools" is not accepted.

Conclusion

The study found that majority of the employees have only moderate level of satisfaction on the energy management practices in their business schools. It was also found that majority of the employees have only moderate level of quality of life in relation to the green initiatives adopted in the campus. The relationship analysis revealed that there is significant positive correlation between energy management practices and quality of life of employees in business schools in relation to the green initiatives in business schools.

Suggestions

Some of the suggestions to accelerate the green energy initiatives in business schools are given below.

Business schools should embrace solar energy to the maximum extent possible as the technology has matured and can work for several years without any technical problems. The encouragement by state and central governments in the form of subsidy is an added attraction and eventually it will reduce energy cost substantially in addition to providing green energy. The use of sub-meters will enable the business schools to reduce wastage of energy. Sensor-based lighting and other systems can also be used to reduce energy consumption in campus substantially.

Steps could be taken by business schools to improve green energy initiatives in their business schools with the active participation of the employees. Their suggestions on shortfall in every area of green energy initiative is to be invited which should be incorporated in enhancing the overall green initiatives in the campus. All stakeholders should work together to make their institutions a net zero campus.

The students in the business schools are future managers of the industry. Since the green practices in industry is a fast gaining concept worldwide, students should be taught to implement green energy initiatives in industry without affecting productivity. This is one of the essential steps in equipping our future managers to tackle the environmental issues by implementing best green energy practices in industry.

All these initiatives will result in better quality of life of the stakeholders which in turn will enhance productivity. Thus, green energy initiatives in business schools will invigorate all stakeholders and will contribute significantly in the prosperity of the nation. Moreover, these green initiatives will result in significant reduction of greenhouse gas emission and will make the earth more inhabitable which will act as a boon to our future generations.

References

Ajayan, J., & Periasamy, P., & Mohankumar, P. (2020). An overview of green energy management systems. *10.1007/978-981-15-4246-6_34*.

Arcadis, T.A. (2019). *Supporting the implementation of the European Green Infrastructure Strategy*. Regional Environment Centre, Risk & Policy Analysis, Stella Consulting.

https://www.aicte-india.org/sites/default/files/Enviroment_Policy.pdf

Kuhtz, S. (2007). Adoption of sustainable development schemes and behaviours in Italy: Barriers and solutions - What can educators do? International Journal of Sustainability in Higher Education. 8. *10.1108/14676370710726625*.

Mohammadalizadehkord. M., & Weaver, R. (2018). Universities as models of sustainable energy-consuming communities? Review of Selected Literature , Sustainability, 10 (9), 3250. *https://doi.org/10.3390/su10093250*.

Mohd. Wira, & Hooman, A. (2017). The importance of green technologies and energy efficiency for environmental protection. ***International Journal of Applied Environmental Sciences, 12*** (5), 937-95.

Moore, J. (2005). Seven recommendations for creating sustainability education at the university level. *International Journal of Sustainability in Higher Education*, *6*(4), 326-399.

KICMA - REACH • ISSN 2395-0293 | VOL. 9 • NO. 1
Peer Reviewed Journal of Commerce & Management | JAN-JUN 2023

Regulatory Framework of Credit Default Swap and The Market Potential

Gokul S.A.[1], Dr Raju G.[2] & Abhilash V.S.[3]

ABSTRACT

Almost all businesses in this rapidly evolving world are exposed to credit risk. The capacity of an organization to manage or minimize credit risk will have a significant impact on its success. Credit default swap (CDS) is one such risk management tool that enables investors to hedge against the risk of an individual debt obligation, such a corporate bond or loan. Even though it may be used as a risk management tool, it hasn't really taken off in India. The CDS market has faced considerable challenges and controversies in the past, particularly during the global financial crisis of 2008. The absence of adequate regulations has been one of the main causes of CDS failure in the past. A CDS regulatory framework was created by RBI following the global financial crisis of 2008. The regulatory framework governing financial instruments plays a critical role in shaping their market potential and stability. Understanding the impact of the regulatory framework on the market potential of CDS is of utmost importance for financial regulators, market participants, and policymakers. A comprehensive analysis of the factors influencing the future market potential of CDS can provide valuable insights into the effectiveness of the existing regulatory framework and help identify areas for improvement. In order to assess how various regulatory factors may affect future market potential of CDS, the research makes use of analysis techniques including multiple regression and linear regression. The regulatory factors of CDS were prioritised using the AHP approach. The study's findings demonstrate that the regulatory framework for CDS has a substantial influence on its market potential and it is also evident that knowledge and awareness have a greater influence on CDS's potential in the future.

Keywords: Credit default swap, Credit risk, Risk management tool, Regulatory framework, Market potential

Introduction

Credit default swap (CDS) is a type of financial derivative product that enables investors to hedge against the risk of an individual debt obligation, such a corporate bond or loan. (Bhanumurty,2017). It is

1 *Gokul S.A., CET School of Management, CET Trivandrum.*
2 *Dr. Raju, Professor, Department of Commerce, Government College for Women, Trivandrum, University of Kerala.*
3 *Abhilash V.S., Research Scholar, Loyola College of Social Sciences, Trivandrum. Institute of Management in Kerala (IMK), University of Kerala.*

essentially a contract between two parties, known as the protection buyer and the protection seller. The protection seller in a CDS receives a regular payment from the protection buyer known as the CDS spread or premium. In exchange, the protection seller consents to pay the protection buyer compensation in the case of a credit event, such as a default, bankruptcy, or a predetermined decline in the creditworthiness of the issuer of the underlying debt. In the case of a credit event, the protection buyer has the right to initiate the CDS contract and request payment from the protection seller. The regulatory framework governing financial instruments plays a critical role in shaping their market potential and stability. One such instrument that has gained significant attention and scrutiny is the Credit Default Swap (CDS). CDS is a derivative contract that allows investors to hedge against the credit risk associated with underlying assets, such as bonds or loans. However, the CDS market has faced considerable challenges and controversies in the past, particularly during the global financial crisis of 2008.Understanding the impact of the regulatory framework on the market potential of CDS is of utmost importance for financial regulators, market participants, and policymakers. A comprehensive analysis of the factors influencing the future market potential of CDS can provide valuable insights into the effectiveness of the existing regulatory framework and help identify areas for improvement.

LITERATURE REVIEW

The core working of CDSs has been clearly explained and demonstrated how a CDSs contract functions, and examined the expansion of the international and Indian CDS markets from a comprehensive angle. The findings of the research shows that CDSs are still relatively new in India. Regulating authorities must help banks because they are the key market makers and users in the Indian CDSs market. Banks should learn from and gather expertise from other active CDSs markets throughout the world in order to boost their confidence. **(Tabassum and Yameen 2022)**

The advantages and disadvantages of CDS had been explained by highlighting the need for additional study to fully comprehend the implications. It also provided a general review of the post-crisis market structure and the updated CDS regulatory environment. Thirdly, it addressed CDS at the interface of law and finance, highlighting agency disputes and financial intermediation. **(Augustin *et al.*, 2016)**

Briefly assessed the scope of the RBI's guidelines issued thus far regarding the introduction of CDS in India. The researchers also aim to determine the demand for CDS and examine the Indian credit derivative market as part of their attempt. **(Gupta and Narain 2012)**

An investigative study on how well the introduction of credit default swaps (CDSs) affected real business decisions. The structural model predicted that when credit event uncertainty is smaller, CDS introduction will enhance debt capacity more. They found that CDSs boost leverage more in legal and market environments where there is lesser uncertainty regarding CDS obligations and more weak enforcement of property rights. The outcomes underline how crucial legal ambiguity is in interpreting the underlying trigger events of global credit derivatives **(Bartram *et al.*, 2022)**.

Provided a clarity on how the Indian derivatives market operates, with a focus on credit derivatives in particular. The study looked at several types of credit derivatives, including Credit Linked Notes (CLN), Total Return Swaps (TRS), and Credit Default Swaps (CLN). The advantages and hazards of credit derivatives were also examined in the research. **(Bhanu Murthy 2017)**

Credit default swaps (CDSs) can be used to speculate or to manage credit risk exposures, but this research looked at another way that banks can use CDSs: to get regulatory capital relief by purchasing CDS referencing their debtors. When banks buy CDS to increase capital ratios, it has unexpected repercussions since they extend riskier loans. While banks that use capital-induced CDS in trading or speculating are more profitable in normal times, they perform worse in times of crisis and need more government assistance. The results imply that banks may become riskier as a result of their CDS trading for capital relief. **(Shan *et al.*, 2021)**

The consequences of the theoretical interplay between the information transmission role and the empty creditor problem of credit default swaps under debt rollover were examined. The provision of

CDS protection, in contrast to the empty creditor argument, improves the likelihood of an out-of-court restructuring if the liquidation value is insufficiently high. The provision of CDS protection does, however, raise the likelihood of corporate insolvency when it is significant. **(Osano 2020)**

An overview on credit derivatives and its implications were provided. It also gives a basic idea on the benefits and limitations of CDS. **(Hull and White 2013)**

This article made two main points that are meant to serve as guidelines for policymakers and financial market regulators: (1) Derivatives are incredibly helpful to businesses in managing business risks when used properly; and (2) Derivatives and derivatives-related products did not significantly contribute to the financial crisis of 2007–2009. **(Tuckman 2016)**

The links between credit default swap (CDS) spreads and risk disclosure characteristics were investigated with a focus on the information on risk management and the projected qualitative and quantitative effects of risks on future business performance**. (Mateev and Marinova 2019).**

STATEMENT OF THE PROBLEM

CDS is a powerful risk management tool in the hands of financial institutions. The failure of the credit default swap as a risk-reduction instrument in the past was mostly due to the lack of adequate regulations. A CDS regulatory framework was created by RBI following the global financial crisis of 2008.This research aims to assess the impact of CDS's existing legal system on its future market potential.

OBJECTIVES OF THE STUDY

1. To assess the impact of current legal framework governing CDS on its future market potential.
2. To determine the significance of public knowledge and awareness on CDS in creating future market potential.
3. To prioritize the legal factors of CDS based on its future market potential.

HYPOTHESIS

H1: Current legal framework of CDS has significant impact on its future market potential.

H2: Knowledge and awareness has influence on future market potential of CDS.

RESEARCH MODEL

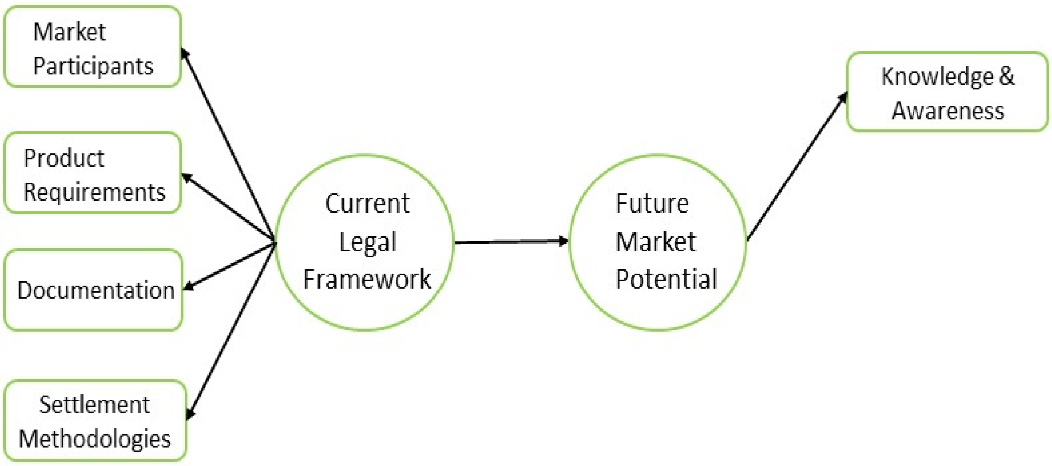

Figure 1 Theoretical Framework

Future Market Potential

The Indian economy is anticipated to keep growing and creating opportunities for corporate entities to access funding so there is high chance for investors to get exposed to credit risk**.** Secondly, the regulatory framework for CDS in India has become more supportive in recent years, with the RBI and SEBI taking steps to promote the development of the CDS market. Lastly, there is a chance that the CDS market may develop similarly given the expansion of the derivatives market in India, notably in the areas of interest rate and currency derivatives.

Knowledge and Awareness

The lack of knowledge and awareness about Credit Default Swaps (CDS) can create potential risks for investors. Without a clear understanding of the mechanics of CDS, the associated risks, and potential benefits, investors may make uninformed investment decisions, leading to significant losses. Lack of awareness can also lead to market inefficiencies and potential for financial instability and systemic risk.

Market Participants

The Securities and Exchange Board of India (SEBI) has established guidelines for the trading of CDS, which include eligibility criteria for market participants. These guidelines mandate that only banks, financial institutions, insurance companies, mutual funds, and other eligible entities with a minimum net worth requirement are allowed to participate in the market.

Product Requirements

The Securities and Exchange Board of India (SEBI) has established guidelines for the trading of CDS, which include product requirements for market participants. These guidelines mandate that CDS contracts must be based on a reference entity and a reference obligation, with standardized terms for tenure, notional amount, and premium.

Documentation

The Securities and Exchange Board of India (SEBI) has established guidelines for the trading of CDS, which include requirements for product documentation for market participants. These guidelines mandate that all CDS contracts must have clear and unambiguous documentation outlining the terms and conditions of the contract, including the reference entity, reference obligation, tenor, notional amount, and premium. The documentation must also clearly state the rights and obligations of the parties involved, including the protection of confidential information and dispute resolution mechanisms.

Settlement Methodologies

The Securities and Exchange Board of India (SEBI) has established guidelines for the trading of CDS, which include requirements for settlement methodologies for market participants. These guidelines mandate the use of central counterparties (CCPs) for clearing and settlement of CDS contracts, which reduces counterparty risk and promotes market stability.

RESEARCH DESIGN AND METHODOLOGY

Designing the questionnaire

For gathering responses, the study used a two-part questionnaire. The financial expert's demographic information was gathered in the first section, and questions about the variables influencing future market potential of CDS were asked in the second section.

Sample design

The primary data was collected from the focus group of financial experts through proportional sampling method. The following would be the sources from which the focus group's financial experts would be selected: Participants from the banking sector, participants from the insurance sector, participants from the auditing profession, and other financial specialists.180 financial experts from across the country provided data for this study.

DATA ANALYSIS AND RESULTS OF THE STUDY

Multiple regression and Linear regression were used in the study to evaluate the hypotheses, and additional analysis using the Analytical Hierarchy Process (AHP) was done to rank the factors of regulatory framework which has higher impact on the market potential of CDS.

Multiple Regression Analysis

The Multiple Regression Analysis was done with the following hypothesis:

H01: Current legal framework of CDS has no significant impact on its future market potential.

H1: Current legal framework of CDS has significant impact on its future market potential.

Model Summary 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.836[a]	.699	.692	.41206	.699	101.720	4	175	.000

a. Predictors: (Constant), Settlement methodologies, Product Requirements, Documentation, Market participants

Table 1. Model Summary 1

ANOVA 1

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.086	4	17.271	101.720	.000[b]
	Residual	29.714	175	.170		
	Total	98.800	179			

a. Dependent Variable: Future market potential

b. Predictors: (Constant), Settlement methodologies, Product Requirements, Documentation, Market participants

Table 2. ANOVA 1

COEFFICIENTS 1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.206	.153		1.347	.180
	MP	.048	.047	.061	1.009	.014
	PR	.105	.050	.110	2.107	.037
	DMT	.621	.055	.594	11.381	.000
	SM	.171	.042	.224	4.091	.000

Dependent Variable: FMP

Table 3. Coefficients 1

As the significance level of all the four factors obtained was less than 0.05, the null hypothesis is rejected. As a result, the alternate hypothesis is accepted.ie, it is evident that the current regulatory framework has a significant impact on the future market potential of CDS.

Linear Regression Analysis

The Multiple Regression Analysis was done with the following hypothesis:

H02: Knowledge and awareness has no influence on future market potential of CDS.

H2: Knowledge and awareness has influence on future market potential of CDS.

Model Summary 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.654[a]	.428	.424	.59325

a. Predictors: (Constant), Knowledge&Awareness

Table 4. Model summary 2

ANOVA 2

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.086	4	17.271	101.720	.000[b]
	Residual	29.714	175	.170		
	Total	98.800	179			

a. Dependent Variable: FMP
b. Predictors: (Constant), KA

Table 5. ANOVA 2

COEFFICIENTS 2

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.373	.238		5.775	.000
	KA	.628	.060	.654	10.519	.000

a. Dependent Variable: FMP

b. Predictors: (Constant), KA

Table 6 Coefficients 2

Since the p value is less than 0.05, so the study rejects the null hypothesis and accept alternate hypothesis. So, it is clear that knowledge and awareness has a significant impact over the future market potential.

ANALYTICAL HIERARCHY PROCESS

For the Analytical Hierarchy Process, the data was collected from 8 experts who have sound knowledge on derivative market. All responses were having a consistency ratio less than 10%, meaning they are valid. Factors under the current legal framework are Market participants, Product requirements, Documentation, Settlement Methodologies**.** The results are as follows:

R1	R2	R3	R4	R5	R6	R7	R8	GM	RANK	VARIABLES
0.7418	0.4451	0.4110	0.7939	0.5980	0.6010	0.6643	0.6211	0.59282	1	MP
0.2465	0.3153	0.1799	0.1041	0.2115	0.1652	0.1789	0.1789	0.1875	3	PR
0.0756	0.1598	0.4811	0.4854	0.3005	0.4223	0.3752	0.3752	0.2826	2	DMT
0.2866	0.0796	0.0913	0.2017	0.164	0.1526	0.1730	0.1635	0.1515	4	SM

Table 7. Analytical Hierarchy Process Weights

FACTORS	RANK
Market Participants	1
Documentation	2
Product Requirements	3
Settlement methodologies	4

Table 8. AHP Ranks

From the results, the market participants had the highest ranking, whereas the settlement methodologies had the lowest ranking.

RESULTS OF THE STUDY

From the results of the Multiple Regression Analysis, whose primary data was collected from financial experts across the country, all the identified factors of current legal framework of CDS such as market participants, product requirements, documentation and settlement methodologies are significant, so it is evident that current regulatory framework of CDS had a significant impact over its future market potential. The outcome of the linear regression makes it abundantly evident that knowledge and awareness have greater influence on the future market potential of CDS.As per the Analytic Hierarchy Process results, whose data was collected from experts who have prior experience and sound knowledge on derivative market, the study was able to rank the current regulatory framework factors which has greater impact on the future market potential. Based on the results, market participants were ranked the first to have an impact on future market potential of CDS and settlement methodologies was ranked the least out of all other factors to have an impact on the future market potential of CDS.

RECOMMENDATIONS

Public knowledge and awareness were identified as having a high influence on the future market potential of CDS, it is important to focus on improving education and increasing awareness among the general public about CDS. This can be achieved through targeted educational campaigns, seminars, and publications that provide clear and accessible information about CDS, their benefits, risks, and proper usage.

The research study indicated that market participants, among the legal factors, had the highest impact on the future market potential of CDS. Therefore, it is recommended to closely involve market participants, such as financial institutions, investors, and traders, in discussions and decision-making processes regarding CDS. Their expertise and insights can contribute to the development of effective regulations and practices that promote transparency, stability, and trust in the CDS market.

LIMITATIONS

The regulatory landscape for financial instruments, including CDS, is subject to change. New regulations, amendments, or policy shifts may occur during the research process, potentially impacting the validity and relevance of findings. Additionally, there could be other unnoticed factors that affect future market potential of CDS that could have an effect on employees, but are difficult to identify. These factors can be identified and studied in future studies.

REFERENCES

Angelini, E., & Febo, E. Di. (2014). CDS Spreads: an Empirical Analysis on the Determinants. In *Journal of Empirical Economics* (Vol. 2, Issue 2).

Augustin, P., Saleh, F., & Xu, H. (2020). CDS Returns. *Journal of Economic Dynamics and Control*, *118*. https://doi.org/10.1016/j.jedc.2020.103977

Bartram, S. M., Conrad, J., Lee, J., & Subrahmanyam, M. G. (2022). Credit Default Swaps around the World. *Review of Financial Studies*, *35*(5). https://doi.org/10.1093/rfs/hhab092

Bhanu Murthy, K. V. (2017). Functioning of Derivatives Market in India with Special Focus on Credit Derivatives. *MUDRA : Journal of Finance and Accounting*, *3*(2). https://doi.org/10.17492/mudra.v3i2.7897

Chen, Q. A., & Du, F. (2017). Hedging of Credit Derivatives, Systematic Fluctuation and Banking Stability in China. *Singapore Economic Review*, *62*(4). https://doi.org/10.1142/S0217590817400288

Gupta, A. (n.d.). *"Credit Default Swap: A Tool for Risk Management."* https://www.researchgate.net/publication/344460870

Hull, J., Predescu, M., & White, A. (2004). The relationship between credit default swap spreads, bond yields, and credit rating announcements. *Journal of Banking and Finance*, *28*(11). https://doi.org/10.1016/j.jbankfin.2004.06.010

Malhotra, J., & Corelli, A. (2018). The determinants of CDS spreads in multiple industry sectors: A comparison between the US and Europe. *Risks*, *6*(3). https://doi.org/10.3390/risks6030089

Subrahmanyam, M. G., Tang, D. Y., & Wang, S. Q. (2014). Credit Default Swaps and Corporate Cash Holdings. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2447946

Tabassum, & Yameen, M. (2022). Credit default swaps (CDSs): an effective tool to manage credit risk of Indian banks. *Journal of Money and Business*, *2*(2), 165–172. https://doi.org/10.1108/jmb-03-2022-0012

Tuckman, B. (2016). Derivatives: Understanding Their Usefulness and Their Role in the Financial Crisis. *Journal of Applied Corporate Finance*, *28*(1). https://doi.org/10.1111/jacf.12159

Ye, X., Yu, F., & Zhao, R. (2022). Credit derivatives and corporate default prediction. *Journal of Banking and Finance*, *138*. https://doi.org/10.1016/j.jbankfin.2022.106418

Zhu, D. M., Gu, J. W., Yu, F. H., Ching, W. K., & Siu, T. K. (2021). How correlation risk in basket credit derivatives might be priced and managed? *IMA Journal of Management Mathematics*, *32*(2). https://doi.org/10.1093/imaman/dpaa013

KICMA - REACH • ISSN 2395-0293 | VOL. 9 • NO. 1
Peer Reviewed Journal of Commerce & Management | JAN-JUN 2023

Risk Estimation of Sovereign Bond Portfolio

Abhirej J R Nair[1], Dr Raju G.[2] & Binoy S.[3]

ABSTRACT

Bonds are one of the most invested form of investment as a risk free form of generating revenue. Bonds provide continuous interest till maturity. Sovereign bonds are one of the most sought after bonds among investors, these are issued by governments across the globe. Governments issue these bonds for raising funds from the public which are then utilized by them to do various infrastructural activities like bridges, roads etc. Decision to invest in bonds are decided upon the lenders ability to pay off the debt. Just like consumer is measured on the basis of credit score bond issuers are measured on their credit ratings. Credit ratings are scales that are published by credit ratings agencies like Moody's, S&P and Fitch. These ratings are based upon the financial status of various governments and it's ability to pay off the debt. There have been many cases in the past where certain countries have gone default. Thus investors should analyze the history of a country's credit ratings. This helps investors to know whether to invest or not. Another necessity is to check the level of assurance a credit agency gives by providing the rating this can also be analyzed on its past history of ratings. One such tool which has been used in the financial industry is Transition matrix or migration matrix. It is a model which measures the level of change that can take place in credit rating after it is given to an entity. It helps in measuring the rate of change that has taken place in the past regarding shift of ratings. Portfolios are also important in creating good investment options. Bonds are also created on this concept of portfolio. An investor can also consider credit ratings and a particular bonds credit history before investing in it. Investors need to look at these so that they can check the reliability or the level of assurance that is given by credit rating agencies.

Keywords: Transition matrix, Credit ratings, Sovereign bonds, Portfolio, Migration matrix

INTRODUCTION

Sovereign bonds are one of the sought after instruments that re considered to be risk free. These are bonds which are issued by government across the world for raising credit from the public to be used for the purpose of doing various developmental activities. These bonds require the government to pay

1 Abhirej J R Nair, CETSOM, CET Trivandrum.
2. Dr Raju G. Professor, Department of Commerce, Government College for Women, Trivandrum, University of Kerala
3 Research Scholar, Department of Kerala Studies, Department of Commerce, University of Kerala.

interest to the public as it would to creditors. A government like any entity would not always have the fund to pay off these interests. This means they have to print more money this would increase the money supply in the market meaning it would in turn increase the inflation rate. Another way for them is to default on the interest rate this means they would not pay up to the creditors.

The credit ratings are the metrics that are most looked upon in the case of measuring the performance of a sovereign bond as these ratings are adorned on a country on the basis of its financial performance and thus bonds also carry the same rating. This is used by investors which range from public to companies, financial institutions to investment banks. They rely on these ratings to identify which are safer to invest. It is always important for these investors to understand the trend that is present in downgrading or upgrading of these bonds.

PROBLEM STATEMENT

Sovereign bonds are one of the relied upon as a reliable form investment as they are released by governments for fulfilling their various developmental activities. The amount invested is something that an investor has belief upon government's payback capacity. This is not always fulfilled cause a government may default interest payment so as to maintain the current inflation rate. This will lead to loss of value for investors. Thus investors jump upon buying government bonds without proper analysis of the sovereign credit rating.

OBJECTIVES

1. To identify the transition rate of credit ratings
2. To evaluate the level of risk in bond portfolio using sovereign bonds

RESEARCH METHODOLOGY

RESEARCH DESIGN

The research design for this study was secondary in nature. The data used is the credit ratings on various sovereign bonds across the globe obtained from Fitch Credit Rating agency. The countries have been selected on the basis that credit rating for maximum number of years are available which is essential in understanding a trend in the transition matrix.

For the purpose of the study a BBB- bond has been set as constant in each portfolio. This is to create a portfolio on the basis of an Indian context which means the one of the two portfolio in a portfolio selection will be a BBB- rated bond.

SOURCES OF DATA

The data has been collected from ratings provided by Fitch Credit Rating Agency through their website. The period selected for data collection was from 2011 to 2022.

SAMPLE SIZE

The sample size of the study is credit ratings of 62 countries obtained from Fitch Rating agency.

DATA ANALYSIS TECHNIQUE

This study looks forward in using the transition(migration) matrix for analysing the various rated sovereign bonds. The method used was developed J P Morgan during the year 1998 as a tool to measure credit risk. The credit transition matrix is used to ascertain probabilities of credit rate shifting and this value is further used to analyse the portfolio risk. This method has been used by various financial institutions for assessing credit risk of their assets from loans to investment portfolios.

NEED AND SIGNIFICANCE OF THE STUDY

The project is significant in understanding the credit ratings of sovereign bonds and how these can help the investors in analysing the credit risk that is associated with buying a bond. This project will help allocate funds in a manner which is based on the probability of a bond going into default. The project is also needed to raise the awareness while investing in sovereign bonds.

REVIEW OF LITERATURE

- Rating agencies publish transition matrices each year, which incorporate credit risk information in the form of ratings based on discrete observations. A significant difficulty occurs, as virtually no defaults are seen for higher rating classes, resulting in default probabilities of zero. However, raw default data may not be available in the desired granularity or may not be provided at all, leaving the practitioner to rely on given one-year transition matrices. The one-year transition matrix must then be transformed into a generator matrix. **(Hughes and Werner 2016)**
- The possibility of a government repaying its sovereign debt is determined by both the quantity of debt issued and the country's future ability to repay. While the former is visible to the public, the government may know more about the latter than investors. This research demonstrates how the market's capacity to identify economies based on fiscal sustainability is hampered, potentially leading to a gap between bond prices and default risk. The model can assist explain how Eurozone bond prices behaved prior to the recent European sovereign debt crisis**. (Mihm 2016)**
- There are risks that are associated with monetary exchanges that take place. It employs the instrumental variables method, which attributes fundamentals' explanatory strength in a spread equation to their predictive capacity for observed risk realisations. Using historical data from poor nations, Bonds may be discovered as realization of variablitliy. However, there is considerable evidence that bond spreads grow more than risk probabilities during currency crises. **(Peter 2002)**
- Evaluating migration volatility, variance, or uncertainty is a real-world phenomenon that may be experimentally assessed. The work expands reduced form bond valuation models based on rating migration (matrices) by allowing variation in the rating migration matrix rather than variance in the rating migration matrix. Because it accounts for rating migration uncertainty, it is seen as a more realistic and practical model of downgrade risk and default risk. The resultant price probability distribution is defined by looking for the lowest and highest price that may be charged via optimisation. The research also mimics the bond value of certain issuers. **(Barnard and Brian 2020)**
- Study looks at the impact of sovereign credit rating (SCR) and composite nation risk on Pakistan government bond yields from 1995 to 2015. Moderating variables such as the inflation rate, current account balance, GDP rate, and spot oil prices have been introduced. For analysis, the co-relation and regression methods were applied. Bond yield has a negative link with sovereign credit rating, inflation rate, and current account balances. This means that as the value of all three variables decreased, the value of the bond yield increased. **(Imran et al., 2017)**
- A model of sovereign bond interest rates with default risk is offered. The model takes into account the relationship between interest rates and default risk. Several equilibria and stability difficulties are investigated. The model investigates the degree of debt that markets will accept in the face of uncertainty about production growth, fiscal discipline, real exchange rates, and IMF intervention. The projected IMF aid has a significant impact on the debt cap. **(McGee 2007)**
- Organizations and academics have conducted extensive study on credit scoring models, a crucial financial management activity. With the continued development of fresh machine learning models, ensemble learning has been incorporated into the application of credit scoring, and various studies have addressed the superiority of ensemble learning. **(Li et al., 2020)**
- Using migration data of a rating agency, the paper attempts to quantify the impact of macroeconomic conditions on credit-rating migrations. The migrations are modeled as a coupled Markov chain, where

the macroeconomic factors are represented by unobserved tendency variables. In the simplest case, these binary random variables are static and credit-class-specific. A generalization treats tendency variables evolving as a time-homogeneous Markov chain. According to the estimates, the investment-grade financial institutions evolve independently of the rest of the economy represented by the data. **(Boreiko etal.2017)**

- Misestimation of rating transition probabilities may cause banks to lend money incoherently with borrowers' default trajectory, resulting in both asset quality deterioration and increased system distress. Using a Mover-Stayer model to assess the migration risk of small and medium-sized businesses, we discover that banks overestimate their credit risk, resulting in unnecessary regulatory capital. This has significant macroeconomic ramifications because maintaining a big capital buffer is costly for banks, affecting their ability to lend in the broader economy. **(Ferretti et al., 2019)**
- While empirical sovereign credit risk models have depicted default as being primarily driven by economic and financial risk factors, this study explicitly addresses the relative role of political risk elements that the empirical research has frequently missed. It assesses the timing and thresholds of the dynamic system using a Markov-switching error-correction model applied to data from the Republic of Argentina, and then test the relationship of three risk factors (political, economic, and financial) to the sovereign yield spread in a forward-looking representation. **(Sottile 2009)**
- Sovereign and municipal bond yields are heavily influenced by perceptions of default risk. Credit rating companies, which have recently had their reputations harmed, are the conventional source of default risk evaluations. He believes that economists and other academics are better equipped to predict the risk of government bond defaults. Economists can provide a different perspective by collecting and analysing time series of fiscal data and creating simulations of future revenues and expenditures. **(Joffe 2012)**

SOVEREIGN BOND

Sovereign bond are instruments which are issued by the government. This instrument is issued so as to borrow money. Sovereign debt is also known as government debt, public debt, and national debt. These bonds are purchased by investors who act as lender to the government. They are purchased in the perception that these bonds are a safe and stable investment option as they get periodic interest payments and the principal amount on bond's maturity. There are various reasons for issuing sovereign bonds

Government may issue bond so as to raise funds for financing various government spending such as defence, social services etc.

Sovereign bonds also provide large amount of funding for large-scale infrastructure projects such as highways, airports and energy facilities.

Governments have also issued so as to repay existing debt which helps them to extend repayment period.

CREDIT RATINGS

Credit ratings are evaluations of a borrower's creditworthiness or credit risk made by credit rating organisations and given to financial instruments, governments, or enterprises. These ratings show how likely it is that a borrower will stop making payments on their debts.

For the purpose of assigning credit ratings, credit rating agencies consider a number of variables, such as economic circumstances, payback history, industry forecast, and financial soundness. The alphanumeric symbols used to denote the ratings commonly include AAA, AA, A, BBB, BB, B, CCC, CC, C, and D, with AAA being the highest grade and RD denoting default.

Credit rating firms create this rating using a complete report that considers a variety of characteristics such as lending and borrowing history, ability to repay debt, prior debts, future economic potential, and more.

BOND PORTFOLIO

When it comes to popularity, bond portfolios typically trail stock portfolios. Bonds don't seem to garner the same attention as their much jazzier stock-based relatives, despite the fact that they serve an important role in overall asset allocation. They are frequently built as an afterthought or lie unused for years, producing revenue. This is problematic because bonds serve as a hybrid, sharing and mixing the risk and return characteristics of both equities and cash.Bond portfolios that are properly structured can generate income and a total return, diversify other asset classes, and be as risky or safe as the designer desires. The world of fixed-income investments is as vast and exotic as the stock market.

TRANSITION MATRIX

A credit rating transition matrix, also known as a rating migration matrix or rating transition matrix, is a tool used in credit risk analysis to calculate the historical probability of changes in credit ratings for a given set of businesses over a certain time period. It predicts whether credit ratings will be upgraded, downgraded, or remain constant.

The sum of each row in the matrix should equal 100% or 1, indicating that an entity should migrate to a different rating category, stay in the current category, or default. The transition matrix is based on historical data and is tailored to a certain set of entities and periods. It can be used for credit risk modelling, portfolio analysis, stress testing, and analysing the creditworthiness of individual borrowers or the overall credit quality of a portfolio.

DATA ANALYSIS AND INTERPRETATION

Table 1
One Yaer Transition Matrix

Transition Matrix	RD	C	CC	CCC-	CCC	CCC+	B-	B	B+	BB-	BB	BB+	BBB-	BBB	BBB+	A-	A	A+	AA-	AA	AA+	AAA	Total
C	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
CC	4	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
CCC-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CCC	2	1	0	1	6	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
CCC+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B-	0	1	3	0	1	2	35	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
B	3	0	3	0	2	0	7	43	4	1	0	0	0	0	0	0	0	0	0	0	0	0	63
B+	0	0	0	0	1	0	2	5	40	3	0	0	0	1	0	0	0	0	0	0	0	0	52
BB-	0	0	0	0	0	0	0	0	8	28	5	0	0	0	0	0	0	0	0	0	0	0	41
BB	0	0	0	0	0	0	0	0	0	3	13	4	0	0	0	0	0	0	0	0	0	0	20
BB+	0	0	0	0	0	0	1	0	0	3	1	17	3	1	0	0	0	0	0	0	0	0	26
BBB-	0	0	0	0	0	0	0	0	0	0	3	4	41	7	0	0	0	0	0	0	0	0	55
BBB	0	0	0	0	0	0	0	0	0	0	0	1	7	32	5	0	0	0	0	0	0	0	45
BBB+	0	0	0	0	0	0	0	0	1	0	0	0	0	3	24	0	0	0	0	0	0	0	28
A-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0	12
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2	1	1	0	0	17
A+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	13	1	0	0	0	18
AA-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	28	3	0	0	32
AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6	24	1	0	33
AA+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	18	0	21
AAA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	72	75

Table 1 shows the number of times a particular rated bond shifts from one rating to another. This has been obtained from the credit ratings of various countries over the last 11 years. For eg. In the table a BBB- bond has stayed in BBB- for 41 times in the past. It also shows that it has shifted to 7 times towards BBB and has downgraded to BB+ 1 time.

Table 2
Transition Probabilty Matrix

	RD	C	CC	CCC-	CCC	CCC+	B-	B	B+	BB-	BB	BB+	BBB-	BBB	BBB+	A-	A	A+	AA-	AA	AA+	AAA	Total
C	0.5	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%
CC	0.571	0	0.142	0	0.285	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%
CCC-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%
CCC	0.142	0.071	0	0.071	0.428	0.142	0.142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%
CCC+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%
B-	0	0.02	0.06	0	0.02	0.04	0.7	0.16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100%
B	0.047	0	0.047	0	0.0317	0	0.11	0.682	0.063	0.0158	0	0	0	0	0	0	0	0	0	0	0	0	100%
B+	0	0	0	0	0.0192	0	0.0384	0.0961	0.7692	0.0576	0	0	0	0.0192	0	0	0	0	0	0	0	0	100%
BB-	0	0	0	0	0	0	0	0	0.1951	0.6829	0.1219	0	0	0	0	0	0	0	0	0	0	0	100%
BB	0	0	0	0	0	0	0	0	0	0.15	0.65	0.2	0	0	0	0	0	0	0	0	0	0	100%
BB+	0	0	0	0	0	0	0.0384	0	0	0.1153	0.0384	0.6538	0.1153	0.0384	0	0	0	0	0	0	0	0	100%
BBB-	0	0	0	0	0	0	0	0	0	0	0.0545	0.0727	0.7454	0.1272	0	0	0	0	0	0	0	0	100%
BBB	0	0	0	0	0	0	0	0	0	0	0	0.0222	0.1555	0.7111	0.1111	0	0	0	0	0	0	0	100%
BBB+	0	0	0	0	0	0	0	0	0.0357	0	0	0	0	0.1071	0.8571	0	0	0	0	0	0	0	100%
A-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0833	0.9166	0	0	0	0	0	0	100%
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7647	0.1176	0.0588	0.0588	0	0	100%
A+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0555	0.1666	0.7222	0.0555	0	0	0	100%
AA-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0312	0.875	0.0937	0	0	100%
AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0303	0.0303	0.1818	0.7272	0.0303	0	100%
AA+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0476	0.0952	0.8571	0	100%
AAA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04	0.96	100%

Table 2 shows the probabilistic value of a credit rating migrating to another rating on a one-year basis. This is obtained by dividing the number of transitions with total number of transitions.

Table 3
Transition Matrix

Transition Probabilities	RD	C	CC	CCC-	CCC	CCC+	B-	B	B+	BB-	BB	BB+	BBB-	BBB	BBB+	A-	A	A+	AA-	AA	AA+	AAA	Total
C	**50.00%**	0.00%	0.00%	0.00%	0.00%	0.00%	**50.00%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
CC	**57.14%**	0.00%	14.29%	0.00%	**28.57%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
CCC-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
CCC	**14.29%**	**7.14%**	0.00%	**7.14%**	**42.86%**	**14.29%**	**14.29%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
CCC+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
B-	0.00%	2.00%	6.00%	0.00%	2.00%	**4.00%**	**70.00%**	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
B	**4.76%**	0.00%	4.76%	0.00%	3.17%	**0.00%**	**11.11%**	**68.25%**	**6.35%**	**1.59%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
B+	0.00%	0.00%	0.00%	0.00%	1.92%	0.00%	**3.85%**	**9.62%**	**76.92%**	**5.77%**	0.00%	0.00%	0.00%	1.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
BB-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**19.51%**	**68.29%**	**12.20%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
BB	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**15.00%**	**65.00%**	**20.00%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
BB+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.85%	0.00%	0.00%	**11.54%**	**3.85%**	**65.38%**	**11.54%**	**3.85%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
BBB-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**5.45%**	**7.27%**	**74.55%**	**12.73%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
BBB	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.22%	**15.56%**	**71.11%**	**11.11%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
BBB+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	0.00%	0.00%	0.00%	10.71%	**85.71%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
A-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**8.33%**	**91.67%**	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**76.47%**	**11.76%**	**5.88%**	5.88%	0.00%	0.00%	100%
A+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**5.56%**	**16.67%**	**72.22%**	**5.56%**	0.00%	0.00%	0.00%	100%
AA-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.13%	**87.50%**	**9.38%**	0.00%	0.00%	100%
AA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	3.03%	**18.18%**	**72.73%**	3.03%	0.00%	100%
AA+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**4.76%**	**9.52%**	**85.71%**	0.00%	100%
AAA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**4.00%**	**96.00%**	100%

Table 3 shows the percentage probability value that a credit rating will migrate to another credit rating. This means a BBB- bond will remain to be BBB- for 74.55%. There is also possibility of 12.73% it will migrate to BBB rating. There is also a situation where there is a 50% chance a C rated bond will downgrade to Risk Default rate. This means particular supplier of that bond will default on the interest payments.

Table 4
Two Bond Portfolio matrix

			BBB																					
			RD	C	CC	CCC-	CCC	CCC+	B-	B	B+	BB-	BB	BB+	BBB-	BBB	BBB+	A-	A	A+	AA-	AA	AA+	AAA
			0	0	0	0	0	0	0	0	0	0	0	0.022222	0.155556	0.711111	0.111111	0	0	0	0	0	0	0
	RD	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	C	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	CC	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	CCC-	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	CCC	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	CCC+	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	B-	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	B	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	B+	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	BB-	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BBB-	BB	0.054545455	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.12%	0.85%	3.88%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	BB+	0.072727273	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.16%	1.13%	5.17%	0.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	BBB-	0.745454545	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.66%	11.60%	53.01%	8.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	BBB	0.127272727	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	1.98%	9.05%	1.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	BBB+	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	A-	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	A	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	A+	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	AA-	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	AA	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	AA+	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	AAA	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 4 shows the two-bond portfolio of a BBB- bond and a BBB rated bond. This method is for ascertaining the joint probability that two bonds are having risk upgrading or downgrading. In this it shows that 53.01% of times the portfolios will not downgrade or upgrade. Which means both bonds will not be shifting in the portfolio. The table also shows there is 11.60% chance that BBB- bond will remain at BBB- and BBB will shift to BBB-. This is the product of probabilities of its shifting

Table 5
Discounted value of bonds

Rating	Value
RD	0.2
C	0.59
CC	0.72
CCC-	0.74
CCC	0.77
CCC+	0.79
B-	0.80
B	0.81
B+	0.82
BB-	0.83
BB	0.85
BB+	0.86
BBB-	0.87
BBB	0.91
BBB+	0.92
A-	0.93
A	0.94
A+	0.95
AA-	0.96
AA	0.97
AA+	0.98
AAA	1

Table 5 shows the discounted value of bonds which means the amount they are ready to pay. In this it shows AAA=1 which means buyers don't need a discount to buy these bonds.

Table 6
Discounted value of bonds

	RD	C	CC	CCC-	CCC	CCC+	B-	B	B+	BB-	BB	BB+	BBB-	BBB	BBB+	A-	A	A+	AA-	AA	AA+	AAA
RD	0.4	0.79	0.92	0.94	0.97	0.99	0.2	1.01	1.02	1.03	1.05	1.06	1.07	1.11	1.12	1.13	1.14	1.15	1.16	1.17	1.18	1.2
C	0.79	1.18	1.31	1.33	1.36	1.38	0.59	1.4	1.41	1.42	1.44	1.45	1.46	1.5	1.51	1.52	1.53	1.54	1.55	1.56	1.57	1.59
CC	0.92	1.31	1.44	1.46	1.49	1.51	0.72	1.53	1.54	1.55	1.57	1.58	1.59	1.63	1.64	1.65	1.66	1.67	1.68	1.69	1.7	1.72
CCC-	0.94	1.33	1.46	1.48	1.51	1.53	0.74	1.55	1.56	1.57	1.59	1.6	1.61	1.65	1.66	1.67	1.68	1.69	1.7	1.71	1.72	1.74
CCC	0.97	1.36	1.49	1.51	1.54	1.56	0.77	1.58	1.59	1.6	1.62	1.63	1.64	1.68	1.69	1.7	1.71	1.72	1.73	1.74	1.75	1.77
CCC+	0.99	1.38	1.51	1.53	1.56	1.58	0.79	1.6	1.61	1.62	1.64	1.65	1.66	1.7	1.71	1.72	1.73	1.74	1.75	1.76	1.77	1.79
B-	0.2	0.59	0.72	0.74	0.77	0.79	0	0.81	0.82	0.83	0.85	0.86	0.87	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	1
B	1.01	1.4	1.53	1.55	1.58	1.6	0.81	1.62	1.63	1.64	1.66	1.67	1.68	1.72	1.73	1.74	1.75	1.76	1.77	1.78	1.79	1.81
B+	1.02	1.41	1.54	1.56	1.59	1.61	0.82	1.63	1.64	1.65	1.67	1.68	1.69	1.73	1.74	1.75	1.76	1.77	1.78	1.79	1.8	1.82
BB-	1.03	1.42	1.55	1.57	1.6	1.62	0.83	1.64	1.65	1.66	1.68	1.69	1.7	1.74	1.75	1.76	1.77	1.78	1.79	1.8	1.81	1.83
BB	1.05	1.44	1.57	1.59	1.62	1.64	0.85	1.66	1.67	1.68	1.7	1.71	1.72	1.76	1.77	1.78	1.79	1.8	1.81	1.82	1.83	1.85
BB+	1.06	1.45	1.58	1.6	1.63	1.65	0.86	1.67	1.68	1.69	1.71	1.72	1.73	1.77	1.78	1.79	1.8	1.81	1.82	1.83	1.84	1.86
BBB-	1.07	1.46	1.59	1.61	1.64	1.66	0.87	1.68	1.69	1.7	1.72	1.73	1.74	1.78	1.79	1.8	1.81	1.82	1.83	1.84	1.85	1.87
BBB	1.11	1.5	1.63	1.65	1.68	1.7	0.91	1.72	1.73	1.74	1.76	1.77	1.78	1.82	1.83	1.84	1.85	1.86	1.87	1.88	1.89	1.91
BBB+	1.12	1.51	1.64	1.66	1.69	1.71	0.92	1.73	1.74	1.75	1.77	1.78	1.79	1.83	1.84	1.85	1.86	1.87	1.88	1.89	1.9	1.92
A-	1.13	1.52	1.65	1.67	1.7	1.72	0.93	1.74	1.75	1.76	1.78	1.79	1.8	1.84	1.85	1.86	1.87	1.88	1.89	1.9	1.91	1.93
A	1.14	1.53	1.66	1.68	1.71	1.73	0.94	1.75	1.76	1.77	1.79	1.8	1.81	1.85	1.86	1.87	1.88	1.89	1.9	1.91	1.92	1.94
A+	1.15	1.54	1.67	1.69	1.72	1.74	0.95	1.76	1.77	1.78	1.8	1.81	1.82	1.86	1.87	1.88	1.89	1.9	1.91	1.92	1.93	1.95
AA-	1.16	1.55	1.68	1.7	1.73	1.75	0.96	1.77	1.78	1.79	1.81	1.82	1.83	1.87	1.88	1.89	1.9	1.91	1.92	1.93	1.94	1.96
AA	1.17	1.56	1.69	1.71	1.74	1.76	0.97	1.78	1.79	1.8	1.82	1.83	1.84	1.88	1.89	1.9	1.91	1.92	1.93	1.94	1.95	1.97
AA+	1.18	1.57	1.7	1.72	1.75	1.77	0.98	1.79	1.8	1.81	1.83	1.84	1.85	1.89	1.9	1.91	1.92	1.93	1.94	1.95	1.96	1.98
AAA	1.2	1.59	1.72	1.74	1.77	1.79	1	1.81	1.82	1.83	1.85	1.86	1.87	1.91	1.92	1.93	1.94	1.95	1.96	1.97	1.98	2

Table 6 shows the joint value in the case of a two bond portfolio

Portfolio of BBB and BBB- rated bond

Table 7
Portfolio 1

Current value	1.78
Expected Value	1.777051
Standard deviation	0.00628

This portfolio shows a standard deviation of 0.00628 which is a low rate of deviation and it also shows very minute change in the expected value in future one year down the line

Portfolio of AAA and BBB- rated bond

Table 8
Portfolio 2

Current Value	1.87
Expected Value(1 year)	1.872473
Standard Deviation	0.005174

This portfolio shows a standard deviation of 0.005174 which is a low rate of deviation and it almost shows no change in value one year after.

Portfolio of CC and BBB- rated bond

Table 9
Portfolio 3

Current value	1.59
Expected Value	1.310416
Standard deviation	0.130317

This portfolio shows a standard deviation of 0.130317 which is relatively larger dispersion considering the other portfolios. It also shows a significant decrease in the value in a one-year period.

Portfolio of C and BBB- rated bond

Table 10
Portfolio 4

Current value	1.46
Expected Value	0.973273
Standard deviation	0.054

This portfolio shows a standard deviation of 0.054 shows low rate of dispersion but the expected value will most likely reduce in a one-year period.

Portfolio of CCC and BBB- rated bond

Table 11
Portfolio 5

Current value	1.64
Expected Value	1.439701
Standard deviation	0.102126

This portfolio shows a standard deviation of 0.102126 which indicates a larger dispersion accompanied with a significant decrease in value of bonds one year down the line.

Portfolio of B- and BBB- bond

Table 12
Portfolio 6

Current value	0.87
Expected Value	1.104873
Standard deviation	0.146214

This portfolio shows a standard deviation of 0.146214 which is relatively larger dispersion considering the other portfolios. But it also indicates an expected rise in its value one year forward.

Portfolio of B and BBB- rated bond

Table 13
Portfolio 7

Current value	1.68
Expected Value	1.648511
Standard deviation	0.027362

This portfolio shows a standard deviation of 0.027362 is much more stable portfolio where there is also not much change in value one year forward.

Portfolio of B+ and BBB- rated bond

Table 14
Portfolio 8

Current value	1.69
Expected Value	1.662119
Standard deviation	0.029094

This portfolio shows a standard deviation of 0.029094 indicates very low variation from expected value one year forward.

Portfolio of BB- and BBB- rated bond

Table 15
Portfolio 9

Current value	1.7
Expected Value	1.703761
Standard deviation	0.004739

This portfolio shows a standard deviation of 0.004739 indicates low variation and there is no significant expected change in future.

Portfolio of BB and BBB- rated bond

Table 16
Portfolio 10

Current value	1.72
Expected Value	1.722273
Standard deviation	0.004615

This portfolio shows a standard deviation of 0.004615 indicates low variation and there is no significant expected change in future.

Portfolio of BB+ and BBB- rated bond

Table 17
Portfolio 11

Current value	1.73
Expected Value	1.699427
Standard deviation	0.029445

This portfolio shows a standard deviation of 0.029445 indicates low variation but there is minute change in expected future value.

Portfolio of BBB+ and BBB- rated bond

Table 18
Portfolio 12

Current value	1.79
Expected Value	1.78863
Standard deviation	0.005476

This portfolio shows a standard deviation of 0.005476 indicates low variation and there is no significant expected change in future.

Portfolio of A- and BBB- rated bond

Table 19
Portfolio 13

Current value	1.8
Expected Value	1.802439
Standard deviation	0.004965

This portfolio shows a standard deviation of 0.004965 which is relatively larger dispersion considering the other portfolios.

Portfolio of A and BBB- rated bond

Table 20
Portfolio 14

Current value	1.81
Expected Value	1.81739
Standard deviation	0.005675

This portfolio shows a standard deviation of 0.005675 indicates low variation and there is no significant expected change in future.

Portfolio of A+ and BBB- rated bond

Table 21
Portfolio 15

Current value	1.82
Expected Value	1.821051
Standard deviation	0.0042

This portfolio shows a standard deviation of 0.0042 indicates low variation and there is no significant expected change in future.

Portfolio of AA- and BBB- rated bond

Table 22
Portfolio 16

Current value	1.83
Expected Value	1.833898
Standard deviation	0.005032

This portfolio shows a standard deviation of 0.005032 indicates low variation and there is no significant expected change in future.

Portfolio of AA and BBB- rated bond

Table 23
Portfolio 17

Current value	1.84
Expected Value	1.840242
Standard deviation	0.004225

This portfolio shows a standard deviation of 0.004225 indicates low variation and there is no significant expected change in future.

Portfolio of AA+ and BBB- rated bond

Table 24
Portfolio 18

Current value	1.85
Expected Value	1.851368
Standard deviation	0.004632

This portfolio shows a standard deviation of 0.004632 indicates low variation and there is no significant expected change in future.

FINDINGS

- It was found that sovereign bonds do hold up the position of a form of risk free form of asset.
- It was found when a BBB- bond was combined with C rated bonds (C, CC, CCC) there was much variation in dispersion as well as showed a significant decrease in value comparing to others.
- It was found when a BBB- rated bonds were combined with A (A, AA, AAA) rated bonds the measure of dispersion was very less and the there is no significant change in value looking one year forward.
- It was found that portfolio of C and BBB- bond projected the largest decline in value one year forward from current period.
- Portfolio of B- and BBB- had shown larger amount of dispersion but it was a positive prospect of the future which is an increase in value.
- It was found that countries who went into default were able to get out of default with various government interventions.

SUGGESTIONS

- Risk-Free Assets: Sovereign bonds are a solid type of risk-free asset. Investors seeking for a low-risk investment alternative might consider integrating sovereign bonds in their portfolio to protect their capital and reduce risk.
- Diversification Strategy: When BBB-rated bonds were combined with C-rated bonds (C, CC, CCC), the value decreased significantly and the dispersion increased. Investors can consider diversifying their bond portfolio by combining bonds from higher-rated categories (A, AA, AAA) with BBB-rated bonds to mitigate this risk. This diversification technique can assist reduce dispersion fluctuation and increase portfolio stability.
- Portfolio Stability: Combining BBB-rated bonds with A-rated bonds (A, AA, AAA) resulted in less dispersion and no significant change in value one year out. Investors looking for stability and somewhat constant return can consider combining these bonds in their portfolio.

- Risk-Return Tradeoff: It was discovered that a portfolio of C and BBB-rated bonds projected the greatest value decrease one year ahead. If the possible value fall outweighs the expected gains, it may be prudent to reconsider include these bonds in the portfolio.
- Favourable Future Prospect: A portfolio of B- and BBB-rated bonds showed more dispersion but also a favourable future value rise prospect. Investors who are willing to take on more risk in exchange for potentially better rewards may consider putting these bonds in their portfolio.
- It is always suggestable that an investor may not only look at overall economy's credit rating but also individual bond's credit rating as it provides much clearer picture.

CONCLUSION

Credit Transition Matrix is one of methods through which credit risk existing in a sovereign bond can be ascertained. This has enabled for greater precision on the credit risk estimation for investors to decide upon which sovereign bonds to invest. The investors can look upon these probabilistic values and analyse the risk that is present and modify the portfolio accordingly. These sovereign bonds are not as risk free cause any country may go into default due to its financial characteristics. Thus investors should consider the threat before going for investment. The transition matrix should only be used as a guide to assess the credit ratings given by an agency other factors such as foreign exchange rate and all also influence the bond pay up rate.

REFERENCES

Ambrose, B. W., & Yuan, Z. (2018). PRICING GOVERNMENT CREDIT: A NEW METHOD FOR DETERMINING GOVERNMENT CREDIT RISK EXPOSURE. Economic Policy Review - Federal Reserve Bank of New York, Suppl. SPECIAL ISSUE: THE APPROPRIATE ROLE OF GOVERNMENT IN U.S.MORTGAGE MARKETS, 24(3), 41. https://www.proquest.com/trade-journals/pricing-government-credit-new-method-determining/docview/2161594834/se-2

Banerjee, T. S. (2018). Credit Risk Management in Bank. RIMS Journal of Management, 3(1), 12-17. https://www.proquest.com/scholarly-journals/credit-risk-management-bank/docview/2449285176/se-2

Becker, K. G., Finnerty, J. E., & Kopecky, K. J. (1996). MACROECONOMIC NEWS AND THE EFFICIENCY OF INTERNATIONAL BOND FUTURES MARKETS: INTRODUCTION. The Journal of Futures Markets (1986-1998), 16(2), 131. https://www.proquest.com/scholarly-journals/macroeconomic-news-efficiency-international-bond/docview/225473370/se-2.

Capeci, J. (1991). CREDIT RISK, CREDIT RATINGS, AND MUNICIPAL BOND YIELDS: A PANEL STUDY: ABSTRACT. National Tax Journal (1986-1998), 44(4), 41. https://www.proquest.com/scholarly-journals/credit-risk-ratings-municipal-bond-yields-panel/docview/207462084/se-2

Çelik, S. (2013). MICRO CREDIT RISK METRICS: A COMPREHENSIVE REVIEW. Intelligent Systems in Accounting, Finance and Management, 20(4), 233. https://www.proquest.com/scholarly-journals/micro-credit-risk-metrics-comprehensive-review/docview/1471911052/se-2

Chava, S., Ganduri, R., & Yerramilli, V. (2021). Do Bond Investors Price Tail Risk Exposures of Financial Institutions? The Quarterly Journal of Finance, 11(1)https://doi.org/10.1142/S2010139221500038

Cossin, D., Hricko, T., Aunon-Nerin, D., & Huang, Z. (2002). Exploring for the Determinants of Credit Risk in Credit Default Swap Transaction Data: Is Fixed-Income Markets' Information Suffcient to Evaluate Credit Risk?. Federal Reserve Bank of St Louis.

Dworin, J. (2017). Credit Risk Remains a Steady Threat in Any Economic Cycle. Ceramic Industry, 167(12), 14-16. https://www.proquest.com/trade-journals/credit-risk-remains-steady-threat-any-economic/docview/2049663661/se-2

Fletcher, J., Paudyal, K., & Santoso, T. (2019). Exploring the benefits of international government bond portfolio diversification strategies. The European Journal of Finance, 25(1), 1-15. https://doi.org/10.1080/1351847X.2018.1450279

Gilchrist, S., Yue, V., & ZAKRAJŠEK, E. (2019). U.S. Monetary Policy and International Bond Markets. Journal of Money, Credit, and Banking, 51, 127-161. https://doi.org/10.1111/jmcb.12667

Kao, D. (1990). Quantitative credit risk assessment (credit risk modeling). Journal of Cash Management, 10(7), 26. https://www.proquest.com/trade-journals/quantitative-credit-risk-assessment-modeling/docview/225963590/se-2

Kaur, U., & Sharma, R. (2019). Liquidity Risk and Credit Risk: Impact on Banks. SCMS Journal of Indian Management, 16(2), 30-42. https://www.proquest.com/scholarly-journals/liquidity-risk-credit-impact-on-banks/docview/2306077367/se-2

Kirikkaleli, D., & Ozun, A. (2019). Co-Movement of Political Risk and Sovereign Credit Risk: A Wavelet Coherence Analysis for Argentina, Brazil, and Venezuela. Social Science Quarterly, 100(6), 2094-2114. https://doi.org/10.1111/ssqu.12709

Martin, T., Blix, G., & Calcagno, J. C. (2012). Consumer Credit Metrics and Their Application to the ABS and RMBS Markets. Journal of Structured Finance, 17(4), 196-204,10. https://www.proquest.com/scholarly-journals/consumer-credit-metrics-their-application-abs/docview/1033046903/se-2

Nguyen, H. V. (2018). Hedging and hedging effectiveness under required disclosures: a study of the impact of derivatives use on capital investment. Journal of Economics and Finance, 42(3), 471-491. https://doi.org/10.1007/s12197-017-9399-5

Rodriguez Gonzalez, M., Kunze, F., Schwarzbach, C., & Dieng, C. (2017). Asset liability management and the euro crisis: Sovereign credit risk as a challenge for the German life insurance industry. The Journal of Risk Finance, 18(4), 466-483. https://doi.org/10.1108/JRF-01-2017-0016

KICMA - REACH • ISSN 2395-0293
Peer Reviewed Journal of Commerce & Management
VOL. 9 • NO. 1
JAN-JUN 2023

Professional Development and Training in Educational Institutions: A Study among the Teachers

Ms. Chinchu B.S.

INTRODUCTION

Training is the organized procedure which moulds the employees to improve their knowledge and skill and achieve individual goals. It attempts to groom their performance on the current job or prepare them for prospective roles in the career. The employees of the organization must be trained for the better performance. The Indian education commission for the first time put forward a suggestion for the training of the teachers and it started in the year 1881-82. The Kothari Commission Report Government of India (1968) had observed

"among all the factors that influence the quality of education, the quality, competence and character of teachers are undoubtedly the most significant". But these in turn depend subsequently on the quality of training and other support provided to them. Few years from now, facilities for training of teachers have grown manifold. The number of trained teachers has increased because of an expansion in facilities and training as a compulsory perquisite for teaching profession. Expansion in training facilities, helped to bring about an increase in the number of trained teachers. Teacher training is an integral component of any educational system. It is blended with society, culture and character of nation. Teacher training is very necessary because it creates necessary awareness among teachers about their new roles and responsibilities. Formal professional training on a continuous basis is necessary for becoming a good teacher as it caters to the development one's personality and sharpening of communication skills and commitment to a code of conduct. Training has to be conceived as an integral part of educational and social system and must primarily respond to the requirements of the school system. Professional development programmes are meant for updating and broadening the knowledge and skills of teachers. Apart from broadening knowledge and skills, professional development programmes are also conducted to facilitate educational reforms, to make teachers perform new functions and for larger school development. Teacher professional development can happen either in a centralized or decentralized way. In a centralized mode the state plays the main role while in decentralized model other agencies like the Universities play an important role.

STATEMENT OF THE PROBLEM

Professional Development of teachers play an important role in the educational sector. The Government is investing lot of money for training and development. If proper training is not given to the teachers it

Chinchu B.S., Assistant Professor in Management, University Institute of Technology, Neyyattinkara, University of Kerala

will have a direct effect on the quality of the students. The present study aims to understand the quality of the training imparted to teachers and how far the objectives of the training are met once the training is completed. The role of the teachers has changed remarkably from mere teaching to the role of a facilitator. If there are any flaws in the system it will definitely the students negatively. Teachers apart from teaching also are entrusted with several other non-academic responsibilities. The present study tries to analyse the effect of training on both trainees and trainers. Along with that the study also tries to identify the multiple roles performed by teachers.

OBJECTIVES OF STUDY

1 To find out the satisfaction levels of the trainers on the existing teacher's training system

2 To find out the impact of training on professional development of teachers

RESEARCH METHODOLOGY

Research methodology is the way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. We study the various steps that are generally adopted by a researcher in studying his research problems along logic behind them. The methods for study include collection of data from various sources such as primary source and secondary source.

Research design

The study is descriptive in nature and has adopted a cross-sectional research design. Data collected from the primary and secondary sources. Primary data was collected from both trainers and trainees. The following methods were used for primary data collection: Questionnaire Interview schedule The main sources of secondary data are: Annual reports of schools School magazines Annual reports of BRCs Training reports of BRCs.

REVIEW OF LITERATURE

Martina. P. Neininger and Almuth Kaune (2016) in their study they provided pre-school teachers with training that addressed practical skills in the administration of rescue medication in children epilepsy. Training took place in each of the participating pre-schools. Each training, 1-2 participants were selected by chance out of the attending pre-schools teachers and invited to take part in the assessment of their practical skills. A training concept for pre-schools teachers provided their level of self confidence and their ability to administer an ant conclusive rescue medication and therefore enhances the safety of children with epilepsy in Pre-schools. In his observation soft ware's used in teacher training is very useful for the development the knowledge and skills in the technological area. Especially video annotation tools is used for the teacher observes their own academic expense through this tool and they reflect on it in the classroom. It is a tool used by both teacher training and research.

Saad F. Shawar (2016) he observed that recently the attention of training focused on the soft skill development of teachers. In teacher education cognitive skill includes subject knowledge, teaching skill and curricular knowledge. Soft skill also includes problem solving, teamwork, leadership and thinking skills. Soft skills are becoming vital for 21st century academic and career success as they influence Personnel development active and independent learning and employment success. The soft skill training is need for teacher education and teaching quality and student learning outcomes are the major changing agent, the skills are communication skill, relationship and collaboration, and critical thinking and decision making. Relationship and collaboration skill are essential for career success, teachers more than other professionals need them to achieve effective collaboration with and other subjects colleagues. Experienced teachers had the ability to develop curriculum more than novice teachers.

THEORETICAL FRAMEWORK

Training and development is essential to cop up with and even surpass the challenges posed by the environment. So that organization can remain competitive and stays in business. Training and development is vital part of the human resource development. It is assuming ever important role in wake of the advancement of technology which has resulted in ever increasing competition, rise in customer's expectation of quality and service and a subsequent need to lower costs. It is also become more important globally in order to prepare workers for new jobs. In the current write up, we will focus more on the emerging need of training and development, its implications upon individuals and the employers. The main aim of training is to help the organization achieve is to objectives by adding value to its key assets-the human resources.

Training means investing in human resources to enable them to make the best use of their natural abilities.

Training and can be initiated for a variety of reasons for an employee or group of employees.

The main objectives of training are:

1. To improve performance on the job for enhanced contribution to organizational goals and objectives.
2. To 'benchmark' the status of improvement with regard to a performance improvement efforts.
3. To facilitate overall professional development of employees for increased job satisfaction and productivity.
4. To assist organizations in succession planning to help an employee be eligible for planned change in role in the organizations. 5. To 'pilot', or, test the operation of a new performance management system.
6. To develop organization specific skills and competencies, which is otherwise scarcely or not at all available in the human resources market.

NEED OF TEACHER TRAINING

Keeping in view the inadequacies of teacher education programmes, NOTE (2009) prepared a frame work for teacher education and called for drastic changes starting from the very conception of teacher education, its objectives, content and methodology. Keeping in view the vision of teacher education as per global standards, the following remarks relating to a teacher's role, and the philosophy, purpose and practice of teacher education can be made (NCFTE, 2009):

- Teacher need to be prepared to care for children, enjoy to be with them, seek knowledge, own responsibility towards society and work to build a better world, develop sensitivity to the problems of the learners, commitment to justice and zeal for social reconstruction.
- Teachers need to view learners as active participates in their own learning and not as mere recipients of knowledge; need to encourage their capacity to construct knowledge, ensure that learning shifts away from rote methods.
- Teacher education should integrate academic knowledge and professional learning into a meaningful whole.
- Teacher education programmes need to help teachers appreciate the potential of hands-on- experience as a pedagogic medium both inside and outside the classroom; and work as integral to the process of education.
- Teachers need to re-conceptualize citizenship education in terms of human rights and approaches of critical pedagogy; emphasize environment and its protection, living in harmony with oneself and with natural and social environment; promote peace, democratic way of life, constitutional values of equality, justice, liberty, fraternity and secularism, and caring values.

DATA ANALYSIS AND INTERPRETATION

Satisfaction Level of Trainers on The Existing Training Method

	Responds				Total
	Strongly agree	Agree	Neutral	Disagree	
Educational district Thiruvananthapuram	24	53	2	1	80
	24.0	53.0	2.0	1.0	80.0
	30.0%	66.2%	2.5%	1.2%	100.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Above table indicates the trainers' opinion about the existing training methods provided to the teachers. Majority of trainers opined that existing training methods are best for the teachers, through the training they can improve their career and profession. Training can improve lot of things in Teaching as a profession,. 66.2 percentage of trainers agreed that the existing training methods are good for developing teachers capability and 30 percentage trainers strongly agreed that existing methods are very good for the skill and professional development of the teachers. The area of concern for the trainers is there is there is high rate of absenteeism among the trainers. On analysis of that variable it is found that about 66 percentage of the trainers rated that this is a major problem in training. Along with that other variable which has got an effect on the quality of the training is the existing infra structure facilities. There is lack of infra structure facilities for extending proper training to the trainees.

The Impact of Training, On Educational Institutions

	Training helps for development of schools				Total
	Strongly agree	Agree	Neutral	Disagree	
Thiruvananthapuram educational district	69	187	80	14	350
	69.0	187.0	80.0	14.0	350.0
	19.7%	53.4%	22.9%	4.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	100.0%

The teacher training programme has made majority of the teachers acquire different capabilities of capacity to create nurturing atmosphere in the class in the order of seeking help from more experienced teachers, seeking help from school head and use of individual capacities to create nurturing atmosphere in the school.

It has been effective to develop the different capabilities of capacity to make school education effective in the order of fruitful discussion with school head, organizing educational activities with active involvement of society, improving own present knowledge and skills, and sharing classroom experiences with the colleagues. Teacher training programme has been effective to make large majority of the teachers able to develop the capacity component of capacity building to work in collaboration to make school a 'Model Institution'.

FINDINGS

1. The major findings of the study are professional development is possible through the training. The trainers provide subject oriented training, technology oriented training, soft skill training, IT training to trainees as part of professional development.

2. The main positive impact of training is the teachers can scientifically evaluate the students. Through this scientific evaluation the teachers can evaluate students and can find out mechanisms to increase academic efficiency of students and develop them accordingly.
3. Technological training are given to teachers which help them in capacity building. They develop their capacity to create good students from the schools, increase their competence for giving creating or challenging task for the students. Through the training the teachers can contribute to the school as well as to the students.
4. On analysis it is found that there exists a relationship in training system between private and government schools. From last two years onwards the private school teachers are attending the training programmes conducted by the BRCs. So they are able to attend training programmes organized by school as well as other institutions.
5. Other findings of the study are teachers are doing many activities other than teaching. That includes club activities, co-ordinating programmes, SPC, NSS, NCC etc. In every school one teacher has more than one charge of activities so they don't have sufficient time for teaching. Now teaching has taken a secondary role in schools. Some teachers are assigned with clerical works in the office.
6. The infrastructure facilities provided are not sufficient. Basic classrooms facilities are lacking , sufficient projector, etc.

CONCLUSION

Teacher training becomes a very important area for the education sector. A large amount of investment is being done by the Government to train the teachers. From the study it is evident that the teachers and trainers are generally satisfied with the existing training methods. The study has taken in to account the various aspects like the factors that hinder the effectiveness of the training. The trainers opined that lack of infrastructure facilities is a major drawback for the training. One more apprehension is the absenteeism of the trainees. The trainers are of the opinion that this kind of behaviours will dilute the quality of the training. The trainees also share the same opinion of lack of infra structure facilities. They have several other complaints regarding the training. The major include the timing of the training, competency of the trainer, DA for the trainees etc. Both private and Government schools teachers are given more or less same type of training. The teachers are given non-academic duties along with the academic responsibility. From the study it is found that the teachers are doing non-academic activities as a regular activity. They include club activities, mentoring programmes, SPC, NSS, NCC, clerical duties etc. Teaching must be the priority in educational institutions because the teachers are grooming the next generation of productive work force.

REFERENCES

A P. Sexena (2000) Vol.XX1, No 3 July - September Administration and citizen Indian journal of public administration,

A study of middle (2001) Year's research and development project

A. P. Sexena (edited) (2003) Training in government objective and opportunities Indian institute of public administration indraprastha estate ring road, New delhi-110002

B. J Chacko (2005) Training role of national academy of direct taxes Book craft publishing services (1) Pvt limited.

Brijkishore Dayal (2013) Educationa planning &development China Translation & printing service limited

KICMA - REACH • ISSN 2395-0293 | VOL. 9 • NO. 1
Peer Reviewed Journal of Commerce & Management | JAN-JUN 2023

A Study on the Factors Affecting the Promotion of Diversity, Equity, and Inclusion in it Sector in Kerala

Ms. Nanda Ramesh[1], Dr. Mithra Manmadhan[2] & Ms. Nima Ravi[3]

Abstract

Diversity, equity, and inclusion (DEI) are critical to establishing and maintaining a successful workplace that is based on the belief that all individuals can prosper personally and professionally. This study was conducted to analyse the factors affecting the promotion of diversity, equity and inclusion in IT sector in Kerala. This study helps to understand how leadership, plans and policies, unconscious bias, employee engagement and organisation culture impacts the Diversity Equity And Inclusion in an organisation. Purposive sampling was employed to gather the data from 145 employees who are working in IT sector in Kerala. The data was collected through a questionnaire, which were circulated with the help of social media. The study concluded leadership, plans and policies, unconscious bias, employee engagement, and organisation culture has an impact on the promotion of diversity, equity and inclusion in IT sector in Kerala.

Keywords: Diversity, Equity, Inclusion, Leadership, Unconscious bias

INTRODUCTION

The promise of a brand-new future distinguishes the technology business from others. However, as forward-thinking as the sector can be, it still suffers from stagnation in other areas, particularly in terms of the demographics of its most important players.

If tech businesses want to develop an industry that truly looks to the future, they must include DEI into their core beliefs. DE&I stands for diversity, equity and inclusion. The presence of differences within a given setting is defined as diversity. Equity is the process of ensuring that systems and programmes are unbiased, fair, and produce the best possible outcomes for all individuals. Inclusion is the technique of making sure that employees have a sense of belonging in the workplace.

Diversity, equity, and inclusion (DEI) are critical to establishing and maintaining a successful workplace that is based on the belief that all individuals can prosper personally and professionally. If the tech sector truly wants to be a place where innovation and invention thrive, diversity, equity, and inclusion must take centre stage. Employers must very actively work to create a change in organisation instead of repeating the history of misinterpretation and injustice and marginalising the underrepresented.

1. *Ms. Nanda Ramesh, CET School of Management, College of Engineering Trivandrum, Kerala- 695017*
2. *Dr. Mithra Manmadhan, Assistant Professor, CET School of Management, College of Engineering Trivandrum, Kerala- 695017*
3. *Ms. Nima Ravi, Assistant Professor, CET School of Management, College of Engineering Trivandrum, Kerala- 695017*

DEI is an ethos that values different viewpoints and prioritises equity and inclusion and employee well-being as critical success factors. To bring those ideals to life, businesses must develop programmes and activities that actively make their workplaces more diverse, equitable, and inclusive.

The presence of differences in a given setting is referred to as diversity. This can include inequalities in colour, ethnicity, gender, gender identity, sexual orientation, age, and socioeconomic level in the workplace.

Equity is the process of making sure that systems and programmes are unbiased, equitable, fair and produce the best outcomes for all individuals. We work for equity. People frequently select an employer based on factors that boil down to equity. Inclusion is the process where employees feel a sense of belongingness. It's not just about inviting everyone; it's about ensuring that everyone knows and feels welcome at the organisation.

Diversity contributes to a level of innovation. People bring a different framework to the organisation that empowers them to tackle situations in a different way and provide innovative solutions. The more diverse the contribution in your organisation, the better your business outcomes will be. To provide fair opportunities to all the employees in the organisation, companies must understand both hurdles and advantages. This is the critical difference between "equity" and "equality."

Equity considers the fact that not everyone begins at the same level. Inequity affects all aspects of your business, necessitating monitoring and prompt response. Human Resource professionals must take the work to get an idea on how we can go above to create an equitable organisation for everybody. While professionalism and politeness are required in the workplace, an inclusive atmosphere should not prevent individuals from being themselves.

Diversity is maintained through inclusion. Employees will just leave the organisation if it does not have it. People want to belong, plain and simple, and marginalised people want to know that they will not be the token person to represent a population. They shouldn't have to worry about it at work; instead, they should concentrate on how they can make a difference within the organisation.

A diverse, equitable, and inclusive environment generates a sense of belonging among employees. Employees who are more engaged at work tend to work harder and smarter, resulting in higher-quality work. As a result, organisations who adopt DE&I techniques see significant improvements in terms of business results, innovation, and decision-making. Employees become more occupied when they feel included in the organisation. Employees who are highly engaged aspire to go above and above for the organisation. This greater participation affects revenue, employee morale, and retention. Employees who work in inclusive environments have greater physical and emotional health and use fewer sick days. Employee attitudes regarding organisations are shifting as the number of employees grows. As a result, it is critical to comprehend employees' perspectives on diversity, equity, and inclusion. As a result, the purpose of this research is to learn about employees' perspectives of DE&I and how it is

REVIEW OF LITERATURE

O'Donovan (2018) in their research study, suggested that firms consider implementing modern diversity practises, which include diversity practises geared at inclusiveness. According to this study, no two employees are alike. The two people may be different in age, gender, experience, skill, and ethnicity. The study also proposed that firms embrace diversity practises in order to manage a varied workforce, and that organisations may face a variety of challenges in managing a diverse workforce. One of the primary challenges can be educating managers to deal with such diversity issues. As a result, it is vital for each level of the business to embrace a varied workforce based on their skills, expertise, and talents.

According to Kaur & Arora (2017), the position of gender diversity in Indian organisations is improving as firms begin to recognise the benefits of gender diversity and inclusion. Cultivating gender, sexual orientation, regional, and generational diversity and inclusion in the workplace has become a success recipe for incredibly creative, inventive, devoted, and successful firms all over the world.

Philip & Soumyaja (2011) in their research indicated that multicultural organisations have a positive effect on employee innovation and efficiency, while inclusion necessitates the acceptance, acknowledgement, appreciation, and celebration of differences in terms of age, gender, race, gender, mental capacity, and spiritual practises. A company's diversity policies are mainly limited to women and individuals with disabilities; unfortunately, sexual minorities, including transgender people, are rarely receivers of such policies.

Kulkarni et al. (2016) explained diversity, equity and other practises in Germany and India. Organisations typically follow similar practises: first, organisations regard employees as assets and a talent pool; second, organisations implement inclusion practises holistically (that is, the inclusion effort is a collaborative effort of both top management and employee groups); and third, organisations build networks with external resources such as NGOs to maintain their resource capacities. Inclusion attempts with government assistance are more frequent in parts of Germany than in India.

Fapohunda (2015) investigated female employees' lack of employee voice in general. According to the study, female workers are frequently found silent. Organizations should look for some voice mechanism that can suit the needs of female workers in the organisation. The author also suggested that the HR department and HR manager build a framework for encouraging female workers' expression of voice in order to create a varied organisation that is both equitable and inclusive.

Ali et al. (2015) indicated that gender diversity improves employee turnover in organisations. It went on to say that gender diversity strategies help organisations retain their personnel. It means that employees feel valued when organisations accommodate gender diversity and so reduce employee turnover, establishing an inclusive atmosphere for employees of different genders.

Dhakal et al. (2018) stated that workers who are exposed to job discrimination because of their unique needs. The study was carried out to better understand human rights and potential solutions for include such workers. According to the report, vulnerable workers feel concerned and uncertain about their protective rights. They are frequently stereotyped and discriminated against based on their age, status, gender, and skill profiles. The study's findings found that vulnerable workers generally suffer in their personal and familial lives, resulting in bad job quality and uneven or low salaries.

Bernstein et al. (2015) discussed on how learning and understanding social identity distinctions may help organisations create a diverse and inclusive culture. Gender, race, ethnicity, skills, and knowledge variations can all contribute to these disparities. According to the findings of the study, social identities aid in understanding an individual's distinctiveness and in maintaining social identity connections inside the organisation.

Bohm et al. (2016) identified that age-inclusive HR practises may include age-diverse recruiting procedures, equal access to training for all age groups, and career and promotion systems devoid of age-related biases. Such HR approaches have been found to promote an age-inclusive business culture. Organizations must teach leaders about age diversity in the workplace in order to promote such practises.

Managing and understanding diversity is an important aspect of effective people management, which can boost workplace efficiency. Unmanaged workplace diversity may become a hurdle to attaining business goals. As a result, variety might be viewed as a "two-edged sword." In an academic environment, diversity can refer to origin, race, gender, ethnic group, language, colour, attitude, values, beliefs, and religion. (Rau and Hyland, 2003)

Dike (2013) has mentioned that worker diversity is a major issue that most firms encounter. Employees from distinct socio-cultural backgrounds or from other firms with different work cultures may find it challenging to adjust to the changes required to sustain in the new organisation. Any change in policy makes it more difficult for them to remain committed to their work. This could result in an ineffective workforce. However, while creating a diverse workforce has many benefits, it will not function successfully if sufficient monitoring and mentorship are not in place.

Rohwerder (2017) stated that a more objective depiction of women and minorities may help social justice considerations. Some negative effects of workplace diversity include increased absenteeism, lower employee attachment, increased conflict, and increased prejudice. Diversity management has been shown to boost organisational performance and has become more popular in the commercial sector. It benefits employees by increasing the productivity of work groups.

Tlaiss (2011) stated the issue of inclusive work culture and its advantages across the business. In an organisation, an environment that fosters unity, equity, and a pleasant attitude should be fostered. As in every firm, creating a positive work atmosphere is essential. However, in order to create a positive working atmosphere, several factors must be considered. The most challenging element is adjusting to new working styles and environments. It was also shown that organisations that can adapt to change are better able to act promptly in a changing environment.

Another topic that requires attention from organisational policymakers is workforce diversity. Under this strategy, each organisation should identify the cultural hurdles that their employees face and address them appropriately. A sufficient training framework can be set up to assist staff in understanding the organization's policies and operations (BBI Report, 2008).

Saxena (2014) stated that worker diversity as a crucial to increasing productivity. The author defines diversity as "the similarities and contrasts among personnel of an organisation in terms of age, cultural background, physical disability, race, religion, gender, and sexual orientation." The concept of diversity often results in a varied workplace. Any firm must hire a diverse workforce and people from various cultural backgrounds in order to boost production and profitability. Organizations must hire cross-cultural personnel as a result of rising globalisation; however, it is extremely difficult for individuals to adjust to and regulate in a new environment and culture.

Employee performance, according to the authors, has a variety of effects on organisational effectiveness. Organizations can get numerous benefits from diversity. To understand the changes, inclusive workplaces considered by helpful leadership and permitted personnel are essential. Organizations will be prosperous if their organisational culture favourably supports their personnel. (Hameed et al., 2011)

Shaheen et al. (2013) addressed the specific challenge of imagining the significance of inclusive training for employees and analysing the relationship between the training and their performance. The most common barrier to diversity training is time, and when combined with organisational right-sizing, the challenge of training delivery becomes more difficult. Many firms have policies in place concerning equality and human rights, working conditions, workplace decorum, employee well-being, and fair recruitment and procurement processes.

Aghazadeh (2004) mentioned that managing workforce diversity is an important resource for increasing organisational performance and also emphasises the necessity for managers that are sensitive to diverse personnel.

Shani et al. (2005) noted that labour diversity and organisational culture are commonly blamed for a variety of positive and negative issues A deeper knowledge of the notion would enable employees in businesses to increase the quality of leadership, solve challenges, and improve performance. Diversity issues are now deemed essential and are expected to become much more so in the future due to rising differences in the population of many countries. Companies must prioritise diversity and seek ways to become fully inclusive workplaces since diversity has the potential to increase productivity and competitive advantage.

Gentry et al. (2014) claimed that leadership is the most crucial aspect in all organisations, but it is becoming more difficult owing to the intervention of globalisation, technological advancement, and diversity management. As the demand for knowledge-based businesses grows, it is the responsibility of both employees and managers to improve the success of workplace learning and workforce development.

McLeod and Lobel (2016) discussed that diversity is crucial in organisational culture growth, creativity, and innovation because it can be difficult to gain fresh ideas from diverse teams with the same concept and working attitude. To accomplish development and innovation, firms must design plans, policies, and programmes that can be used in company partnerships, mergers, and acquisitions without any border limitations. Furthermore, these firms require a diverse workforce to operate efficiently, which can be achieved by hiring, training, and keeping individuals from varied backgrounds, regardless of colour, gender, age, ethnicity, nationality, language, religion, functional, educational, or disability (Kumar et al.,2011).

Developing a deeper grasp of workforce diversity and its management is especially crucial in cross-cultural contexts when individuals from various cultural origins work together and executives face the difficulty of managing employees with distinct beliefs and interests (Green et al. 2002).

Unconscious biases are cultural preconceptions regarding specific groups of people formed by people without their knowledge. Everyone has implicit prejudices regarding different social and identity groups that stem from the drive to organise social worlds through categorization. Acceptance, awareness, understanding, and celebration of diversity in age, gender, colour, gender, mental capacity and spiritual practises are all required for inclusion (Philip & Soumyaja, 2011).

Employee engagement, an important aspect of any organisation is a workplace approach that creates the opportunity for all employees to give their best every day, to be dedicated to the organization's goals and values, to be driven to contribute to organisational success, and also to have a stronger sense of personal well-being. Employee engagement and diversity equity and inclusion as a HRM components have a link (Hossain et al., 2016).

In association with the objectives of the study, the following can be the hypothesis:

H_1: Leadership, plans and policies, unconscious bias, employee engagement and organisational culture have a significant impact on the promotion of diversity, equity and inclusion in IT sector

RESEARCH DESIGN

The primary data was collected using survey method using a well-designed questionnaire filled out by selected respondents working in IT sector. Employees from IT sector as a whole from up the population for the present study. The study used a sample of 145 employees selected through purposive sampling from various IT companies. The collected data was analysed using multiple regression to test the hypothesis framed for the study.

ANALYSIS AND DISCUSSION

The demographic profile of the respondents is given in Table 1.

Table 1
Demographic Profile

CATEGORY	FREQUENCY	PERCENTAGE
Age group		
18-30	68	47.22
31-41	77	52.77
Above 41	0	0
Gender		
Male	136	94.44
Female	9	5.55
Educational qualification		
Graduation and below	4	2.08
Post graduate	99	68.75
professionals	42	29.16
Marital status		
Married	47	68.56
Unmarried	98	31.34

Source: Primary Data

H_0: Leadership, plans and policies, unconscious bias, employee engagement and organisational culture does not have a significant impact on the promotion of diversity, equity and inclusion in IT sector.

H_1: Leadership, plans and policies, unconscious bias, employee engagement and organisational culture have a significant impact on the promotion of diversity, equity and inclusion in IT sector.

The above hypothesis was tested using multiple regression, to understand the impact of the identified independent variables on diversity, equity and inclusion, the results of whch are shown in Table 2.

Table No 2
Regression Analysis

Table 2a: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.941[a]	.886	.882	.302	.886	236.595	5	152	.000

Table 2b: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	107.930	5	21.586	236.595	.000[b]
Residual	13.868	152	.091		
Total	121.797	157			

a. Dependent Variable: D E AND I

b. Predictors: (Constant), OC, UB, PP, LS, EE

Table 2c: Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig. Tolerance	Collinearity Statistics	
	B	Std. Error	Beta			VIF	
(Constant)	-1.692	.243		-6.971	.000		
LS	.402	.065	.275	6.186	.000	.379	2.636
P&P	.242	.069	.120	3.528	.001	.643	1.554
UB	.131	.047	.078	2.810	.006	.982	1.018
EE	.193	.075	.126	2.596	.010	.317	3.151
OC	.650	.067	.532	9.679	.000	.248	4.032

a. Dependent Variable: DE & I

From the results of regression analysis, performed between the relationship of leadership, plans and policies, unconscious bias, employee engagement, organisational culture and Diversity Equity and Inclusion of current employee of IT Sector, it is observed that the R value is 0.941 and adjusted R square value is 0.882 which means 88% of the variation in the dependent variable is explained by the independent variable (Table 2a).

The ANOVA table (Table 2b) shows that the significance value is <0.001, so the study rejects null hypothesis. Hence it can be concluded that there is a significant relationship between leadership, plans and policies, unconscious bias, employee engagement, organisational culture and Diversity Equity and Inclusion of employees of IT Sector.

The regression is as follows:

Diversity Equity and Inclusion = -1.692 + 0.402* Leadership + 0.242 * Plans and policies+ 0.131*Unconscious bias + 0.193*Employee Engagement+ 0.650*Organisational culture

CONCLUSION AND IMPLICATIONS

The IT industry faces several challenges in obtaining diversity equity and inclusion in work place. Tech professionals try to resolve many complex problems but many of them fail to include diverse workforce in to their organisation. Underrepresentation of workers from other sections of the society like people with disabilities or from certain community is a major problem faced by most of the organisations. Organisations are still trying to fill this gap by bringing up more diverse workforce and treating them with equity so that the idea of a diverse equitable and inclusive organisation can be possible. In order to enhance the diversity equity and inclusion at work place it is important to implement the best HR plans, policies and practices.

Even though diversity, equity and inclusion are vital to many organisations, yet the need for it is to be identified by many companies. Many companies are making an effort to build an inclusive work environment but to create a diversified equitable and inclusive environment for the employees still has a long path ahead of it.

This study suggests that factors such as leadership, plans and policies, unconscious bias, employee engagement and organisational culture can be implemented for achieving a better diversity, equity and inclusion in the organisation. Leadership quality of the employees can be improved with better HR practices. Thus, to maintain a workforce with improved leadership skills diversity has to be implemented. Similarly, Plans and policies of the organisation has to be framed by considering the employees of the organisation. All employees must have an equal opportunity to address any violation of these plans and policies. Thus, an equitable and inclusive work environment can be built. Unconscious biases are to be eliminated in the organisation as it can affect the workforce adversely which may lead to an unproductive work force. Organisations must be uninfluenced by any unconscious bias. Employee engagement has to be promoted in the organisation. Every employee must feel confident in contributing their ideas. The organisation must also be transparent so that the success rate of implementing Diversity, Equity and Inclusion can be high. Organisational culture must focus on improving the diversity equity and inclusion. It has to be maintained in such a manner that it provides equal opportunity to every employee of the organisation which in turn helps in maintaining a healthy work life.

REFERENCES

Aghazadeh, S.M., (2004). Managing workforce diversity as an essential resource for improving organizational performance. *International Journal of Productivity and Performance Management*.

Ali, M., Kulik, C.T. and Metz, I., (2015). The gender diversity–performance relationship in services and manufacturing organizations. *The International Journal of Human Resource Management*, *22*(07), pp.1464-1485.

BBI Report., (2008), May. Inclusive corporate culture and employment of persons with disabilities: analysis of CSR strategies of multinational enterprises in Norway and the UK. In *UFHRD 2012 Conference*.

Bernstein, R.S., Bulger, M., Salipante, P. and Weisinger, J.Y., (2015). From diversity to inclusion to equity: A theory of generative interactions. *Journal of Business Ethics*, *167*(3), pp.395-410.

Böhm, S. A., Dwertmann, D. J., & Baumgärtner, M. K. (2016). How to deal with disability-related diversity: Opportunities and pitfalls. In *Disability management and workplace integration: International research findings* (pp. 85-98). Taylor and Francis.

Dhakal, S.P., Connell, J. and Burgess, J. (2018), "Inclusion and work: addressing the global challenges for youth employment", *Equality, Diversity and Inclusion*, Vol. 37 No. 2, pp. 110-120. https://doi.org/10.1108/EDI-12-2017-0290

Dike, P. (2013). The Impact of Workplace Diversity on Organisations. Degree Thesis. Helsinki, Finland: Degree for Program in International Business, Arcada.

Fapohunda, T.M., (2015). Towards improved access to full employment and decent work for women in Nigeria. *International journal of humanities and social science*, *2*(8), pp.104-112.

Gentry, W.A., Eckert, R.H., Munusamy, V.P., Stawiski, S.A. and Martin, J.L., (2014). The needs of participants in leadership development programs: A qualitative and quantitative cross-country investigation. *Journal of Leadership & Organizational Studies*, *21*(1), pp.83-101.

Green, K.A., López, M., Wysocki, A. and Kepner, K.(2002). Diversity in the Workplace: Benefits, Challenges, and the Required Managerial Tools: HR022/HR022, 7/2002. *Edis*, *2002*(2).

Gupta, M., Shaheen, M., & Reddy, P. K. (2017). Impact of psychological capital on organizational citizenship behavior: Mediation by work engagement. *Journal of Management Development*, *36*(7), 973-983.

Hameed, A. and Waheed, A., (2011). Employee development and its affect on employee performance a conceptual framework. *International journal of business and social science*, *2*(13).

Hossain, M., Atif, M., Ahmed, A., & Mia, L. (2020). Do LGBT workplace diversity policies create value for firms?. *Journal of Business Ethics*, *167*, 775-791.

Kaur, N. and Arora, P., (2017). Acknowledging gender diversity and inclusion as key to organizational growth: a review and trends. *Journal of Critical Reviews*, *7*(6), pp.125-131.

Kulkarni, M., Böhm, S. A., & Basu, S. (2016). Workplace inclusion of persons with a disability: Comparison of Indian and German multinationals. Equality, Diversity and Inclusion: An International Journal, 35(7/8): 397-414

Kumar, R. and Gaur, A., (2011). Work force diversity: Impact of diversity with regard to gender in Telecom Sector in India. *International Journal of Research in Management*, *Science & Technology*, *2*(3), pp.58-63.

McLeod, P.L., Liker, J.K. and Lobel, S.A., (2016). Process feedback in task groups: An application of goal setting. *The Journal of applied behavioral science*, *28*(1), pp.15-41.

O'Donovan, D., (2018). Diversity, inclusion and organizational citizenship behaviours: A study of nurses in the Irish healthcare sector.

Philip, J. and Soumyaja, D., (2011). Workplace diversity and inclusion: policies and best practices for organisations employing transgender people in India. *International Journal of Public Policy*, *15*(3-4), pp.299-314.

Rau, B.L. and Hyland, M.A.M., (2003). Role conflict and flexible work arrangements: The effects on applicant attraction. *Personnel psychology*, *55*(1), pp.111-136.

Rohwerder, B. (2017). Impact of diversity and inclusion within organizations. Retrieved from: https://assets.publishing.service.gov.uk/media/5ba51175e 5274a54d5c39c19/109_Diversity_and_inclusion_within_org anisations.pdf

Saxena, A., (2014). Workforce diversity: A key to improve productivity. *Procedia economics and finance*, *11*, pp.76-85.

Shani, A.B., Lau, J., Chandler, D. and Coget, J., (2005). *Behavior in organizations: An experiential approach*. McGraw Hill-Irwin Publications.

Tlaiss, H., & Kauser, S. (2011). The impact of gender, family, and work on the career advancement of Lebanese women managers. *Gender in Management: An International Journal*, *26*(1), 8-36.

A Study on Strategic Sourcing and Supplier Selection among Construction Retailers in Kerala

Mr. Pavin Shaji Mathew[1], Ms. Nima Ravi[2] & Dr. Mithra Manmadhan[3]

Abstract

This research paper investigates the key causal linkages in supply chain management—the impact of strategic sourcing and supplier selection on firm performance in the Construction retail supply network. The empirical survey-based research methodology was used to gather data from the construction retail sector. The data collection resulted in 150 responses. Correlation and regression analysis was used to assess the research model and test the research hypotheses. The research findings support that strategic sourcing has a significant and positive effect on business performance, supplier selection has a significant and positive effect on the firm's ability to gain competitive advantages and strategic sourcing and competitive advantage have significant and positive effect on firm's business performance.

Keywords: Supply chain management, strategic sourcing, supplier selection, construction retail

Introduction

Indian consumers today look for exceptional quality, a pleasant environment, and affordable prices when making purchases. However, because of changing lifestyles, greater expectations, and rising affluence, the retail sector is unable to satisfy consumer wants. With an employment rate of 8% and a GDP growth rate of 10%, India's retail market is a growing and dynamic sector. It is known as a great location for international retailers and came in second in the Global Retail Development Index in 2021. Data from Global Construction and Oxford Economics show that India is one of the top markets, with a booming retail and construction industry.

The rapidly growing Indian building market requires a large quantity of supplies at the appropriate period. In the construction sector, material handling is a time-consuming process that includes purchasing, inventory management and assembly. After the project has been developed, the purchasing of materials can begin. The construction sector still hasn't found a good platform for buying and getting building supplies because price is such an important factor.

1. *Mr. Pavin Shaji Mathew, CET School of Management, College of Engineering Trivandrum, Kerala- 695017*
2. *Ms. Nima Ravi, Assistant Professor, CET School of Management, College of Engineering Trivandrum, Kerala- 695017*
3. *Dr. Mithra Manmadhan, Assistant Professor, CET School of Management, College of Engineering Trivandrum, Kerala- 695017*

Supply chain management now includes the idea of strategic sourcing as a crucial element. In order to assist businesses become more competitive, it is seen as a collection of interconnected business processes focused to maximising the value of goods and services obtained from outside sources (Anderson and Katz, 1998). It can lead to lower costs, higher quality, and quicker delivery times (Faes and Matthyssens, 2009). Strategic sourcing's scope and focus are expanding to encompass enhancing supply chain environmental sustainability, enhancing corporate social responsibility, and enhancing supplier collaboration to the point of including suppliers in fostering innovation (Wowak et al., 2016).

Recognizing the dynamic Indian– construction retail supply network, this study describes a research effort driven by 4 factors namely- Supplier selection, strategic sourcing, competitive advantage and firm's business performance. The aim of this study is to examine how supplier selection and strategic sourcing affect firm performance and competitive advantage in the retail construction industry. This study adds to existing of knowledge on strategic sourcing for merchants of building materials by including empirical data. Professionals in the building sector, suppliers and decision makers in India can learn more about strategic material sourcing through retailers from this paper.

LITERATURE REVIEW

Global sourcing has gained new attention due to increased network dependence and globalisation, which will increase productivity and competitiveness. The Brundtland Report established the term "sustainability" in 1987, and the World Commission on Environment and Development (WCED) later adopted it: "sustainability means being able to meet present demands without compromising the potential for future generations to meet their own requirements" (World Commission on Environment and Development, 1987). Elkington's "triple bottom line" strategy, first put forth in 1998, was founded on the idea that business performance should be evaluated from three different angles: economic, environmental, and social. In order to achieve sustainable development, businesses should embrace a long-term perspective and foster economic growth while preserving social advancement and the environment (Arrigo & Elisa, 2020).

Supply chain management (SCM) refers to the entire set of steps needed to integrate suppliers, warehouses, manufacturers, and marketplaces, which ultimately results in the production of goods at the most affordable price, at the ideal time, and in the ideal location. This collaboration meets market demand while lowering supply chain costs overall (Razavi et al., 2016).

In today's fiercely competitive economy, innovation is the key to success. Businesses must constantly develop their tactics, goods, and services. Culture is a crucial influencer for enterprises to select on their suppliers and procurement of particular products (Mandal & Santanu, 2020). These days, the focus of supply chain management is on strategic purchasing decisions (Biazzin, 2019). By lowering transactional costs, costs related to the ordering process, and delivery costs, supplier relationships can streamline logistical operations and purchasing. This demonstrates that more complex relationships between the buyer and supplier can lead to efficiencies within the buyer's organisation. Contrarily, a supplier can also enhance its processes in response to buyer input, enabling the provider to deliver goods and services of a higher calibre (Knight et al., 2017).

In order to accomplish the organization's long-term objectives, a comprehensive process of acquiring inputs and managing supplier relationships is referred to as strategic sourcing (Biazzin, 2019). A crucial aspect of the strategic role that purchasing activities play in a company's long-term strategy is strategic purchasing (Chiang et al., 2012). To assist the company in achieving important objectives, strategic sourcing takes advantage of supplier expertise in the manufacturing and design processes.

In order to successfully implement strategic sourcing, a number of business functions, including procurement, operations, logistics, and marketing, must be integrated (Wang et al., 2020). A company can improve its strategic sourcing by maintaining long-term goals, supplier and customer relationship management, and good buyer and supplier communication (Kwofie, 2019). The elements of strategic sourcing are strategic purchasing, supplier relationship management, and information sharing with suppliers (Kim & Chai, 2017).

In order to accomplish the strategic goal of an organisation, strategic sourcing is a framework that could make advantage of suppliers' competencies in the manufacturing process. This approach can help managers choose the right products while keeping competitive advantage in mind as a key factor (Luay Jum'a, 2021). The importance of sourcing, one of the four core groups of operations in the modern supply chain management (Plan - Source - Make - Deliver), is increasing daily as a result of the market's extreme volatility and the demand for goods and services. Through the phases of the strategic sourcing process, sourcing activities are viewed as a crucial supply chain management procedure. The decision-making process for the sourcing strategies that will impact all other company operations is the most crucial step in the strategic sourcing process (Dujak & Davor, 2011).

In order to connect supplier networks with a company's operational performance and financial objectives, strategic sourcing is responsible for managing and designing them. The most crucial strategic supplier evaluation factor for both businesses and nations is cost, pricing, and money. Organizations within a particular industry place a concentrate on industry-specific criteria rather than using generalisations of strategic supplier evaluation criteria. The strategic supplier evaluation criteria and the important success variables are significantly out of alignment. Most people agree that the key players in the sourcing process are engineering and R&D. (Kotula et al., 2015).

The choice to purchase items in an ad hoc manner is known as unstructured buying (Shrivastava & Lanjewar, 2011). Strategic sourcing and purchasing together encourage the growth of supplier relationships and the creation of new suppliers (Kim & Chai, 2017).

In industrial companies, the purchasing function has grown in significance as the competitive marketplaces are changing quickly (Kim et al., 2015). The strategic function of purchasing is highlighted by the expanding importance of supply chain management, which evolved from "buying" to "procurement" and "supply management" (Paulraj et al., 2006). Strategic purchasing is described as playing a strategic role in the long-term strategy of the company. For the purpose of promoting a potential long-term cooperation, a group of suppliers is chosen. Strategic purchasing fosters close relationships and widens communication (Razavi et al., 2016). A firm's financial performance is positively impacted by strategic purchasing, which is seen as a predictor of financial performance (Chen et al., 2004). The purchasing function falls under the strategic sourcing principle and includes all aspects of the purchasing process, such as identifying the need for the purchase, choosing the supplier, negotiating a fair price, determining the terms and conditions of the acquisition, issuing the purchase order or contract, and monitoring the delivery to ensure payment and delivery (Van Weele, 2014).

Evaluation of the retailer refers to choosing the right retailer for the supply chain. For things to be offered in the market, they must frequently be assessed and judged (Olsson et al., 2013). Analyzing retailers yields superior sourcing traits and compiles data for supply chain management's material purchase. The process of sourcing and buying a product keeps the supplier and buyer in close contact, which boosts both parties' competitiveness (Cherian, Munuswamy & Jasim, 2021).

Relationship management is a policy that an organisation upholds between two business partners or between a business party and a client. In order to sell their goods to their respective clients, suppliers rely on middlemen. Due to direct engagement, the risk of excessive cost and poor demand is recognised. Strategic sourcing is positively influenced by the variables retailer disengagement, retailer relationship management, and retailer appraisal, whereas unstructured buying is negatively impacted. Retailer relationship management and retailer disengagement are both positively impacted by the retailer evaluation.

Those in the retail industry must concentrate on the relationships that drive earnings and maintain staff satisfaction in addition to gaining market share and expanding sales. Retail managers who want to develop relationships should concentrate on developing one-on-one interactions with clients and staff members while fostering a strong culture of reflection and client care.

Internal integration acknowledges that various departments should not operate as functional silos, but rather as a single, coordinated operation. Internal integration is fundamentally the sharing of information, cross-functional strategic collaboration, and internal teamwork. Internal integration, which concentrates on cooperation between the purchasing department and other divisions inside a company, is one of the most crucial elements of strategic sourcing (Chiang et al., 2012). Internal integration can relate to the relationship between sourcing teams and other departments. Sourcing teams are in charge of choosing where to source goods and services.

In order to undertake sophisticated purchasing plans and improve operations, information exchange between businesses and suppliers can be quite beneficial, especially during the COVID-19 era (Paul and Chowdhury, 2020). This can be related to the manner in which suppliers and manufacturing companies coordinate and share information.

The goal of strategic sourcing is to increase purchasing power by establishing long-term relationships between the buyer and the supplier. For a focal firm, strategic sourcing is more focused on managing the supply of raw materials and relationships with all of its upstream suppliers in order to achieve operational efficiency in terms of SC performance (Mandal and Santanu, 2020). It is a dependent variable for construction material dealers' effective sourcing practises (Cherian, Munuswamy and Jasim 2021). Supply Chain studies have given strategic sourcing a lot of attention (Kim and Chai, 2017).

Positive ties exist between the Indian construction industry and the retail sector. The studies discovered that a variety of criteria, including retailer appraisal, retailer disengagement, strategic sourcing, and retailer relationship management, affect how retailers choose their suppliers. (Cherian, Munuswamy and Jasim, 2021).

An organisation uses a variety of criteria when choosing and assessing the performance of its key/ preferred suppliers. Given that purchased materials account for greater than 50% of the cost of goods sold globally, choosing a supplier is a crucial strategic choice and a source of competitive advantage. Due to the rigours of competition and the complexity of the business world, many companies are becoming increasingly picky about the suppliers they work with (Su, et al., 2009).

Firms that improve their capability for competitive pricing, superior quality, flexibility, dependable delivery, and quick reaction time improve their degree of overall business performance (Finch, 2003; Tan et al., 2002). Business advantages are anticipated as a result of a well-managed and integrated supply chain. Better sales and profits will result as a result of competitive cost, quality, flexibility, quick reaction times, and delivery dependability (Su et al., 2009).

Strategic buying, according to Carr and Smeltzer (2000), improves the business performance of organisations. Financial and market metrics such as return on asset (ROA), profit as a proportion of sales (profit margin), market share, and net income before taxes are frequently used to assess an organization's performance (Su et al., 2009). When purchasing is made more strategic, it can have a greater impact on the company's financial performance (Carr & Pearson, 2002).

In order to achieve the objectives of the study, the following hypotheses have been formulated:

H1: There is a significant relationship between strategic sourcing and firm's ability to gain competitive advantage.

H2: There is a significant relationship between supplier selection and firm's ability to gain competitive advantage.

H3: There is significant impact of strategic sourcing and supplier selection on firm's ability to gain competitive advantage.

H4: Competitive advantage can significantly predict the firm's business performance.

H5: Strategic sourcing can significantly predict the firm's business performance.

RESEARCH METHODOLOGY

The goal of the study is to examine the relationships among SS, StrS, CA, and firm's BP using primary data gathered from the industries. Here, a quantitative research paradigm is being applied. The study uses primary data that was gathered through the use of a structured questionnaire. The population includes construction retailers across Kerala, India. The sample size consisted of 200 individuals working in construction retail industry who sell building supplies such cement, hardware, plumbing, interior decor, tiles, and paints, from Kerala drawn through purposive sampling. Indicators for each factors were adapted from Sue, Carl, et al., (2009).

ANALYSIS AND DISCUSSION

A. Relationship between strategic sourcing (StrS) and firm's ability to gain competitive advantage (CA).

H0: There is no significant relationship between StrS and firm's ability to gain CA.

H1: There is a significant relationship between StrS and firm's ability to gain CA.

Table 1
Relation between strategic sourcing and firm's ability to gain competitive advantage

		CA	StrS
StrS	Pearson Correlation	1	.562**
	Sig. (2-tailed)		.000
	N	140	140
CA	Pearson Correlation	.562**	1
	Sig. (2-tailed)	.000	
	N	140	140
**. Correlation is significant at the 0.05 level (2-tailed).			

Since the Pearson coefficient is 0.562 and significance is less than 0.05, there is moderate correlation between strategic sourcing and competitive advantage.

B. Relationship between supplier selection (SS) and firm's ability to gain competitive advantage (CA).

H0- There is no significant relationship between SS and firm's ability to gain CA.

H1- There is a significant relationship between SS and firm's ability to gain CA.

Table 2
Relation between supplier selection and firm's ability to gain competitive advantage

		CA	SS
CA	Pearson Correlation	1	.616**
	Sig. (2-tailed)		.000
	N	140	140
SS	Pearson Correlation	.616**	1
	Sig. (2-tailed)	.000	
	N	140	140
**. Correlation is significant at the 0.05 level (2-tailed).			

Since the Pearson coefficient is 0.616 and significance is less than 0.05, there is moderate correlation between supplier selection and firm's ability to gain competitive advantage.

C. Relation between strategic sourcing (StrS), supplier selection (SS) and firm's ability to gain competitive advantage

H0- There is no significant impact of StrS and SS on CA.

H1- There is significant impact of StrS and SS on CA.

To further strengthen and to find the extent of the relationship between them, regression analysis was attempted with the same data for independent variables StrS and SS and dependent variable firm's ability to gain competitive advantage.

Table 3:
Relation between StrS, SS and CA

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.658[a]	.433	.428	.33816
a. Predictors: (Constant), SS, StrS			

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
		17.413	2	8.707	76.137	.000[b]
	Residual	22.756	199	.114		
	Total	40.170	201			
a. Dependent Variable: CA						

b. Predictors: (Constant), SS, StrS

Coefficientsa					
Model B	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Std. Error	Beta			
(Constant)	1.145	.239		4.782	.000
StrS	.171	.057	.181	3.013	.003
SS	.537	.058	.554	9.210	.000

a. Dependent Variable: CA

As can be seen from Table 3, it can be concluded that there is a moderate positive relationship between independent variables strategic sourcing and supplier selection and dependent variable firm's ability to gain competitive advantage. Also, 43.3 percent of the dependent variable can be explained by the independent variables, viz., strategic sourcing and supplier selection. The multiple regression equation for the same is as follows:

CA= 1.145 + 0.171StrS + 0.537SS

D. Relationship between firm's ability to gain competitive advantage (CA) and firm's business performance (BP).

H0- Competitive advantage can't significantly predict firm's business performance.

H1- Competitive advantage can significantly predict firm's business performance .

Table 4
Relation between firm's ability to gain CA and firm's BP

Model Summary					
R	R Square	Adjusted R Square		Std. Error of the Estimate	
.824[a]	.679	.676		.17414	
a. Predictors: (Constant), CA					
ANOVA[a]					
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	8.193	1	8.193	270.185	.000[b]
Residual	3.882	128	.030		
Total	12.075	129			
a. Dependent Variable: BP					
b. Predictors: (Constant), CA					
Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.639	.184		3.479	.001
CA	.827	.050	0.824	16.437	.000

a. Dependent Variable: BP

There is a moderate positive relationship between firm's ability to gain competitive advantage and firm's business performance. This means that as the value of the CA (independent variable) increases, the mean of the BP (dependent variable) also tends to increase. And the linear regression equation for the same is:

BP= 0.639 + 0.827CA

Also, 67.6 percent of the variation in dependent variableie, business performance can be explained by the independent variable, viz., competitive advantage.

E. Relationship between strategic sourcing (StrS) and firm's business performance (BP).

H0: Strategic sourcing can't significantly predict firm's business performance.

H1: Strategic sourcing can significantly predict firm's business performance.

Table 5
Linear regression analysis between StrS and firm's BP

Model Summary					
R	R Square	Adjusted R Square		Std. Error of the Estimate	
.832[a]	.692	.689		.17053	
a. Predictors: (Constant), StrS					
ANOVA[a]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	8.353	1	8.353	287.236	.000[b]
Residual	3.722	138	.029		
Total	12.075	139			

a. Dependent Variable: BP

b. Predictors: (Constant), StrS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Beta			
(Constant)	3.611	.180		3.396	.001
StrS	..832	.049	..832	16.948	.000

There is a moderate positive relationship between strategic sourcing and firm's business performance. Also 68.9 percent of the variation in the dependent variable can be explained by the independent variable, viz., business performance. The linear regression equation for the same is given below:

BP= 3.611 + 0.832StrS

CONCLUSION & IMPLICATIONS

Strategic sourcing helps an organization build long-term relationships with its suppliers. By reinforcing the focus on the core capabilities of the suppliers and assuring the right suppliers for the right sourcing objective, strategic sourcing helps create a synergy between organizations and its suppliers. Suppliers are a competitive weapon in the arsenals of world class companies with the realization that strategic sourcing builds supply chains that win against the best of the best. A competitive advantage distinguishes a company from its competitors. It contributes to higher prices, more customers, and brand loyalty. Establishing such an advantage is one of the most important goal of any company. In today's world, it is essential to business success.

By employing data from the Kerala construction retail industry, this study bridges the gap between theory and reality by looking at the connections between strategic sourcing, supplier selection, firm's ability to gain competitive advantage and business performance. Compared to earlier research that was either purely conceptual or employed data from smaller groups, the findings from this study ought to have larger relevance. The study reveals how crucial supplier selection and strategic sourcing are to business operations in the construction and retail sectors. To make sure that their products will be able to compete successfully in the global economy, the construction retail industries are emphasising supplier selection and strategic sourcing more.

REFERENCES

Arrigo, E., 2020. Global sourcing in fast fashion retailers: Sourcing locations and sustainability considerations. *Sustainability*, *12*(2), p.508.

Blake, M.R., Peeters, A., Lancsar, E., Boelsen-Robinson, T., Corben, K., Stevenson, C.E., Palermo, C. and Backholer, K., 2018. Retailer-led sugar-sweetened beverage price increase reduces purchases in a hospital convenience store in Melbourne, Australia: a mixed methods evaluation. *Journal of the Academy of Nutrition and Dietetics*, *118*(6), pp.1027-1036.

Cardoso, A.L. and Biazzin, C., 2020. What is the value of e-procurement for suppliers? The drivers, barriers and opportunities for engaging MRO suppliers. *International Journal of Procurement Management*, *13*(2), pp.278-298.

Carlsson, M., 2019. *Strategic sourcing and category management: Lessons learned at IKEA*. Kogan Page Publishers.

Chen, J. and Guo, Z., 2014. Strategic sourcing in the presence of uncertain supply and retail competition. *Production and Operations Management*, *23*(10), pp.1748-1760.

Cherian, T.M., Munuswamy, S. and Jasim, K.M., 2021 Strategic sourcing: An empirical study among Indian construction retailers. *Management*, *11*(1), pp.34-48.

Chiang, C.Y., Kocabasoglu-Hillmer, C. and Suresh, N., 2012. An empirical investigation of the impact of strategic sourcing and flexibility on firm's supply chain agility. *International Journal of Operations & Production Management*.

Cox, A., 2015. Sourcing portfolio analysis and power positioning: towards a "paradigm shift" in category management and strategic sourcing. Supply Chain Management: An International Journal, 20(6), pp.717-736.

Formentini, M., Ellram, L.M., Boem, M. and Da Re, G., 2019. Finding true north: Design and implementation of a strategic sourcing framework. *Industrial marketing management*, *77*, pp.182-197.Jennings, D., 2002. Strategic sourcing: benefits, problems and a contextual model. *Management*

Jermsittiparsert, K. and Rungsrisawat, S., 2019. Impact strategic sourcing, supplier innovativeness, and information sharing on supply chain agility. *International Journal of Innovation, Creativity and Change*, *5*(2), pp.397-415.

Kim, M. and Chai, S., 2017. The impact of supplier innovativeness, information sharing and strategic sourcing on improving supply chain agility: Global supply chain perspective. *International Journal of Production Economics*, *187*, pp.42-52.

Knight, A.K., Blessner, P., Olson, B.A. and Blackburn, T.D., 2017. Strategic sourcing and corporate social responsibility: Aligning a healthcare organization's strategic objectives. *Journal of Purchasing and Supply Management*, *23*(2), pp.94-104.

Kocabasoglu, C. and Suresh, N.C., 2006. Strategic sourcing: an empirical investigation of the concept and its practices in US manufacturing firms. *Journal of Supply Chain Management*, *42*(2), pp.4-16.

Kotula, M., Ho, W., Dey, P.K. and Lee, C.K.M., 2015. Strategic sourcing supplier selection misalignment with critical success factors: Findings from multiple case studies in Germany and the United Kingdom. *International Journal of Production Economics*, *166*, pp.238-247.

Landale, K.A., Apte, A., Rendon, R.G. and Salmerón, J., 2018. Using analytics to inform category management and strategic sourcing. *Journal of Defense Analytics and Logistics*.

Mandal, S., 2020. Impact of supplier innovativeness, top management support and strategic sourcing on supply chain resilience. *International Journal of Productivity and Performance Management*.

Papachristos, G. and Adamides, E.D., 2014. Internal supply-chain competition in remanufacturing: operations strategies, performance and environmental effects. *International journal of logistics systems and management*, *19*(2), pp.187-211.

Razavi, S.M., Abdi, M., Amirnequiee, S. and Ghasemi, R., 2016. The impact of supply chain relationship quality and cooperative strategy on strategic purchasing. *Journal of Logistics Management*, *5*(1), pp.6-15.

Segerstedt, A. and Olofsson, T., 2010. Supply chains in the construction industry. *Supply chain management: an international journal*.

Singh, R., 2006. Effect of Channel Conflict on Channel Efficiency—Few Improved Conceptual Models for Various Conflict Resolution Strategies. *Management and Labour Studies*, *31*(1), pp.18-31.

Sislian, E. and Satir, A., 2000. Strategic sourcing: a framework and a case study. *Journal of Supply Chain Management*, *36*(2), pp.4-11.

Su, J., Dyer, C.L. and Gargeya, V.B., 2009. Strategic sourcing and supplier selection in the US Textile—Apparel—Retail supply network. *Clothing and Textiles Research Journal*, *27*(2), pp.83-97.

Towers, N. and Song, Y., 2010. Assessing the future challenges in strategic sourcing commodity from China: a case-study analysis. *Asia Pacific Business Review*, *16*(4), pp.527-544.

Venkatesan, R., 1992. Strategic sourcing: To make or not to make. *Harvard Business Review*, *70*(6), pp.98-10

KICMA - REACH • ISSN 2395-0293 | VOL. 9 • NO. 1
Peer Reviewed Journal of Commerce & Management | JAN-JUN 2023

Study on Consumer Satisfaction among Royal Enfield Bikers

Ms. Vrindu J.P.

ABSTRACT

Customer satisfaction indicate the amount of happiness of a customer with a Company's products and services. The study of customer satisfaction helps a company to know their strengths and weaknesses and also this study is essential for the effective marketing. Modern marketing considers the customers as the king. A happy and satisfied customer defined the success and survival of the company. Today the Motor Vehicle industry in India is one of the highly developing sectors that contribute more than 7 percentage to our GDP. In terms of global ranking India is the second largest country in manufacturing two wheelers. In two-wheeler sector Royal Enfield have a good market share. Royal Enfield is an Indian motorcycle company which has created a huge impact in the automobile industry. Royal Enfield has been able to create an image in the market such that by its name only every consumer creates an image of a luxurious, strong motorcycle.

Keywords: CRM- Customer Relationship Management, Value added services

INTRODUCTION

Royal Enfield was a brand name under which The Enfield Cycle Company Limited of Redditch; Worcestershire sold motorcycles, bicycles, lawnmowers and stationary engines which they had manufactured. The first Royal Enfield motorcycle was built in 1901. Royal Enfield having good market share in India. In Customer Relation Management satisfied customers and continuous relationship with the customer even after sale should ensure by the company. Customer satisfaction is most important way in which an organisation gets established and gains recognition among the public.

REVIEW OF LETERATURE

Ashok Kumar M & Dr. R. Venkatesh (2017): In their article about "A Study on Customer Satisfaction towards Royal Enfield in Dharmapuri" stated that the world was very different in those days and there must have been a feeling of great excitement. Marketing research is the systematic collection of information from

Ms. Vrindu J.P., Assistant Professor, Department of Commerce, Mar Gregorios College of Law

sours outside the business (or) research organisation. Royal Enfield was doing quite well in South India, especially in the city of Bangalore.

Ms. Ameer Asra Ahmed etc. at all(2014): in their article about "A Study On Consumer Satisfaction Level Of Royal Enfield Bullet" stated that this study on consumer satisfaction is being associated with one of the leading two wheeler company the Royal Enfield in the following paragraph a brief note on the problem that has been undertaken as the subject matter is explained. In this project report, we will find out the satisfaction level of the Royal Enfield Bullet owner in Bangalore city. The problem it is facing in the present market scenario. This project evaluates the various factors that keep the customer satisfied. It also evaluates the various factors that keep the customer to buy the bullet. While selecting a bullet various aspects that have to be given a thought with respect to Brand image, colour, fuel-efficiency, technology used etc. .A questionnaire was designed to conduct a survey and the data so collected from appropriate respondents was analysed using a statistical package called SPSS and One-way Anova test was done to test the hypothesis.

SR Sony Mary & Dr K Amutha (2018): in this study about "Customer Satisfaction level towards Royal Enfield bikes(with special reference to Coimbatore city)",stated that this study is to analyse the customer satisfaction, towards Royal Enfield bikes in Coimbatore city. The objective of the study helps to know demographic factors, buying behaviour of the customers. This study is about the preference for Royal Enfield and it is done through questionnaires from the customers. The tools and techniques used were simple percentage, chisquare.The achieved result of the study reveals that ultimate users are the students who uses Royal Enfield bike and most of the respondents prefer Royal Enfield due to company image and comfortable. The company must improve their mileage, model and colour in their Royal Enfield bike.

STATEMENT OF THE PROBLEM

Consumer satisfaction plays a crucial role in enabling an organization to change and develop the content and fashion. A company can earn more profits when there is more sales and happened only when it has strong care towards product and services offered by the company. The study is means to evaluate customer satisfaction level of Royal Enfield with other dominant two-wheeler operators including TVS, Hero, Honda Yamaha Etc. here the traits specialities, features and services of Royal Enfield is compared with other operators. Try to find out the preferential factors of Royal Enfield with others and Satisfaction level of Royal Enfield customers.

SCOPE OF THE STUDY

The study on customer satisfaction helps to know the level of customer satisfaction and value. Knowing level of satisfaction is one of the essential prerequisites for the preparation of company's marketing plans. It is essential for increasing performance of the brand and also providing value added services to the customers. Highly essential for CRM of the business

SIGNIFICANCE OF THE STUDY

Customer attraction is an important factor in every business. The customers are attracted towards the business only when they are satisfied with the facilities and services offered by the company in general and Royal Enfield Bike in particular. The study is significant in the sense that assessing the extent to which customers of the business are satisfied with the product or services offered are evaluated.

OBJECTIVES OF THE STUDY

1. To understand the reasons for preferring Royal Enfield bikes.
2. To ascertain the barriers to purchasing a Bullet for a prospective customer.
3. To ascertain the factors that affects the choice of a Bullet as a motorcycle for common man.
4. To determine the customer's satisfaction regarding after sales service of Royal Enfield.

METHODOLOGY OF THE STUDY

In this study both descriptive and analytical research design was used. For conducting study used Primary and Secondary data sources. For collecting primary data used a structured interview schedule. Sample size for the study was 150 and respondents belongs to the age group of 18-50. Convenience sampling technique was used for the selection of samples. Secondary data were collected from different published and unpublished sources and include reports, journals books and websites. The data collected has been analysed by using simple mathematical and statistical tools like percentages and graphs.

DATA ANALYSIS

Table -1

Preference Factor of Royal Enfield Bike

Preference	No of respondents	Percentage
Price	6	4
Fuel economy	15	10
Safety measure	24	16
Attractiveness	57	38
All of the above	45	30
Other than above	3	2
Total	150	100

Source : Primary Data

As the above table depicts that, highest percentage of respondents (38%) prefer attractiveness, 30% of respondents prefer all of the above factor, 16% of respondents prefer safety measure, 10% of respondents prefer fuel economy, 4% of respondents prefer price and least percentage of respondents (2%) prefer other than above factor.

Table-2

Affordability of Price

Affordability	No of respondents	Percentage
High	18	12
Moderate	111	74
Low	6	4
Very low	6	4
No option	9	6
Total	150	100

Source : Primary Data

As the above table depicts that, the highest percentage of respondents(74%) comments that affordability of price is moderate, 12% of the respondents comments that affordability is high, 6% of the respondents have no option, 4% of the respondents comments that affordability is low and very low.

Table- 3
Major Problems Faced by Respondents

Problems	No of respondents	Percentage
Low ride quality	3	2
Service issues	87	58
Low mileage	27	18
Not user friendly	6	4
High price	27	18
Total	150	100

Source : Primary Data

As the above table highlights that highest percentage of the respondents(58%) find out that service issue as major problem, 18% of the respondents problem is low mileage and is high price, 4% of the respondents find out that problem is not user friendly and least percentage of the respondents(2%) problem is low ride quality.

Table-4
Affordability of Maintenance Charge

Affordability	No of respondents	Percentage
Highly affordable	27	18
Moderate	105	70
Highly unaffordable	18	12
Total	150	100

Source : Primary Data

As the table depicts that , highest percentage of the respondents (70%) have the opinion that maintenance charges are highly affordable , 18% of the respondents have the opinion that maintenance cost is moderate and least percentage of the respondents(12%) have the opinion that maintenance charges are highly unaffordable .

Table-5
Comfort Level of Royal Enfield Bike

Comfortable	No of respondents	Percentage
Very comfortable	69	46
Comfortable	54	36
Average	21	14
Not comfortable	6	4
Total	150	100

Source : Primary Data

As the table depicts that, highest of the respondents (46%) are very comfortable on Royal Enfield, 36% of the respondents are comfortable on Royal Enfield, 14% of the respondents have average level comfort on Royal Enfield and least of the respondents (4%) are not comfortable on Royal Enfield.

Table-6
Performance Quality of Royal Enfield Bike

Grade	No of respondents	Percentage
Outstanding	54	36
Good	81	54
Average	12	8
Poor	3	2
Total	150	100

Source : Primary Data

As the table depicts that, highest percentage of the respondents (54%) give good grade for the performance of the bike, 36% of the respondents give outstanding grade for the performance of the bike, 8% of the respondents give average grade for the performance of the bike and least percentage of the respondents (2%) give poor grade for the performance of the bike .

SUMMARY OF FINDINGS

1. Majority of the Royal Enfield customers belong to age group 20-30 and most of the users are males and students
2. Most of the respondents presently own is Classic 350 of Royal Enfield bike, because of its attractiveness and comfort. It is the most selling model of Royal Enfield bike.
3. Majority of the respondent's motive behind purchasing Royal Enfield bike is for tripping. Because of its comfort.
4. Most of the respondents feels that affordability of Royal Enfield bikes are moderate.
5. The majority of the respondents highlight the problem of service issue.
6. Most of the respondents are satisfied with the power and pickup of Royal Enfield.
7. Majority of the respondent's opinion on the performance of the Royal Enfield bike is good.
8. Majority of the respondents are satisfied with the aftersales service and customer query responds of Royal Enfield

SUGGESTIONS

- The company should focus on aged group above 40, as it can increase sales and their market share.
- It should focus on satisfying the needs for Power, Safety, Comfort and after sale services.
- Should take steps to improve mileage.
- To increase the affordability of the bike to low income group, company should reduce the price of Royal Enfield bikes.

CONCLUSION

The study titled on „Consumer Satisfaction Among Royal Enfield Bikers "The study has helped Royal Enfield dealers to understand whether the customers are satisfied or not. If not what are main reasons for dissatisfaction of customer towards the dealer and what are the ways of improving the satisfaction level of customer towards dealer. We can conclude younger generation and middle age are more interested in Royal Enfield, the buying behaviour is governed predominantly by the need for Power and respect for the iconic Brand and users are mostly Professional Males, 20-30years of age, including some students.

Most of the customers are attracted to newly released Classic 350, also customers are easily affording the price of Royal Enfield bikes and customers are very loyal towards the brand Royal Enfield. Royal Enfield should concentrate on its advertising campaign to reach the customers, mileage of the Royal Enfield bikes is very economical and most of them prefer to buy their bike brand new from showroom with the spare parts available in market easily. Royal Enfield has an excellent satisfaction level within the customer for its power, pick up, comfort, safety and with after sales service. It is clear that Royal Enfield checks at the complaints registered by their customers on regular basis to maintain its brand value and entire Royal Enfield owner are passionate Royal Enfield fans.

REFERENCES

Sekharan Uma. (2004). Research Methods for Business. Wiley Pub. 4e

C.R Kothari. (2004). Research Methodology. *New Age International Publishers*, 2nd edition

Kotler Philip & Keller Lane Kevin. Marketing Management. 12th edition

Ashok Kumar M & R Venkatesh. (2019). A Study on Customer Satisfaction towards Royal Enfield in Dharmapuri. Kuvempu University dissertation.

Anita J and Gomati K.(2019). A study consumer satisfaction of Royal Enfield motor in Thiruruaripoondi Town. *International Journal for Research*. ISSN: 2236-6124.Vol 7. issue 9.

Ahmed Asra Ameer. (2014) A Study On Consumer Satisfaction Level Of Royal Enfield Bullet. *International Journal Applied Business and Economic Research*. volume 7

Mary Sony SR & Amutha K.(2018). "Customer Satisfaction level towards Royal Enfield bikes(with special reference to Coimbatore city). *International Journal of Commerce and Management Research*. Vol 4