ISSN : 0974 - 8482

Promoting Research

# Orissa Journal of Commerce

A Quarterly Peer-Reviewed & Refereed Journal
(UGC-CARE Listed)

Volume 42 Issue 4 October-December 2021



*A Publication of*
Orissa Commerce Association, Odisha, India

# EDITORIAL BOARD



# EDITORIAL ADVISORY BOARD






**Published by:** Dr. Malay Kumar Mohanty, Managing Editor, on behalf of Orissa Commerce Association, Odisha, India.

# Orissa Journal of Commerce

A Quarterly Peer-Reviewed & Refereed Journal
(UGC-CARE Listed)

**Volume 42** **Issue 4** **October-December 2021**

## Contents

# Editorial

This Issue of the Journal covers a wide range of topics. In the first paper, the author has made an attempt to understand how the stock market responds to the change in Advance Decline Ratio (ADR) during the Covid-19. Further, it investigates the existence of significant relationship between ADR and the S&P BSE Sensex and the impact during an over-buying and an over-selling condition. The paper concluded that, during the Pandemic the average daily ADR was 1.20, which means the number of stocks advanced is 1.2 times that of the number of stocks declining.

The second paper aimed to empirically analyse the effect of amalgamation on regional rural banks (RRBs) in India. The results revealed that return on equity increased significantly in the post-merger period. Hence, supporting the theories of value creation of mergers and acquisitions (M &A), the present research states that the profitability performance of regional rural banks in India increased marginally after the M&A exercise.

This next paper focuses on customer perception in terms of customer awareness of grievance redressal mechanisms in the banking sector. Banks being organisations of economic importance should make conscious efforts to establish secure service recovery culture. Developing a good complaint management system alone cannot serve the purpose of catering to the customers but making the customer aware of the various redressal avenues at their disposal is also necessary. The results of the study highlights that the customer awareness of redressal processes and mechanisms is low for external processes rather than internal processes of banks.

In the fourth paper, the authors made an attempt to examine the influence of mobile payment systems on unorganised retailing and further highlighting the factors influencing the consumers to accept or adopt the mobile payment system. This study also highlights the elements which play a role in shifting consumers from unorganised to organised retail through the Mobile Payment System. The study concludes that trust, privacy, and security issues are still restricting the user to adopt the online mode of payment

The next paper is a pioneering attempt by the authors to profile Indian users of organic skin care products. Demographic relationship with purchase intention was empirically tested. The findings revealed that personal income and education have significant influence on intention to buy organic beauty/ skin-care products. Firms can develop effective marketing strategies for organic skin care products focusing on the key demographic influences by pondering over the results of this study.

The sixth paper explores the possibilities of any relationship shift in customer service and customer satisfaction within a new space of the young generation's involvement in buying traditional apparel in Odisha. The study found that service experience does not drive the customers' satisfaction, and the

marketing mix elements do not equally affect the service experience. The outcome of the study will guide marketers to revisit the roles of the marketing mix in dealing with overall consumer experience and satisfaction.

Internal marketing, focusing on information, education, development and motivation of its employees plays a pivotal role in the higher educational institutions. The results of factor analysis of the next paper portrayed that internal communication, internal market research, training and development, psychological factors, HR and rewards, sociological factors, empowerment and vision as the important factors being the constituents of IM practices in HEI's in India. The study recommended that the authorities in HEI's should pay additional emphasis on the aforesaid factors in order to boost faculties continued commitment levels and to create comprehensible and practical job as well as organizational objectives.

In the next paper, the authors tried to assess the factors which stimulate students' interest towards research. The influence of teacher's motivation and research infrastructure on students' attitude towards research is studied along with the mediation effect of career opportunity. The study observed that teacher's motivation and research infrastructure have no direct effect but has mediated effect on student's attitude. Hence, the policy makers should focus providing career opportunity to the students in research to ignite research attitude among them from the graduate level.

Optimal cost management becomes a central point to maintain the profitability due to sudden changes in technologies and tough global and domestic competition; moreover due to the Covid-19. In this, most companies focused on reducing employee cost by adopting various modes like salary cut, retrenchment, and restricted the perquisites. The ninth paper made an attempt to identify the pattern of employee cost in the Indian corporate sector during the last 15 years from 2005 to 2019. The study concludes that the Indian corporates have not yet adopted any consistent wage policy. Further, it is also attempted to provide insightful information for policymakers to lessen the attrition rate in the corporates by analyzing the employee cost component in cost structure.

The last paper of this issue highlights the current scenario of Indian telecom sector and examines its growth in the last three decades from 1991 to 2020. The study concludes that there has been a continuous increase in the subscriber base, overall teledensity in both rural and urban areas, number of broadband subscribers and internet subscribers. The share of the public sector has come down, while the share of the private sector has increased remarkably. The authors have recommended that the Indian government should make the regulatory and policy framework more adaptable to the fast-changing needs of the telecom sector.

To recognize and appreciate the contributions of academicians and researchers in the field of 'Commerce and Management', the Orissa Commerce Association has started conferring the 'Fellow Award' since 2019. A list of the OCA Fellow Members is being appended in this Issue.

*Hope the readers will enjoy reading this Issue and encourage us to stride forward.*

**Dr. Malay Kumar Mohanty**

**(Managing Editor)**

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.01*

# Stock Market Dynamics with Respect to Advance-Decline Ratio in Pre and During Covid-19 Pandemic: An Empirical Analysis of S&P BSE Sensex

**Siba Prasad Mohapatra**
*Deputy Director, Amity University, Kolkata, West Bengal. E-mail: spmohapatra@kol.amity.edu*

**To cite this paper**

Mohapatra, S.P. (2021). Stock Market Dynamics with Respect to Advance-Decline Ratio in Pre and During Covid-19 Pandemic: An Empirical Analysis of S&P BSE Sensex. *Orissa Journal of Commerce.* 42(4), 1-11.

**Keywords**

Advance-decline ratio, Covid-19, S&P BSE Sensex, OLS regression

**JEL Classification**

G14, G17, G11, G02, G10

**Abstract:** The Indian stock market during the Covid-19 pandemic performed quite well in comparison to that of the pre-Covid period. Based on daily data from Bombay Stock Exchange, it was observed that the S&P BSE Sensex has grown by 85.5% from 1st April 2020 to 30th June 2021, while during a 9-year period from March 2011 to March 2020, the Index has grown by 59% only. To investigate further regarding this exceptional growth of stock market despite the Covid-19 pandemic, the advance-decline ratio (ADR) was also analyzed for the similar period. It was noticed that the daily average of ADR was 1.20 during the Covid-19 while it was only 1.03 during the last 9 years prior to the pandemic. The present study is focused on the impact of ADR on stock market return during Covid-19 as well as prior to the pandemic using regression analysis and to investigate the stock market response to overbought and oversold scenarios during Covid-19 pandemic.

## 1. Introduction

The stock market in India during the Covid-19 pandemic has performed much better despite the slowdown in the economy across the country. The Bombay Stock Exchange sensitive index S&P BSE Sensex has grown from 28265 on 1st April 2020, to 52448 on 30th June 2021, an increase of about 85.5%, while the market has grown by only 59.75% in the last 9 years of the pre-Covid period, in India i.e., from March 2011 to March 2020. So, the present study is an effort to know whether the performance of the stock market is backed by a strong movement of most of the stocks or only a few. It has been observed that the advance-decline ratio (ADR) on average is about 1.20 during the Covid period while it was1.03 for the last 9 years in the pre-Covid period. The ADR indicates a ratio of the number of stocks that have advanced to that of the number of stocks that have declined in comparison to the closing price of the previous trading day. ADR >1 means the stock price has increased for a greater number of stocks than that of stocks for which there is a price decline. ADR is an important indicator used by investors for technical analysis and it also refers to market breadth. ADR also indicates whether the market is overbought or oversold. ADR > 1 indicates more buying than selling and is hence called

an overbought condition and ADR<1 refers to more selling than buying and is thus called the oversold condition.

The stock market performance in any country is always regarded as one of the indicators of the status of the economy of that Nation. In simple words, the stock market index is called a barometer of any economy. There is also empirical evidence that the market behaves positively to the growth in GDP. But during the Covid period, the quarterly figure of GDP growth for India was on a declining trend. This may be because of a series of lockdowns, which was very much necessary then for health-related precaution. The lockdown has made many micro and small enterprises non-operatives because of workforce crisis and other resource constraints. This also has created lots of challenges for a few sectors like the Hotel and Tourism sector. However, for some phases of unlocks between the first and second wave of Covid, the economy was back into rails but the subsequent 2$^{nd}$wave of Covid situation again created further hindrance to the growing trend of the economy.

However, stock market in India has mostly been in a bullish trend during this pandemic except for an initial jerk at the announcement of the first lockdown in the country and a few momentary downfalls. Not only this, but the breadth of the market is also quite encouraging as measured in terms of advance-decline ratio (ADR). The number of stocks advancing in comparison to the number of stocks declining was also observed to be at the higher side most of the time. ADR is the ratio between the number of stocks whose share prices increased to the number of stocks whose share prices decreased on a particular trading day. During the Covid period from 1$^{st}$ April 2020 to 30$^{th}$ June 2021, the daily average of ADR is 1.20 for the Bombay Stock Exchange. It is also observed that out of 310 days during pandemic, for189 days the ADR was greater than 1 while for 121 days the ADR was less than equal to 1. That means capital market in India during the pandemic witnessed overbought conditions for a greater number of days than oversold conditions.

The present study is an attempt to understand how the stock market responds to the change in ADR during the Covid-19. Whether there exists any significant relationship between ADR and the S&P BSE Sensex. Secondly to know how much the impact is, during an over-buying condition and an over-selling condition. This will surely be helpful for the investors in making their investment plans in case a similar situation prevails in future.

## 2. Review of Literature

### *2.1. Covid-19 Pandemic and Stock Market Performance*

There are several studies concerning the impact of Covid-19 on stock markets in various countries of the world. Baker *et al.* (2020) observed that the U.S. stock market reacted so much more forcefully to Covid-19 than to previous pandemics in 1918-19, 1957-58 and 1968. He *et al.* (2020) also noticed that there is a spill-over effect of Covid -19 on stock markets in Asia, Europe, and America. As per the research work of Salman and Ali (2021), there was a short-term negative impact of Covid-19 on the stock market in countries in the Gulf Corporation Council (GCC). Some studies are done based on the relationship between the number of Covid cases and its influence on stock market return. It was observed that the stock market Index varies positively with the number of patients infected (Madai,

2021). Onali (2020) noticed that the US stock market exhibited volatility in the market during the Covid-19 pandemic. A study by Bora and Basistha (2021) observed that the stock market was volatile during Covid and declined during the initial days of the first lockdown but recovered well then. Buszko *et al.* (2021), in their research on the stability of the stock market in CEE countries observed that despite some sectoral hits, the market is found to be stable when analysed concerning profitability, volatility, and turnover. There are also studies that indicated the increase in retail participation in the stock market. Ozik *et al.* (2021), in their research work found that because of Stay-at-Home advisory from US Government, the stock market witnessed better liquidity due to retail participation during the pandemic. The significant determinants for retail participation were ample free time and access to the financial market provided by Fintech innovations to the trading platform. In India also retail participation in the stock market has seen a jump during the pandemic.

### *2.2. Advance-Decline Ratio and Stock Market Performance*

Advance-decline ratio (ADR) represents a ratio of the number of advancing shares and number of declining shares on a trading day. In other words, ADR is a measure of market breadth and provides a holistic movement of all the shares traded on a day. With respect to ADR, there are not many research studies available for the Covid-19 duration. However few studies in the past reflect some mixed results regarding the impact of ADR on the stock market. Joshi and Bhavsar (2011) & Patel (2015), in their research work observed that there is no significant relationship between the advance-decline ratio and Nifty 50 index. The study was conducted through different regression models with lagged ADR and Nifty returns and the conclusion derived was that it is not possible to predict the future market with the help of past ADR. But there are also studies that suggested that the advance-decline ratio as an indicator, hints at the bullish and bearish trend of the market. Zakon and Pennypacker (1968) observed that technical analysts for their short-term prediction use advance-decline line. Investor sentiment also is linked to ADR which causes excess volatility in the market and in the case of the inefficient market because of asymmetric information, it results in excess return for the investors and the portfolio managers (PH and Rishad, 2020). A study by Zaremb *et al.* (2021) noticed that market breadth along with herding behaviour takes the market upward or downward.

Though there are some literatures on the impact of Covid-19 as well as ADR on stock market return in several countries, very few research exist in India. The present study is unique in two aspects. Firstly, how advance-decline ratio (ADR) affects the market return for pre-and during pandemic and second, how the ADR impacts the market under overbought and oversold situations during the Covid-19 pandemic.

## 3. Objectives and Hypothesis of the Study

### *3.1. Objectives of the Study*

- To understand the impact of the advance-decline ratio on the stock market return before Covid-19 as well as during the pandemic.

- To study the impact of ADR on stock market return under overbought and oversold situations during the Covid-19 pandemic.

### 3.2. Hypothesis of the Study

$H_{01}$: There is no impact of ADR on SR during and prior to Covid-19 pandemic

## 4. Research Methodology

### 4.1. Data and Sample

The daily data of S&P BSE Sensex and day wise number of stocks advanced and declined was collected from the BSE website for the period from March 2011 till June 2021. The rationale behind the duration is that it will indicate 9 years trend of ADR and S&P BSE sensitive index for a pre-Covid period (March 2011 to March 2020) and about 14 months of daily data of the pandemic or Covid period (April 2020 to June 2021).

### 4.2. Research Variables

Two variables are used for the study with reference to different time references such as pandemic and a before pandemic. The dependent variable is the S&P BSE Sensex return (SR), and the independent variable is the advance-decline ratio (ADR).

### 4.3. Model Specification

The impact of ADR on stock market return is studied through a regression model with S&P BSE Sensex return (SR) as the dependent variable and ADR as the independent variable. The degree of dependence of ADR during the Covid and pre-Covid periods is compared after checking the stationarity aspect of the time series data of both SR and ADR using the Augmented Dickey-Fuller (ADF) test. For ease of understanding the S&P BSE Sensex return is symbolised as "SR" and advance-decline ratio is represented as "ADR". For the second part of the study, the ADR data was segregated into two scenarios, overbought scenario (ADR >1) and oversold scenario (ADR≤1). The regression model is used to understand the impact during the overbought and oversold situations.

$$SR_t = \ln (S_t/S_{t-1}) \text{ where } S_t = \text{Closing price of S\&P BSE Sensex on t Date.}$$

$$ADR = \frac{Number\ of\ stocks\ whose\ prices\ advanced\ compared\ to\ previous\ day\ closing\ price}{Number\ of\ stocks\ whose\ prices\ declined\ compared\ to\ previous\ day\ closing\ price}$$

## 5. Data Analysis

### 5.1. Unit Root Test

The Stationarity Test is administered for both the variables SR and ADR at level using E views software and it was observed that both the variables satisfied the stationarity condition as per ADF unit root test. (Table 1 & Table 2).

**Table 1: Augmented Dickey-Fuller Test Result for Stationarity during Covid Period**

| *At Level* | *Intercept* | | *Trend & Intercept* | | *None* | |
|---|---|---|---|---|---|---|
| | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* |
| SR | -18.55683 | 0.0000 | -18.62817 | 0.0000 | -18.17702 | 0.0000 |
| ADR | -13.66783 | 0.0000 | -13.68135 | 0.0000 | -2.006502 | 0.0431 |

*Source:* Author's Compilation

**Table 2: Augmented Dickey-Fuller Test Result for Stationarity in Pre- Covid Period**

| *At Level* | *Intercept* | | *Trend & Intercept* | | *None* | |
|---|---|---|---|---|---|---|
| | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* |
| SR | -46.29738 | 0.0001 | -46.29605 | 0.0000 | -46.28875 | 0.0001 |
| ADR | -26.49090 | 0.0000 | -26.52608 | 0.0000 | -2.245535 | 0.0239 |

*Source:* Author's Compilation

Table 1 and Table 2 confirm that the variables used for the study are satisfying the stationarity condition at 5% significance level. As the p-values are below 0.05, the null hypothesis cannot be accepted and hence the alternative hypothesis is accepted which states that the variables SR & ADR do not have unit root and hence, they are stationary at levels.

Since both the variables are satisfying stationarity condition at level so ordinary least square regression technique is used for both the periods, i.e., for pre-Covid and during Covid period, considering Sensex return "SR" as the dependent variable and the advance-decline ratio 'ADR' as the independent variable.

### *5.2. Advance-Decline Ratio and its impact on Market Return*

#### *5.2.1. During the Covid-19 Pandemic*

The main part of this research paper is to examine how the advance-decline ratio is impacting the market return before and during the pandemic. The following model is used to study the impact of change in ADR on SR using the OLS regression.

$$SR_t = C + b(ADR_t) + e_t$$

The null hypothesis: $H_{01}$ states that ADR has no significant impact on SR or in other words b=0.The result of the OLS regression is depicted in Table 3.

The model indicates that the Sensex return is dependent on the ADR with b= 0.014995 and R-Squared value 0.37432. The variability of SR is explained up to 37.4% by the variability of ADR.

**Table 3: Least Square Regression Result during the Covid-19 Pandemic**

| *Variable* | *Coefficient* | *t-Statistic* | *Prob.* |
|---|---|---|---|
| C | -0.016136 | -11.04577 | 0.0000 |
| ADR | 0.014995 | 13.57440 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.374320 | Mean dependent var | 0.001862 |
| Adjusted R-squared | 0.372289 | S.D. dependent var | 0.013628 |
| S.E. of regression | 0.010798 | Akaike info criterion | -6.212556 |
| Sum squared resid | 0.035909 | Schwarz criterion | -6.188449 |
| Log likelihood | 964.9461 | Hannan-Quinn criter. | -6.202919 |
| F-statistic | 184.2644 | Durbin-Watson stat | 1.936457 |
| Prob(F-statistic) | 0.000000 | | |

*Source:* Author's Compilation

The residual diagnosis is also done through the Breusch-Godfrey serial correlation LM test to understand the existence of serial correlation, and the null hypothesis of no serial correlation could not be rejected. (Table 4)

**Table 4: Breusch-Godfrey Serial Correlation LM Test**

| | | | |
|---|---|---|---|
| F-statistic | 0.133966 | Prob. F (2,306) | 0.8747 |
| Obs*R-squared | 0.271197 | Prob. Chi-Square (2) | 0.8732 |

*Source:* Author's compilation

Though the model may not be used as a predictive model for the movement of the capital market, but this always may be utilised for understanding the relationship of market breadth to the stability of the market performance. The market was performing better during most of the Corona crisis despite the economic slowdown.

### *5.2.2. During Pre-Covid period*

To understand further the impact of ADR in long run, the study initiated to estimate the equation for SR based on daily data for a longer duration of 9 years from March 2011 to March 2020, considered here as pre-Covid duration. The variables meet the stationarity condition, and the OLS regression result is depicted in Table 5 below.

By comparing Table 3 and Table 5, it is observed that the relationship between ADR and SR is almost similar before and during the pandemic. The R-squared value and regression coefficient of independent variable, as per the regression results are very similar for both pre-Covid and during Covid period.

**Table 5: OLS Regression Output for Pre-Covid Duration**

| *Variable* | *Coefficient* | *t-Statistic* | *Prob.* |
|---|---|---|---|
| C | -0.011861 | -29.89361 | 0.0000 |
| ADR | 0.011706 | 34.28784 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.345613 | Mean dependent var | 0.000218 |
| Adjusted R-squared | 0.345319 | S.D. dependent var | 0.010648 |
| S.E. of regression | 0.008616 | Akaike info criterion | -6.669546 |
| Sum squared resid | 0.165240 | Schwarz criterion | -6.664421 |
| Log likelihood | 7431.874 | Hannan-Quinn criter. | -6.667674 |
| F-statistic | 1175.656 | Durbin-Watson stat | 1.943270 |

*Source:* Author's Compilation

### *5.3. Impact of ADR on SR, in Overbought and Oversold Scenarios during the Pandemic*

The study further investigated the short run impact of ADR on SR in two scenarios. One scenario, when ADR >1 and another when ADR ≤ 1.

After checking for stationarity test for both the variables during the two phases an OLS regression model is employed with SR being the dependent variable and ADR as an independent variable. The result estimates that the impact of ADR is more sensitive when ADR ≤ 1 in comparison to that when ADR > 1.

**Table 6: Augmented Dickey-Fuller Test Result for Stationarity for ADR > 1 Scenario**

| *Variables at Level* | *Intercept* | | *Trend & Intercept* | | *None* | |
|---|---|---|---|---|---|---|
| | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* |
| SR | -14.78870 | 0.0000 | -15.35238 | 0.0000 | -5.020090 | 0.0000 |
| ADR | -13.39555 | 0.0000 | -13.58285 | 0.0000 | -1.021111 | 0.2756 |

*Source:* Author's Compilation

**Table 7: Augmented Dickey-Fuller Test Result for Stationarity for ADR ≤ 1 Scenario**

| *Variables at Level* | *Intercept* | | *Trend & Intercept* | | *None* | |
|---|---|---|---|---|---|---|
| | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* | *t-Statistic* | *Prob.* |
| SR | -10.40258 | 0.0000 | -10.36726 | 0.0000 | -8.788853 | 0.0000 |
| ADR | -10.04462 | 0.0000 | -10.00400 | 0.0000 | -0.243204 | 0.5966 |

*Source:* Author's Compilation

### 5.3.1. Case-I: Impact of ADR on SR for ADR ≤ 1 Scenario

The OLS regression with SR as the dependent variable and ADR as the independent variable is studied for the 121 days observations of the pandemic during which ADR ≤ 1, that means the number of stocks that have advanced is either less than or equal to the number of stocks that has declined for a day. The situation during which there is more selling than buying trend. The result is mentioned in Table 8.

**Table 8: OLS Regression Result for ADR ≤ 1 Scenario**

| *Variable* | *Coefficient* | *Std. Error* | *t-Statistic* | *Prob.* |
|---|---|---|---|---|
| C | -0.035748 | 0.003318 | -10.77555 | 0.0000 |
| ADR | 0.041948 | 0.004521 | 9.279007 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.419795 | Mean dependent var | -0.006005 |
| Adjusted R-squared | 0.414919 | S.D. dependent var | 0.012299 |
| S.E. of regression | 0.009407 | Akaike info criterion | -6.478228 |
| Sum squared resid | 0.010532 | Schwarz criterion | -6.432017 |
| Log likelihood | 393.9328 | Hannan-Quinn criter. | -6.459460 |
| F-statistic | 86.09998 | Durbin-Watson stat | 1.875832 |

*Source:* Author's Compilation

### 5.3.2. Case-II: Impact of ADR on SR for ADR >1 Scenario

During the study period of 310 days between April 2020 to June 2021, which is categorised here as pandemic, for 189 days ADR was greater than 1. That means there was more buying than selling. The empirical investigation with SR as the dependent variable and ADR as the independent variable is mentioned in Table 9.

**Table 9: OLS Regression Result for ADR >1 Scenario**

| *Variable* | *Coefficient* | *Std. Error* | *t-Statistic* | *Prob.* |
|---|---|---|---|---|
| C | -0.010025 | 0.002591 | -3.869634 | 0.0002 |
| ADR | 0.011173 | 0.001631 | 6.851119 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.200642 | Mean dependent var | 0.006898 |
| Adjusted R-squared | 0.196368 | S.D. dependent var | 0.011975 |
| S.E. of regression | 0.010735 | Akaike info criterion | -6.220150 |
| Sum squared resid | 0.021549 | Schwarz criterion | -6.185846 |
| Log likelihood | 589.8042 | Hannan-Quinn criter. | -6.206252 |
| F-statistic | 46.93783 | Durbin-Watson stat | 1.848678 |
| Prob(F-statistic) | 0.000000 | | |

*Source:* Author's Compilation

## 6. Results and Discussion

The basic observation from the output of the regression model is that ADR significantly affects SR. The regression coefficient of the independent variable ADR during and before Covid-19 is observed to be 0.0149 and .0117 respectively. Thus, indicating that the ADR affects slightly in a greater way to the market return during the pandemic than that of a normal period before the pandemic. Hence, ADR may be used as an indicator for the investors looking forward to investing in the stock market. However, R-squared values as mentioned in Table 3 and Table 5 are observed to be 34% to 37% respectively, which indicate that there are still other factors that have influenced the stock market other than ADR.

With reference to Table 8 and Table 9 during the oversold situation i.e., when ADR ≤ 1, the market return varies by 0.041 units for every 1 unit change in ADR and the variability in SR is explained up to 41.97% by the variability in ADR. But, during overbought situation i.e., when ADR >1, the market return varies by only 0.011 units for a change of 1 unit by the ADR. So as an outcome of this study it is observed that the stock market is more sensitive to the oversold scenario during the pandemic in comparison to the overbought scenario. Covid duration for this study has a total of 310 days out of which 189 days the market witnessed over-buying condition and 121 days of over-selling condition. So, in other words, the Covid duration is more inclined to a buying behaviour than a selling behaviour. This may be one of the reasons that the market has shown a growth of about 85% during these 310 days while on a study period of about 9 years market has grown only 59%.

Another important observation during the Covid period is that the average trade size is less than that of the normal period. One inference may be drawn from this observation that the investors are putting lesser money than the normal period and hence playing safe by taking the calculative risk. The second inference may be that during Covid-19, it is observed that there is a growth in the percentage of retail participation. This may be the reason that the average trade size per day is lower during the Covid-19 period than that of the normal period. Retail participation is always a good sign for any market. Because of lockdown and work from home option, female participation in stock trading also has gone up. Another interesting observation is the shift in mode of trading. Trading with the mobile phone has grown significantly in comparison to other modes. These changes in stock market acted as a positive sign for the growth and stability of the capital market during the pandemic.

## 7. Conclusion

The capital market in India during the pandemic has not suffered from the surprise shocks, rather attained the highest value ever. Despite high inflation, low GDP growth, the S&P BSE Sensex has shown a rising trend. The best part of this trend is that it is backed by a good market breadth as measured by the advance-decline ratio. During the pandemic the average daily ADR was 1.20. That means the number of stocks advanced is 1.2 times that of the number of stocks declined.

The advance-decline ratio as an important indicator significantly affects the performance of the stock market during the pandemic. The regression coefficient during the pandemic is 0.014995 while the same is 0.011706 for the pre-Covid period. It was also observed that the market return is more sensitive to the oversold situation than that of the overbought situation as the regression coefficient is

0.041948 in the former case while it is only 0.011173 in the latter case. Though there are so many other factors that affect the stock market, but advance-decline ratio (ADR) also may be considered as an important indicator while studying the performance of the stock market in India.

The present study also implies that the stock market performance in India was reasonably stable, except few occasions of the first lockdown during the last week of March 2020. Out of 310 days of data during the Covid period under study, the ADR is greater than 1 for 189 days. That means for most of the days during the pandemic the number of stocks advanced is higher than the number of stocks that declined. This is also the reason that the S&P BSE Sensex has increased by about 85.5 % during the first and second wave of the Covid-19, while it has increased only 59.75% during the 9 years of pre-Covid duration under study.

The outcome of this study has relevance to retail investors who may refer to the advance-decline ratio before investing their hard-earned money in the capital market. Daily Average ADR > 1 may be considered a good market and investors may expect some stability and there may be a lesser chance of any unpredictable risk. Advance-decline ratio represents the market breadth, and it indicates a wholistic movement of all stocks traded in the stock market on a day. Thus, the stock traders get an idea about the market condition before making any decision whether to buy or sell. Regulators also may monitor the ADR to understand if the rise or fall in the stock market is backed by the movement of ADR or not. In other words, regulators get a signal whether the market movement is because of a few stocks, or the majority of stocks as represented by the advance-decline ratio. This empirical study may be further extended by other researchers in the field of behavioural finance to know the psychological mindset of investors that drives ADR in a normal and a pandemic situation.

## References

Baker, S. R., Bloom, N., Davis, S. J., Kost, K., Sammon, M., & Viratyosin, T. (2020). The unprecedented stock market reaction to COVID-19. *The Review of Asset Pricing Studies*, 10(4), 742-758.

Bora, D., & Basistha, D. (2021). The outbreak of COVID 19 pandemic and its impact on stock market volatility: Evidence from a worst affected economy. *Journal of Public Affairs*, 21(4), e2623.

Buszko, M., Orzeszko, W., & Stawarz, M. (2021). COVID-19 pandemic and stability of stock market—A sectoral approach. *Plos one*, 16(5), e0250938.

He, Q., Liu, J., Wang, S., & Yu, J. (2020). The impact of COVID-19 on stock markets. *Economic and Political Studies*, 8(3), 275-288.

Joshi D. & Bhavsar P. (2011). Predicting Nifty 50-Use of advance-decline ratio. *Indian Journal of Applied Research*, 1(3).

Madai, T. (2021). Impact of COVID-19 Pandemic on Stock Market Returns. Available at SSRN 3794199.

Onali, E. (2020). Covid-19 and stock market volatility. Available at SSRN 3571453.

Ozik, G., Sadka, R., & Shen, S. (2021). Flattening the illiquidity curve: Retail trading during the COVID-19 lockdown. *Journal of Financial and Quantitative Analysis*, 56(7), 2356-2388.

Patel, J. (2015). An Analysis of the Advance-Decline Indicator in the Indian Stock Market. *Journal of Finance Issues*. 14(1), 1-11.

PH, H., & Rishad, A. (2020). An empirical examination of investor sentiment and stock market volatility: evidence from India. *Financial Innovation*, 6(1), 1-15.

Salman, A., & Ali, Q. (2021). Covid-19 and its impact on the stock market in GCC. *Journal of Sustainable Finance & Investment*, 1-17.

Zakon, A. J., & Pennypacker, J. C. (1968). An analysis of the advance-decline line as a stock market indicator. *Journal of Financial and Quantitative Analysis*, 3(3), 299-314.

Zaremba, A., Szyszka, A., Karathanasopoulos, A., & Mikutowski, M. (2021). Herding for profits: Market breadth and the cross-section of global equity returns. *Economic Modelling*, 97, 348-364.

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

URL: www.ojcoca.org
DOI: https://doi.org/10.54063/ojc.2021.v42i04.02

# A Study on Impact of Consolidation on the Profitability of Regional Rural Banks in India

**Sandeep Chaudhary[1*] and Mandeep Kaur[2]**
[1]*Research Scholar, University School of Financial Studies, Guru Nanak Dev University, Amritsar, Punjab.*
*E-mail: csandeep090990@gmail.com*
[2]*Professor, University School of Financial Studies, Guru Nanak Dev University, Amritsar, Punjab.*
*E-mail: mandeep.gndu@gmail.com*
[*]*Corresponding Author*

**To cite this paper**

Chaudhary, S., & Kaur, M. (2021). A Study on Impact of Consolidation on the Profitability of Regional Rural Banks in India. *Orissa Journal of Commerce*. 42(4), 12-27.

**Keywords**

Amalgamation, Performance evaluation, Profitability, Regional rural banks

**JEL Classification**

G3, G34, G38, G20

**Abstract:** Consolidation in the form of mergers or amalgamation has always seemed to be an option to revive loss-making and inefficient banks or firms. Consolidation supporters argue that minimizing surplus capacity in banking will eliminate the industry of inefficient operating financial institutions. The present study aimed to empirically analyse the effect of amalgamation on the performance of regional rural banks (RRBs) in India. A paired t-test (univariate analysis) has been employed to evaluate pre- and post-amalgamation comparisons of various profitability proxies. The results revealed that return on equity increased significantly in the post-merger period. In the second stage of analysis, panel regression has been employed; the results confirmed the findings of univariate analysis and revealed a significant increase in ROE in the post amalgamation period. Hence, supporting the theories of value creation of mergers and acquisitions (M &As), the present research states that the profitability performance of regional rural banks in India has increased marginally after the M&As exercise.

## 1. Introduction

Continual finance is an integral part of agriculture and supplementary activities associated with agriculture as a majority of the population depends on agriculture for their livelihood in India. Traditional banking services cater primarily to the needs of the urban population; however, the authorities in India recognized the need for a separate banking institution that caters specifically to the financial needs of the rural population. The Narasimhan Committee recommended establishing an institution to address the problems and needs of the rural poor. On October 2, 1975, the Government of India established the first regional rural bank in India, intending to ensure adequate institutional finance for agriculture and its allied sectors. Regional rural banks pool funds from rural and peri-urban areas to provide credit facilities to agricultural labourers, small or marginal farmers, and rural artisans (Ibrahim, 2016). Regional rural banks (RRBs) are owned in the ratio of 50:15:35 by the Central Government, the relevant state

government, and the sponsor bank (Kumar, 2018). Over the years, regional rural banks have shown significant growth in terms of branch expansion and district coverage, but since its inception, the operational performance of RRBs has always remained under scrutiny.

Following nationalization, regional rural banks in India were projected to accelerate their branch growth, collect deposits, and offer loans to rural communities. Their motto was 'social banking,' and they paid little attention to bank efficiency and profitability. After nearly a decade of operation, regional rural banks' operational performance has pique the interest of Government and authorities. RRBs' major issues include their economic insolvency, lack of funds to mobilize, limited interest revenue, and fierce competition from commercial banks in rural finance as part of priority sector lending (Suresh, 2015). As a result, many committees were formed to gauge and improve the working of RRBs; therefore, the Indian Government, on the recommendations of Reserve Bank of India, had formed several committees from time to time to look after the problems concerned with the functioning of regional rural banks.

For improving the functioning of RRBs in India, The Vyas Committee II, an advisory committee on credit flow to agriculture and related operations, advocated two separate models in 2004: a zonal bank for RRBs in the North-East and state-level rural banks for the rest of the country and suggested the restructuring of RRBs in two phases. In the first stage, amalgamation should be done of all RRBs of the same sponsor banks to create a single unit in the state, and in the second stage, RRBs of different sponsor banks should be amalgamated. Need-based and efficient customer services were expected from amalgamated RRBs due to improved banking joint publicity/marketing efforts, branch mechanization, infrastructure, computerization, and optimum utilization of available trained and experienced workforce. It may also reap the benefits of a vast operating area [economy of scale], improved mobilization of financial resources and credit deployment, and the provision of a broader range of banking services (Kumar, 2018). In September 2005, the decision to amalgamate regional rural banks in India was taken to make them a profitable, efficient, and consolidated rural banking institution.

### *1.1. Rationale Behind Consolidation*

Consolidation is among the most significant facets of finance and strategy research. Mergers are defined as merging two or more distinct entities into a single entity; the resulting firm might adopt any identity, such as an acquirer identity or a completely new identity (Hitt *et al.*, 2000). Acquisition, absorption, and formation into a new entity are the three types of bank consolidations (Okazaki and Sawada, 2007). When the participating banks' strength is almost equal, they are more likely to merge to form a new bank, whereas if one bank dominates the other banks, acquisition or absorption is usually a preferred route (Okazaki and Sawada, 2007). The fundamental goal of any merger, whether via purchase or consolidation, is for the amalgamated entity's total advantages to be greater than the sum of the two independent premerger banks (Pilloff, 1998). Hence, the aggregate value of the new entity must be higher than the sum of their separate combining entities. If the banks undergoing consolidation do not have a sound and leading bank, the government urges them to merge into a new consolidated bank. Consolidation supporters argue that minimizing overcapacity in banking will eliminate the industry

of inefficiently operating credit institutions, and it is seen as a critical way to achieve operational synergies. However, in the banking industry, consolidation is beneficial up to a certain size and scale (Amel *et al.*, 2004). In addition, synergies are contingent on the possibility of economies of scale and scope (Vennet, 1996). In India, regional rural banks were consolidated into a larger entity that serves a larger target audience and achieves operational synergies as well. In the Indian context, especially in the RRBs amalgamation scenario, the achievement of operational synergies has been considered a research problem. So, the present study tried to evaluate the impact of amalgamation on the profitability performance of RRBs through both univariate and multivariate analysis.

## 2. Review of Literature

The fundamental motivation for bank consolidation, according to industry practitioners, is improved revenues and cost reduction. As a result, much of the empirical work examining the benefits of mergers focuses on profitability and efficiency. In the Indian scenario, especially in regional rural banks, Kumar (2018) evaluated the impact of the merger on net profits and accumulated losses of RRBs in Bihar and inferred a positive impact of the merger on net profits and accumulated losses. Kumar *et al.* (2017) examined progress and changes that took place in the performance of regional rural banks in India during the pre and post-merger period and concluded that the performance of RRBs had improved after amalgamation. Das (2014) analysed the performance of the regional rural banks in the pre and post-merger period and concluded that the RRBs are performing better in the post-merger period. Gagandeep (2015) evaluated the performance of regional rural banks in Himachal Pradesh and revealed that the performance of RRBs in Himachal Pradesh had shown remarkable growth in post amalgamation years in branch expansion, deposits, loans and advances, recovery performance, and profitability growth. Chakrabarti (2013) evaluated the profit and loss of RRBs in Bihar for twelve years from 2000-01 to 2011-12 and concluded an improvement in net profits after amalgamation. Mishra (2006) investigated the RRBs performance and concluded that performance of RRBs was affected by the geographical location and sponsor bank. In addition, investments have a positive influence on the performance of profit-making RRBs.

In a dissimilar institutional environment of the Nigerian banking industry, Ajao and Emmanuel (2013) analysed the level of profitability and observed an increase in profitability from the pre to post-consolidation period. On contrary, Joshua (2010) evaluated the influence of M & As (mergers and acquisitions) on the financial efficiency of banks in Nigeria. He deduced no significant difference between the pre and post mergers and acquisitions period regarding net assets, profit after tax, and gross earnings. Kemal (2011) evaluated the effect of the merger on the profitability ratios of two banks( Royal Bank of Scotland (RBS) and ABNAMRO Bank) from 2006-to 2009 and concluded a decrease in profitability performance after the merger. Kalhoefer and Badreldin (2009) examined the performance of Egyptian banks that underwent mergers or acquisitions between 2002 and 2007, finding mixed outcomes in terms of enhanced profitability following banking reforms (mergers and acquisitions).

Occidental scholars such as Havrylchyk (2004) analysed mergers and acquisitions in Poland between 1997 and 2001 and inferred that the majority of the mergers (five out of seven cases) exhibited increased profitability. On similar lines, Rhoades (1997) stated that the consolidation resulted in considerable

cost savings, an increase in ROA, and a favourable stock price reaction. Campa and Hernando (2006) analysed the influence of merger on the performance of the European banking industry and observed significant improvements in the target banks' performance after the merger. Cornett *et al.* (2006) examined the long-term operating performance of publicly and non-publicly traded bank mergers from 1990 to 2000 and found that return on equity, assets, and net interest margin increased significantly following the merger.

On the contrary, Linder and Crane (1992) analysed the performance of all mergers of commercial banks from1982-1987 in the New England region and observed that acquired entities or banks have difficulty increasing their profitability after mergers. Vennet (1996) examined the performance effects of acquisitions and mergers between E.C. credit institutions from 1988-to 1993 and observed insignificant changes in efficiency and profitability post-merger era. In the Japanese banking industry, Okazaki and Sawada (2007) measured the influence of consolidation of banks directed by Government policy and concluded that consolidations had a substantial positive impact on the growth of deposits and a negative impact on profitability.

Prior research seems to be sceptical about the influence of mergers and acquisitions on profitability. The performance after merger majorly depends on the sample period, institutional environment, and performance of merging entities in the pre-merger period. In addition, Government intervention possessed a significant role in the fate of a merger. In India, especially in the rural banking setting, the government decided the route of the merger of regional rural banks with a motive to revive them from financial trouble. Hence, the present study primarily explores the relationship between mergers and the profitability of RRBs in India. Previous studies evaluated the impact of amalgamation on regional rural banks on a micro-level, taking few banks or focusing on a particular region. In addition, the majority of the studies taking variables to evaluate the impact of amalgamation of RRBs were confined to geographical coverage, branches, deposits, and credit. Few studies, such as Kumar (2018), Das (2014), Gagandeep (2015), and Chakrabarti (2013) measured net profits only as a proxy for the profitability of regional rural banks in the post-merger period**.** Therefore, the present study adds to the existing limited body of knowledge by evaluating the effect of amalgamation of RRBs on profitability performance under selected proxies, especially at the macro level. However, it is also likely among the few studies that assessed the impact of amalgamation using multivariate analysis, taking into account the majority of RRBs that amalgamated between 2005 and 2014.

## 3. Conceptual Framework and Hypotheses Development

To compare the profitability performance of amalgamated RRBs before and after amalgamation, various performance indicators are presented in Table 1, extracted from relevant amalgamation literature. Symbols A and B in the following table represent after and before amalgamation in the hypothesized outcomes column respectively.

Conventional pre-post amalgamation comparisons do not account for various bank-specific control variables, even though some control variables affect the bank's profitability performance and amalgamation. Therefore, the present study attempt to evaluate the impact of amalgamation on the profitability of merged RRBs while adjusting for the influence of other bank-specific factors, as mentioned below:

**Table 1: Proxies used for Measuring Profitability Performance**

| *Performance Indicators* | *Measurement* | *Null Hypotheses* |
|---|---|---|
| Return on Assets (ROA) | Net Income or Profit/Total Assets | $ROA_A = ROA_B$ |
| Return on Equity (ROE) | Net Income or Profit/ Total Equity | $ROE_A = ROE_B$ |
| Net Interest Margin (NIM) | Net Interest Revenue/ Total Assets | $NIM_A = NIM_B$ |
| Net Financial Margin (NFM) | Net Interest Revenue / Total Earning Assets | $NFM_A = NFM_B$ |
| Net Margin (NM) | Net Operating Income / Total revenue | $NM_A = NM_B$ |

*Sources:* Authors' Own Compilation

**Table 2: List of Variables used in Multivariate Analysis**

| *Variables* | *Description* |
|---|---|
| *Dependent variable* | |
| Profitability | Profitability includes ratios such as return on assets and return on equity. |
| *Independent and control variables* | |
| Amalgamation | Represented by Dummy variable which consider the value of zero(0) for period prior amalgamation and one(1) for the years after amalgamation. |
| Risk | Measured by dividing loans and advances from total assets, |
| Diversification | Calculated by dividing non-interest income or other income by total assets |
| Size | Natural logarithm of total assets |
| Efficiency | Represented by cost to income ratio (CTIR) |
| Liquidity | Measured by dividing liquid assets by total assets |
| Capitalisation | Measured by dividing total capital by total assets. |

*Sources:* Authors' Own Compilation

### *3.1. Conceptual Framework*

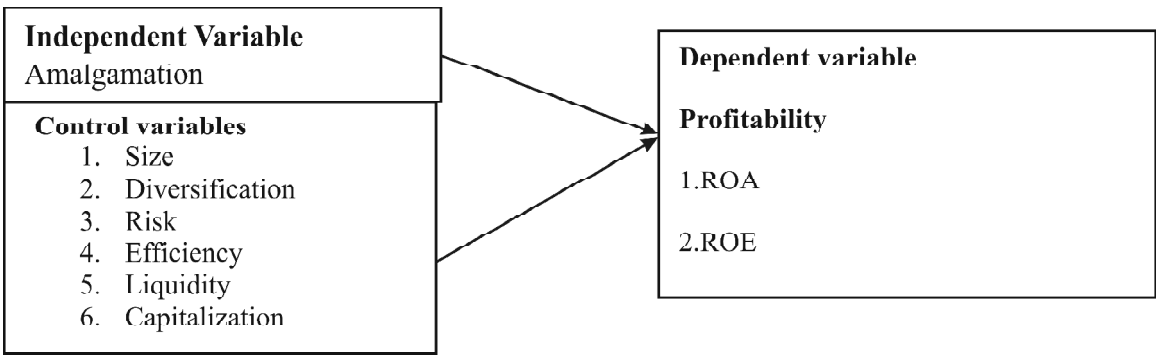


**Figure 1: Research Framework of the impact of amalgamation on the profitability performance of amalgamated RRBs controlling the influence of Bank specific variables.**

*Source*: Authors' Own Compilation

Figure 1 demonstrates the relation between amalgamation and the profitability performance of amalgamated RRBs to comprehend the interaction between the dependent and independent variables. The predicted direction of the link between dependent and independent variables is outlined below based on previous research findings.

### *3.2. Variables Definition and Model Specification*

In banking literature, the most common proxies to evaluate profitability performance in multivariate analysis (Panel regression) are return on assets (ROA) and return on equity (ROE). ROA and ROE are taken as dependent variables based on their significance and frequent use as a proxy of profitability in recent times in order to evaluate the impact of mergers and acquisitions. Hence the present study, following the work done by various authors in the same domain, took ROA and ROE as a dependent variables to evaluate the impact of amalgamation on the same. In addition, to facilitate the comparison with previous studies, the ROA and ROE have been employed in the present study as a proxy for profitability. Following are the description and lists of various authors who have taken ROA and ROE as a proxy for profitability.

#### *Return on Assets (ROA)*

The return on assets (ROA) has been used to measure a bank's profitability. It depicts a company's earnings in relation to its assets. The higher the value of this ratio, the better the bank's performance. Studies such as Okazaki and Sawada (2007), Kolapo *et al.* (2016), Bernad *et al.* (2013) used ROA as a dependent variable for measuring profitability. Mishra (2006), Bhattacharya, and Dutta (2016) used ROA as an indicator of the profitability of Regional Rural Banks, denoted it as Net income to Total Assets (NITA). Goenka (2017) has taken ROA as a profitability indicator of regional rural banks in Rajasthan.

#### *Return on Equity (ROE)*

Return on Equity (ROE) is income earned by banking institutions concerning shareholders' equity. It is represented by net income divided by total equity. ROE demonstrates how well a bank's management uses shareholder funds. Studies such as Campa and Hernando (2006), Soyemi *et al.* (2013), Altunbas and Marques (2008) used ROE as a dependent variable to measure profitability.

#### *3.2.1. Independent and Bank-specific Control Variables*

*Amalgamation and Profitability:* The relationship between profitability and amalgamation has been empirically tested by various authors, researchers and scholars such as Bhattacharya and Dutta (2016) who observed improved performance of RRBs in West Bengal after amalgamation concluded that one of the possible reasons for improvement after amalgamation was greater recovery and low disbursal of farm credit. Bernad *et al.* (2013) found that profit improvements following the merger are largely reliant on the identities of the merging firms. Altunbas and Marques (2008), noted that in inter-border mergers and acquisitions, wide commonalities among merging entities are favourable to enhanced performance, while variations in deposit strategies, loan and earnings can be detrimental to performance

in domestic mergers but differences intechnology, capitalization, and innovation strategies have been proven to enhanced performance. Cornett *et al.* (2006) observed that better performance following the merger was a result of the merging firms' revenue enhancement and cost-cutting initiatives. Havrylchyk (2004) reported that five out of seven acquisitions boosted profitability through cost reduction, total factor productivity increases, or greater market power. Rhoades (1997) stated that cost-cutting due to efficient operations and efficient acquiring firm are likely to be major determinants to a merger having a positive influence on efficiency and profitability. Okazaki and Sawada (2007) observed the negative impact of consolidation on profitability due to a lack of a strategic vision for the new organisation and higher coordination costs in the case of mergers of equals due to the absence of a dominating participant. Vennet (1996) found that scale economies following the merger are the most likely explanation for enhanced operational efficiency and profit level. Linder and Crane (1992) reported a negative or insignificant impact of the merger on profitability due to low income of business when compared to competitors and integrating an different institutions with incompatible policies of management and operating processes. The researchers always seem to be dubious yet have a positive outlook about the impact of consolidation on profitability performance, so accordingly, the hypothesis has been developed.

$H_{01}$: There is a positive and significant impact of amalgamation on the Return on Assets of amalgamated RRBs.

$H_{02}$: There is a positive and significant impact of amalgamation on the Return on Equity of amalgamated RRBs.

### *3.2.2. Bank-specific Variables*

*Diversification:* Bank Diversification helps financial institutions and banks to diversify their revenue sources to reduce risks or dependence on one source of income. During the 1990s financial sector reforms, RRBs were also permitted to do various non-fund business operations because the conventional financial intermediation was not lucrative for them. However, after amalgamation, RRBs were expected to extend to new geographic locations, which eventually helped them diversify their revenue operations rather than traditional intermediation. Diversification is represented by non-interest income, which includes commission, fees, and service charges divided by total assets. Goenka (2017) observed a positive and significant impact of bank diversification on RRBs' profitability in Rajasthan.

*Risk*: RRBs are scheduled commercial banks whose primary sources of revenue are lending and investing (Misra, 2006). Risk is represented by total credit in loans and advances by total assets; a higher level of risk entails a higher amount of profit (Cebenoyan and Strahan, 2004). As a result, the model contains a risk variable that describes the firm's operations. Misra (2006) observed positive and significant relation (FE) between advances and profitability of RRBs between 1993-and 2003. Bernad *et al.* (2013) found that the risk adopted by each savings bank in Spain improved profitability.

*Size*: The size of any bank, including RRBs, affects its profitability because larger banks can benefit from economies of scale. It is represented by the natural logarithm of total assets; therefore, it is expected to capture economies of scale. The structural consolidation of RRBs was also aimed to take benefits of economics of scale. Studies such by Okazaki and Sawada (2007) found a positive

relationship between size and profitability. On the other hand, Kolapo *et al.* (2016) observed an inverse relationship between the size and profitability of the bank.

*Efficiency*: The effectiveness of RRBs in expenditure management is an internal element that may have a major impact on their financial health (Mishra, 2006). The efficiency is represented by cost to income ratio (CTIR). While rising operational expenses are necessary to support increased company activities, rising operating costs compared to net income cause worry and show inadequate expenditure management. Hence, the cost to income ratio (CIR) is expected to negatively affect the profitability of RRBs. Mishra (2006) observed a negative influence of efficiency on the profitability of RRBs.

*Liquidity*: Lower rates of return are closely attributed to liquid assets. It is anticipated that increased liquidity often attracts low profitability (Molyneux and Thornton, 1992). The liquidity is represented through the liquid assets of the RRBs as a proportion of their assets. Misra (2006) observed an insignificant impact of liquidity on the profitability of RRBs.

*Capitalization*: A well-capitalized bank offers greater strength to function through financial crises and enhanced depositor safety under uncertain macroeconomic situations (Soyemi *et al.*, 2013). The RRB recapitalization program, which was initially implemented in 1994-95, has had an impact on profitability. The capital ratio is regarded as an essential tool for assessing a bank's safety and soundness. According to Mbizi (2012), a higher degree of capital adequacy positively impacts a bank's overall performance. Hence positive effect on profitability is expected.

To evaluate the impact of amalgamation and control the influence of bank-specific variables on the profitability of RRBs, the following regression equations have been drafted. Profitability is measured by two measures return on assets (ROA) and return on equity (ROE).

$$ROA_{it} = \alpha + \beta 1(amalgamation) + \beta 2\ (Bank\ specific\ control\ variables) + \varepsilon_{it} \qquad (1)$$

$$ROE_{it} = \alpha + \beta 1(amalgamation) + \beta 2\ (Bank\ specific\ control\ variables) + \varepsilon_{it} \qquad (2)$$

According to equations (1) & (2), the positive coefficient and sign of amalgamation exhibit a positive impact of post amalgamation dummy variable on the profitability performance of amalgamated RRBs.

## 4. Research Methodology

### *4.1. Sample and Data Collection*

The sample units used in the study consist of regional rural banks established after amalgamation during 2005 to 2014. There were seventy- five merger cases between 2005-06 to 2013-2014, but after excluding remerger cases[1] , thirty- nine cases were chosen for the study( Appendix A). The analysis is based on secondary data that was manually collected from yearly financial statements of regional rural banks in India provided by the National Bank for Agriculture and Rural Development (NABARD) and the Reserve Bank of India's official website.

### *4.2. Tools and Techniques*

Univariate tests of performance comparison have been applied to the sample units to obtain the most authentic and credible empirical results. To check if there exists any significant difference in performance

variables, consolidated premerger (pro forma) figures of merging banks are compared to the post-merger profitability of the consolidated entity. For ten years (i.e., 5 years before through 5 years after amalgamation), ratio analysis has been employed to measure different ratios for individual RRB, and amalgamation year has been considered 0. After that, the mean values of different variables for each RRB over the pre and post amalgamation windows (–5 to –1 and +1 to +5) are calculated, excluding the year of amalgamation between the pre-and post-merger periods, a paired t-test has been used. The rationale behind five years pre and post-merger is that a more extended period permits averaging the unusual expense items. In addition, to the distance from the time of the merger, it has been observed that it becomes difficult to establish a causal relationship between the merger and its consequences (Bernad *et al.,* 2013). Hence, the post-merger period of 5 years seems adequate to capture the impact of the merger on the performance of RRBs.

Further, the impact of amalgamation on the profitability performance of amalgamated sample banks was evaluated by applying panel data estimation approaches while adjusting for the impact of other bank-specific control variables. We have taken regional rural banks formed after amalgamation from 2005 to 2014. The data was analysed from a provincial panel spanning six years premerger to 5 years post-merger. The period of study is from 2000-01 to 2018-19.

## 5. Results and Discussion

### *5.1. Paired T-Test (Univariate Analysis)*

Table 3 shows the empirical results obtained using a paired t-test on the sample. Empirical proxies are selected for each performance metric, and mean values are determined twice, first for five years before amalgamation and again for five years following amalgamation. Afterward, the mean values changes of each profitability proxy are presented in the table. Table 3 displays the results of the paired t-test along with p-values for determining if there are significant differences between the mean values of proxies. Since the paired t-test is a parametric test, assumptions of normality and the presence of outliers were checked. It was found that data approaches towards normality and no significant outliers were detected in the data.

**Table 3: Results of Paired T-Test for Amalgamated RRBs in India**

| *Profitability Indicators* | *N* | *Mean Before Amalgamation* | *Mean After Amalgamation* | *Mean change* | *P-value* |
|---|---|---|---|---|---|
| Return on Assets (ROA) | 39 | 1.262 | 1.331 | 0.069 | 0.5988 |
| Return on Equity (ROE) | 39 | 15.948 | 20.769 | 4.821 | 0.0362** |
| Net Interest Margin (NIM) | 39 | 3.327 | 3.063 | -0.264 | 0.0552 |
| Net Financial Margin (NFM) | 39 | 3.352 | 3.212 | -0.14 | 0.2583 |
| Net Margin (NM) | 39 | 14.568 | 16.646 | 2.078 | 0.1358 |

*Source:* Authors' Own Calculations

*Note:* **Significant at 5 %.

The profitability performance of sample RRBs witnessed varied performance after amalgamation. The results of paired t-test (Table 3) reveal that there has been an increase in Return on Assets (ROA), Return on Equity (ROE), and Net margin(NM) by 0.069, 4.821, and 2.078 after amalgamation, whereas Net Interest Margin (NIM) and Net Financial Margin (NFM) has shown a decrease in the post amalgamation period by 0.264, and 0.14 respectively. Although the decrease in NIM and NFM is not statistically significant. Return on equity increased significantly in the post amalgamation period. Although from the above analysis, there is no conclusive evidence that mergers or amalgamation improve profitability because, except for ROE, no other variable showed a significant increase in the post-amalgamation period but an increase in three variables out of five signals marginal improvement of profitability performance after amalgamation.

### *5.2. Panel Data Analysis*

To assess the appropriateness of the models presented in the study, prefatory diagnostic tests have been performed. To determine the variables' stationarity unit-root test has been carried out (Levin *et al.*, 2002). Variables involved in the study are stationary as the p-value for individual factors is inferior to 0.05. All assumptions, including multicollinearity, autocorrelation, and heteroskedasticity, have been examined and modified to ensure that the models provided in the research are appropriate. Clustered robust standard errors were reported to account for heteroskedasticity (Hoechle, 2007).

**Table 4: Pairwise Correlation between Variables used in the Study**

| | *Efficiency* | *Risk* | *Liquidity* | *Capitalisation* | *Diversification* | *Size* | *Amalgamation* |
|---|---|---|---|---|---|---|---|
| Efficiency | 1.0000 | | | | | | |
| Risk | -0.1950** | 1.0000 | | | | | |
| | 0.0000 | | | | | | |
| Liquidity | 0.0129 | -0.5476** | 1.0000 | | | | |
| | 0.7893 | 0.0000 | | | | | |
| Capitalisation | -0.1721** | 0.1708** | -0.0774 | 1.0000 | | | |
| | 0.0003 | 0.0004 | 0.1093 | | | | |
| Diversification | -0.0415 | 0.2145** | -0.2884** | 0.0308 | 1.0000 | | |
| | 0.3908 | 0.0000 | 0.0000 | 0.5245 | | | |
| Size | -0.1022* | 0.2162** | -0.0389 | -0.1504** | -0.0595 | 1.0000 | |
| | 0.0343 | 0.0000 | 0.4217 | 0.0018 | 0.2191 | | |
| Amalgamation | -0.1197* | 0.2199** | -0.0901 | -0.1214* | -0.1558** | 0.5176** | 1.0000 |
| | 0.0131 | 0.0000 | 0.0623 | 0.0119 | 0.0012 | 0.0000 | |
| *Diagnostics of Multicollinearity* | | | | | | | |
| **VIF** | 1.091 | 1.658 | 1.527 | 1.110 | 1.151 | 1.426 | 1.461 |

*Source*: Authors' Own Compilation

*Note:* Results from Spearman correlation coefficient have been shown in the table.

**Significance exists at 0.01 level.

* Significance exists at 0.05 level.

Table 4 displays a pairwise correlation matrix indicating the robust correlation among the variables. As can be seen from the table, variables do not have a strong correlation with each other. The excess correlation coefficient of explanatory variables above 0.80 signals the problem of multicollinearity (Kennedy, 2003). The models have proven to be devoid of multicollinearity since Variance inflation factors (VIFs) are within acceptable bounds (VIF<10).

**Table 5: Prefatory Test and Model Selection**

| | *ROA* | | *ROE* | |
|---|---|---|---|---|
| Breusch–Pagan Test (heteroskedasticity) | $\chi^2$ (7) = 783.49 | Prob > $\chi^2$ = 0.00 | $\chi^2$ (1) =65.8587 | Prob > $\chi^2$ = 0.00 |
| Hausman Test (Fixed Effect or Random Effect) | $\chi^2$ (6) = 55.4411 | Prob >$\chi^2$ = 0.00 | $\chi^2$ (6) = 8.2652 | Prob > $\chi^2$ = 0.219308 |
| Model accepted | Fixed effect | | Random effect | |

*Source:* Authors' Own Calculation

The Breusch–Pagan test was used to determine the presence of heteroskedasticity in the model. It can be seen from the results shown in Table 5 that both models have a problem of heteroskedasticity. In order to address the problem of heteroskedasticity, robust standard errors have been reported and interpreted in the study. A Durbin-Watson (D-W) test was performed to assess whether the residuals were uncorrelated. D-W test statistics less than 1 or greater than 3 were considered problematic (Field, 2013; Menard, 2002). In both models, the D-W value lies between the specified range(1-3). It indicates that the previous values of ROA/ROE (i.e., the dependent variables) have no bearing on their future values. Finally, the Hausman test has been employed to confirm the aptness of the fixed effect (FE) or random effect (RE) model. The findings of the Hausman test favour FE for ROA and RE for the ROE model.

The results of panel data analysis (shown in Table 6) indicates a statistically insignificant impact of amalgamation on the return on assets of amalgamated RRBs. While checking the relationship between amalgamation and return on assets, the coefficient of amalgamation shows a positive yet insignificant impact of amalgamation on the return on assets. The results are aligned with the findings of Okazaki and Sawada (2007), Dagogo and Okorie (2014), and Kolapo *et al.* (2016) and contradict Bernad *et al.* (2013). On analysing the relationship between amalgamation and return on equity, the post amalgamation dummy variable remains positive and significant, implying a significant increase in return on equity after amalgamation. Hence, H2 is accepted. The findings are align with the prior studies like Altunbas and Marques (2008) & Campa and Hernando (2006), who observed significant improvements in return on equity after the merger but contrary with the results of Said *et al.* (2008), who observed negative influence of merger on return on equity. The results revealed that the return on equity and return on assets of the amalgamated RRBs had benefitted from restructuring activity (M & As) initiated by the Government of India. This may be attributed to cross-organization sharing of management expertise and proper and structured implementation of the amalgamation

process. Synergies created through overhead cost-cutting may be a reason for successful M & As exercise.

Additional variables such as bank size, diversification, risk, efficiency, liquidity, and capitalization have been included in the regression equation to control the effects of bank-specific variables. Among these variables, bank size has a negative and significant effect on return on equity and return on assets. This implies that elevated assets of banks do not contribute to increasing profitability; instead, it has an adverse effect on them. The findings align with Kolapo *et al.* (2016) and Soyemi *et al.* (2013), which confirm that bank size is inversely related to profitability. Diversification has a significant positive effect on dependent variables, i.e., ROA and ROE, showing that income from other operations along with intermediation activities of banks assist in achieving enhanced profitability. Risk has a positive and significant influence on ROA and ROE. Granting loans and advances proved lucrative for the banks. Aligned with Bernad *et al.* (2013), the results revealed that risk adopted by banks has a positive impact on their profitability. The coefficient of efficiency is negative and significant, impacting ROA and ROE, which implies an increase in cost or inefficiency eventually reduces profitability, which is confirmed by Mishra (2006), who observed a negative and significant impact of efficiency on profitability of RRBs. The liquidity of banks is found to have an insignificant impact on the profitability of RRBs. Misra (2006) observed an insignificant impact of liquidity on the profitability of RRB.

**Table 6: Results of Panel Data Analysis**

| | *Dependent Variables* | | | |
|---|---|---|---|---|
| *Independent and Control variables* | *Return on Assets(ROA)* | | *Return on Equity(ROE)* | |
| | *Coefficient(p-value)* | *Robust Standard errors* | *Coefficient (p-value)* | *Robust Standard errors* |
| Intercept | 4.644776 ( 0.002)*** | 1.383816 | 61.34944 (0.001) *** | 17.67701 |
| Amalgamation | 0.1669875 (0.152) | 0.1141282 | 3.755208 (0.026) ** | 1.687827 |
| Size | -.2868946 ( 0.013)** | .1098702 | -2.499941(0.006)*** | .911073 |
| Diversification | .6089085 (0.000) *** | 0.1410192 | 8.552214 (0.000)*** | 1.7381 |
| Risk | 0.0153933(0.0052)*** | 00.007678 | 0.169351 (0.042)** | .0831896 |
| Efficiency | -0.014064(0.006)*** | 0.0047962 | -.2690205 (0.002)*** | .0866295 |
| Liquidity | -.0000725(0.985) | 0.0037509 | .0559255 ( 0.454) | .0747517 |
| Capitalisation | 0.0014326(0.947) | 0.0215697 | -1.284568 (0.007)*** | .4794172 |
| $R^2$(Within) | 0.52 | | 0.54 | |
| Model fit | F(7, 38) = 7.71 Prob > F = 0.0000 | | Wald $\chi^2$ (7) = 83.63 Prob > $\chi^2$ = 0.0000 | |

*Source:* Authors' Own Calculations

*Note:* Three***, two ** asterisks indicates statistical significance at 1%, 5% and level respectively.

## 6. Conclusion

The present study examines the profitability performance of regional rural banks in India before and after the merger. Through paired t-test and panel data analysis, the study evaluated the effect of amalgamation on the performance represented by the profitability of merged RRBs. The empirical results provided by the univariate analysis exhibited varied performance of RRBs in terms of profitability after the merger. Selected proxies for profitability exhibit insignificant change shown by paired t test except ROE after amalgamation compared to before amalgamation. The panel data methodology signals a positive and significant impact of amalgamation on RRBs profitability (ROE) and reflects that equity return increased significantly in the post- amalgamation period. Return on assets showed positive but insignificant growth in the post-merger period. Hence, the present study supports the theories of value creation of mergers and acquisitions.

On the whole, it can be inferred from the present research that the amalgamation of RRBs, which is initiated and supervised by the Government of India, brings a marginal increase in the profitability performance of banks. The present finding supports that RRBs amalgamation results in improved ROA and ROE. However, it would entirely not be accurate to assume, on the basis of this study, that M&A activities are entirely positive for banks since some parameters show a downward trend after amalgamation. Consequently, based on the current strategy adopted by the Central Government regarding RRBs amalgamation, the study recommends the Government to decide a dominant participant or a leader bank before the amalgamation of regional rural banks. In addition, our results also revealed that diversification and credit risk have a positive and significant relationship with the profitability of RRBs; in contrast, cost inefficiency deteriorated RRBs' profitability.

The scope of this research is restricted to the limited variables that indicate profitability and their influence on mergers and acquisitions. Different proxies of profitability could be used to reconfirm the results. A cross-state analysis is suggested in future studies to validate the current study's findings. Future studies are advised to explore the impact of the second phase of amalgamation on regional rural banks or compare the first phase of amalgamation with the second phase of amalgamation.

## References

Ajao, S., & Emmanuel, A. (2013). Banking industry consolidation and financial performance of selected quoted banks in Nigeria. *Journal of Applied Finance & Banking, 3*(3), 1-16.

Altunbaº, Y., & Marqués, D. (2008). Mergers and acquisitions and bank performance in Europe: The role of strategic similarities. *Journal of economics and business*, *60*(3), 204-222.

Amel, D., Barnes, C., Panetta, F., &Salleo, C. (2004). Consolidation and efficiency in the financial sector: A review of the international evidence. *Journal of Banking & Finance*, *28*(10), 2493-2519.

Bhattacharya, M., & Dutta, P. (2016). Restructuring strategies of regional rural banks (RRBs) of West Bengal: An empirical study. *Business Spectrum,6* (1),1-14.

Bernad, C., Fuentelsaz, L., & Gomez, J. (2013). The consequences of mergers on the profitability of Spanish savings banks. *The Service Industries Journal*, 33(2), 266-278.

Campa, J. M., & Hernando, I. (2006). M&As performance in the European financial industry. *Journal of Banking &Finance*, *30*(12), 3367-3392.

Chakrabarti, M. (2013). Impact of merger on the profitability performance of Regional Rural Banks (RRBS) in India: A region-wise comparative study. *Asian Journal of Research in Banking and Finance*, *3*(8), 53-61.

Cornett, M. M., McNutt, J. J., &Tehranian, H. (2006). Performance changes around bank mergers: Revenue enhancements versus cost reductions. *Journal of Money, Credit, and Banking*, *38*(4), 1013-1050.

Cebenoyan, A.S., & Strahan, P.E. (2004). Risk management, capital structure and lending at banks. *Journal of Banking & Finance*, 28, *19–43*.

Dagogo, D. W., & Okorie, P. I. (2014). The Post Consolidation Asset Base: Effect on Financial Leverage, Efficiency and Profitability of Nigerian Banks. *International Journal of Economics and Finance*, *6*(10), 280-287.

Das, S. (2014). Performance mantra of the regional rural banks: An evaluation between the pre-merger and post-merger Era. *Jindal Journal of Business Research*, *3*(1-2), 14-28.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics.* (4th ed.).Sage.

Goenka, N.(2017). *Analysis of operational efficiency of regional rural banks in Rajasthan* (Doctoral dissertation, University of Kota).Shodhganga.

Gagandeep (2015). Performance of regional rural banks pre and post amalgamation: A study of Himachal Pradesh. *International Journal of Research in Commerce & Management, 6(2)*,76-81.

Havrylchyk, O. (2004). Consolidation of the Polish banking sector: Consequences for the banking institutions and the public. *Economic Systems*, *28*(2), 125-140.

Hitt, M. A., Harrison, J. S., and Ireland, R. D. (2000) Mergers and Acquisitions: A guide to creating value for stakeholders, New York, USA.

Hoechle, D. (2007). Robust standard errors for panel regressions with cross-sectional dependence. *The stata journal*, *7*(3), 281-312.

Ibrahim, M. S. (2016). Role of Indian regional rural banks (RRBs) in the priority sector lending: An analysis. *International Journal of Computer Science*, *2*(1), 11 - 23

Joshua, O. (2011). Comparative analysis of the impact of mergers and acquisitions on financial efficiency of banks in Nigeria. *Journal of Accounting and Taxation*, *3*(1), 1-7.

Kumar (2018). Performance of regional rural banks (RRBs) in Bihar : An analytical study, *International Journal of Emerging Technologies and Innovative Research*, 5 (1),756-762.

Kumar, S., Goyal, V., & Sharma, P. (2017). Performance Evaluation of Regional Rural Banks (RRBs) in India. *International Journal of Management, IT and Engineering*, *7*(4), 202-230.

Kalhöfer, C., & Badreldin, A. (2010). The Effect of Mergers and Acquisitions on Bank Performance in Egypt. *Journal of Economic Policy and Research*, *6*(1), 74-85.

Kolapo, F., Ajayi, L., & Aluko, O. (2016). How is size related to profitability? Post-consolidation evidence from selected banks in Nigeria. *International Journal of Finance & Banking Studies (2147-4486)*, *5*(4), 30-38.

Khan, M. A., Choudary, G. M., Asad, M., Khan, M. A., & Naqvi, S. M. H. (2013). Operational efficiency of Islamic banks: The case of Malaysia and Pakistan. *Interdisciplinary Journal of Contemporary Research In Business*, *5*(3), 660-668.

Kemal, M. U. (2011). Post-merger profitability: A case of Royal Bank of Scotland (RBS). *International Journal of Business and Social Science*, *2*(5), 157-162.

Kennedy, P. (2003). Chapter 17: Panel data. *A Guide to Econometrics. 5th Edition. The MIT Press, Cambridge, MA.*

Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: Asymptotic and finite-sample properties. *Journal of Econometrics*, *108*(1), 1–24.

Linder, J. C., & Crane, D. B. (1993). Bank mergers: Integration and profitability. *Journal of Financial Services Research*, *7*(1), 35-55.

Mbizi, R. (2012). An analysis of the impact of minimum capital requirements on commercial bank performance in Zimbabwe. *International journal of independent research and studies*, *1*(4), 124-134.

Menard, S. (2002). *Applied logistic regression analysis* (Vol. 106). Sage.

Misra, B. S. (2006). The Performance of Regional rural banks (RRBs) in India: Has past Anything to Suggest for future. *Reserve bank of India occasional papers*, *27*(1), 89-118.

Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of banking & Finance*, *16*(6), 1173-1178.

Ozili, P. K. (2015). Determinants of bank profitability and basel capital regulation: Empirical evidence from Nigeria. *Research Journal of Finance and Accounting*, *6*(2), 124-131.

Pilloff, S. J. (1996). Performance changes and shareholder wealth creation associated with mergers of publicly traded banking institutions. *Journal of Money, Credit and Banking, 28*(3), 294-310.

Reserve Bank of India. (2008). Efficiency, productivity and soundness of the banking sector. *Report on Currency and Finance: 2006-08*, *2*, 393-446.

Rhoades, S. A. (1998). The efficiency effects of bank mergers: An overview of case studies of nine mergers. *Journal of Banking & Finance*, *22*(3), 273-291.

Said, R. M., Nor, F. M., Low, S. W., & Rahman, A. A. (2008). The efficiency effects of mergers and acquisitions in Malaysian banking institutions. *Asian Journal of Business and Accounting*, *1*(1), 47-66.

Okazaki, T., & Sawada, M. (2007). Effects of a bank consolidation promotion policy: Evaluating the 1927 Bank Law in Japan. *Financial History Revien, 14*(1), 29-61.

Suresh, R. (2015). Regional rural banks and their performance–An empirical study. *Journal of Rural Development*, *34*(3), 285-303.

Soyemi, K. A., Akinpelu, L., & Ogunleye, O. (2013). The determinants of profitability among deposit money banks (DMBs) in Nigeria post consolidation. *Global Advanced Research Journal of Economic, Accounting and Finance*, *2*(5), 93-103.

Vennet, V. R. (1996). The effect of mergers and acquisitions on the efficiency and profitability of EC credit institutions. *Journal of Banking & Finance*, 20(9), 1531-1558.

## Appendix A

**List of Regional Rural Banks formed after amalgamation during 2005-06 to 2013-14**

| *Sr. No* | *RRB formed after Amalgamation* | *Year of Amalgamation* |
|---|---|---|
| 1. | Chaitanya Godavari Gramin Bank | 2005-06 |
| 2. | Andhra Pradesh GrameenaVikas Bank | 2005-06 |
| 3. | AssamGramin Vikash Bank | 2005-06 |
| 4. | Karnataka Vikas GraminBank | 2005-06 |
| 5. | Kashi Gomti SamyutGraminBank | 2005-06 |
| 6. | PurvanchalGraminBank | 2005-06 |
| 7. | SaurashtraGramin Bank | 2005-06 |
| 8. | TeleganaGraminVikas Bank | 2005-06 |
| 9. | Madhya Bihar GraminBank | 2005-06 |
| 10. | Bihar KGB | 2005-06 |
| 11. | Baroda Gujarat Gramin Bank | 2005-06 |
| 12. | Dena Gujarat Gramin Bank | 2005-06 |
| 13. | Haryana Gramin Bank | 2005-06 |
| 14. | Pragathi GB | 2005-06 |
| 15. | Vidharbha KGB | 2005-06 |
| 16. | Kalinga Gramya Bank | 2005-06 |
| 17. | Punjab Gramin Bank | 2005-06 |
| 18. | Baroda Rajasthan Gramin Bank | 2005-06 |
| 19. | Rajasthan Gramin Bank | 2005-06 |
| 20. | Jaipur Thar Gramin Bank | 2005-06 |
| 21. | SaptagiriGramin Bank | 2006-07 |
| 22. | Andhra PragathiGramin Bank | 2006-07 |
| 23. | Jharkhand Gramin Bank | 2006-07 |
| 24. | VananchalGramin Bank | 2006-07 |
| 25. | Pallavan Grama Bank | 2006-07 |
| 26. | BangiyaGramin Bank | 2006-07 |
| 27. | Paschim banga Gramin Bank | 2006-07 |
| 28. | Chhattisgarh Gramin Bank | 2006-07 |
| 29. | Cauvery KalpatharuGramin Bank | 2006-07 |
| 30. | Madhya Bharath Gramin Bank | 2006-07 |
| 31. | Narmada MalwaGramin Bank | 2006-07 |
| 32. | Utkal Grama Bank | 2006-07 |
| 33. | Marwar Ganganagar Bikaner Gramin Bank | 2006-07 |
| 34. | AryavartGramin Bank | 2006-07 |
| 35. | Shreyas Gramin Bank | 2006-07 |
| 36. | Uttaranchal Gramin Bank | 2006-07 |
| 37. | J & K Gramin Bank | 2009-10 |
| 38. | Himachal Gramin Bank | 2012-13 |
| 39. | KeralaGramin Bank | 2013-14 |

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.03*

# Customer Grievance Redressal Mechanism in the Banking Sector: A Customer Perception Analysis

**Carvalho Faustina Cicila**
*Assistant Professor, Department of Commerce, All Saints' College Thiruvananthapuram, University of Kerala, Thiruvananthapuram, Kerala. E-mail: cicila.com@allsaintscollege.ac.in*

**To cite this paper**

Cicila, C.F. (2021). Customer Grievance Redressal Mechanism in the Banking Sector: A Customer Perception Analysis. *Orissa Journal of Commerce.* 42(4), 28-42.

**Keywords**

Banking, Consumer awareness, Ombudsman, Customer empowerment, Financial literacy

**JEL Classification**

D18, D83, G21, G53

**Abstract:** This study focuses on customer perception in terms of customer awareness of grievance redressal mechanisms in the banking sector. Banks being organisations of economic importance should make conscious efforts to establish secure service recovery culture. Developing a good complaint management system alone cannot serve the purpose of catering to the customers but making the customer aware of the various redressal avenues at their disposal is also necessary therefore this study was undertaken. The objective of the study is to evaluate the general awareness of customers on the different avenues for redressal. Statistical tools like the ANOVA test, multiple regression has been applied to determine the results. Data were collected from 384 bank customers through an interview schedule. The results of the study highlighted that the customer awareness of redressal processes and mechanisms is low for external processes rather than internal processes of banks.

## 1. Introduction

Customer empowerment has several dimensions, such as choice and information, but a critical component is the ability of consumers to know how to obtain effective redressal when something goes wrong. (Cook and Macaulay, 1997) Therefore, it is not only the existence of the grievance redressal mechanism but its implementation which makes the firm that redresses grievances successfully and the other, which is under-performing on this account as unsuccessful. To reduce the consequence of complaints and failed recovery, it is significant to handle the complaints in a competent manner. Many researchers have emphasized the importance of complaint management. Complaint management was first used by (Fornell and Wernerfelt, 1987). They considered complaint management as the tool of defensive marketing that may lower down the cost of offensive marketing. The grievance redress mechanism of a bank is the barometer to measure its efficiency and effectiveness as it provides important feedback on vital areas needing improvement. Since banks are institutions of economic importance their inefficiency will adversely affect economic growth. (Kumari, 2015) Bank failures can precipitate

an economic catastrophe; therefore, banks have to always remain alert to the needs of their customers. It is not an easy task for the bank to keep all the customers satisfied as customer satisfaction varies from person to person. The banks need to establish an effective grievance redressal system as it becomes an effective medium to express dissatisfaction. All these necessitated the review of the grievance redressal system in banks. The objective of the grievance redressal systems has been to make the banking system more feasible, technically competitive vibrant, fruitful, competent, profitable and customer friendly. Grievance redressal is of immense importance as it is concerned with minimizing customer turnover by reducing customer exit, customer attrition and the adverse effect of negative word of mouth (Stauss and Seidel, 2012).

## 2. Review of Literature

Previous studies have focused on the need to establish a customer grievance redressal mechanism to enhance the customer experience of service recovery in case of service failure (Orsingher *et al.,* 2010; Shammout and Haddad, 2014).

Nuansi (2021) examined the proactive complaint management and effects of customer voice initiation on perceived justice, satisfaction, and negative word-of-mouth. The study pointed the area of complaint behaviour and stated that the decision of complaining highly depends on the customer's knowledge of the avenues for redressal. Sahoo and Swain (2020) evaluated the impact of demographic factors of customers on the services of public sector banks in India and concluded that technology up-gradation can an important tool for speedier delivery of customer service. The results of the study indicated that the tangibility component, Accessibility component, reliability component and Assurance components of the grievance redressal system had a significant impact on customer satisfaction. Carvalho (2019) posit in her research that most of the customers fail to complain either because they are not ready to undertake the long process of redressal or because they do not trust the system.

Bergel and Brock (2018) The author conducted a scenario-based experiment and used a critical incident technique combined with survey-based measures of dissatisfaction responses,switching costs, and complaint handling. The results highlighted the need to consider the different effects of switching costs. switching costs lead to varying customer dissatisfaction responses, and have differential moderator effects on the interrelationships between customer-perceived recovery, service recovery satisfaction and justice. Charu and Vikramjit (2017) evaluated the impact of grievance redressal system on customer satisfaction with special reference to banks in Punjab and pointed that reliability component, tangibility component, accessibility component and assurance components of grievance redressal system had a significant impact on customer satisfaction. Gilly (2017) focused on the operation of a customer feedback system and provided insights concerning complaint information flow through the organization after the receipt of the complaints. furthermore affirmed that the role of complaint handling managers and customer contact employees are equally important.

Saxena (2017) studied the functioning of customer grievance redressal in banks and concluded that customers are aware of the internal customer redressal system of the bank but most of them did not know about the banking Ombudsman. Therefore, a recommendation was made to create awareness among the customers about the procedure of complaining and the process of the functioning of the

system. Nagra (2016) opined that there exists a low level of care about the grievance redressal approach and confirmed that private banks have a more realistic grievance redressal framework. The author further suggested that banks should strive on educating the customers to address their grievances adequately. The author insisted on the need to assign responsibility in defining who responds to a complaint, when a complaint should be escalated, whom it is escalated to, steps to proceed with the process of redressed banks need to conduct feedback on whether the customer is satisfied with the solution provided to them. Felix (2015) had designed, developed and implemented a bank customer management system that is used to strengthen the relationship between bank and customer by providing a solution that uses multi-level security to improve customer satisfaction. The study aimed to assure customers that no amount of online threat from hackers and other attackers can penetrate their account even when their password is compromised. The author developed an application that uses a multi-level security measure to ensure that customers' details and account information are safe.

Zou (2015) evaluated the websites of 16 banks, online complaint forms as well as the information provided. The results revealed that most of the banks, especially the major trading banks, provide effective links and a high level of information about complaint management on their website, however, there are some banks having information gaps, which makes it difficult for customers to work out how to complain. Garding and Bruns (2015) analyzed the impact of customer complaint behaviour and classified the potential type of behaviour after a dissatisfying incident. The social network was identified as a potentially emerging complaint channel and described the scientific theories i.e. justice, behavioural and attribution theories which are customer satisfaction analysis. The study concluded that considering social networks as a new complaint channel might not only be a convenient way to increase customer satisfaction but may also obviate bad word-of-mouth by motivating customers to contact companies directly who had previously addressed their complaints to friends and family. Thus, this study revealed that social networks as an appropriate new complaint channel, encouraging non- voicers and preventing negative word-of-mouth.

Kim *et al.* (2014) conducted cross-cultural research on customer complaint behaviour between western and Asian customers. The author experimented to examine the joint effects of culture, customer loyalty, and restaurant price level on customer complaint behaviours. The results indicated that Asian customers might indeed be vocal public complainers when there is no deep commitment to a firm and when paying a high price for the service. Shammout and Haddad (2014) studied the impact of complaint handling on customer satisfaction in the commercial bank in Jordon. The result of the study showed that there is a statistically significant impact on the overall dimension of the complaint handlings, service recovery, service quality, switching cost, service guarantee, and perceived value has a direct impact on customer satisfaction. Filip (2013) found that complaints are an indicator of organizational performance assessment. The study highlighted an effective complaint management process, is a less expensive system of diagnosing and learning a company's weaknesses. The author emphasized that the customers who file complaints are providing an organization with the opportunity to solve certain operational malfunctions, to learn from negative situations and consequently to re-establish their satisfaction and trust.

Selvi (2013) analysed the redressal mechanism in the banking sector and revealed the fact that performance is good as the disposal is fast-tracked. The author suggested that the procedure and

process of complaint redressal should be made known to the public by way of awareness of the grievance cell and its functioning. Unnikrishnan (2013) studied the effectiveness and performance of the customer redressal agencies in India. The performance was analyzed based on the complaint disposed at the National Commission, State Commission and District Forum. It was evident from the analysis that district forum performance was more effective than the National commission and state commission. The author stated that State and National commissions have to dispose of the pending cases at a fast rate to ensure the smooth functioning of the forums and give justice to the consumer at the right time. Hakiri (2012) identified the crucial elements as initiatives to improve complaint management. The author highlighted the important elements as listening to the customer, complaint settlement time, classifying complaints in order of importance and customer follow up.

Taleghani *et al.* (2011) investigated Customer Complaint Management (CCM) and key factors essential for achieving customer retention and loyalty. The findings of the study indicated that effective complaints management requires a cultural change in the organization's environment and also suggested that different levels should be considered in complaint management, employees' participation plays a vital role in complaint management. Malyadri and Sirisha (2011) raised a thought-provoking question of whether the ombudsman scheme is a reality or a myth. The author further agreed that proactive measures taken by the RBI and awareness campaigns conducted by the Ombudsman, makes the banking complaint management scenario look brighter. They further insisted that extensive steps need to be taken to ensure the effectiveness of the scheme and its success in the future.

Singh, (2011) observed that there was a considerable increase in the complaint received by the Banking Ombudsman, it indicated the reliability, the customers have on the functioning of the banking ombudsman, rural areas are an exception to this service as it had not yet reached the rural masses. The author suggested that the banks should make a substantial effort in creating awareness among the rural customers. Baburao, (2011) critically analysed the awareness provided by the Reserve Bank of India on ombudsman and stated that the level of awareness is very low still the awareness has to be created. The author recommended the need to appoint an individual ombudsman for each urban cooperative bank.

## 3. Objective and Hypothesis of the Study

### *3.1. Objective of the Study*

The study had been carried out with the following specified objective in view:

- To study the general awareness regarding customer rights and remedies available to customers in the banking sector.

### *3.2. Hypothesis of the Study*

- $H_{01}$: Customer awareness of the redressal processes and mechanism is independent of customer characteristics.

## 4. Research Methodology

The estimated sample was 384 customers. The multi-stage procedure was adopted in this study. Three districts, Kozhikode, Ernakulum and Thiruvananthapuram were randomly selected. In the second

stage, as per the categorization of Reserve Bank of India, banks were categorized into four categories as Nationalized Banks and State Bank of India group from the public sector and new private banks and old private banks from the private sector. Based on the number of complaints received under the banking ombudsman Scheme in the year 2016 the bank that had the highest number of complaints registered against was selected from each category. The selected banks are stated below:

**Table 1: List of Banks Selected for Study**

| *Sector* | *Category* | *Bank* |
|---|---|---|
| Public Sector | Nationalized Bank | Punjab National Bank |
| | SBI and Associates | State Bank of India |
| Private Sector | Old Private Bank | Federal Bank |
| | New Private Bank | ICICI Bank |

*Source:* Author's Own Compilation

In the third stage, one bank branch from each category was selected using a random sampling method. Purposive sampling was adopted to select the respondents. From the selected bank branch, 32 customers were selected as respondents based on the frequency of their visit to the branch (at least once a month).

## 5. Data Analysis and Interpretation

### *5.1. Result Analysis*

**Table 2: Distribution of the Sample by their Level of Awareness about Remedies in Banks**

| | *Not at all aware* | | *Somewhat aware* | | *Fully aware* | | *Mean* | *SD* | *One-samplet-test with test value 2* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *N* | *%* | *N* | *%* | *N* | *%* | | | *t* | *Sig.* |
| Suggestion Box | 31 | 8.07 | 123 | 32.03 | 230 | 59.90 | 2.52 | 0.64 | 15.817 | 0.000 |
| Maintenance of Complaint Register | 19 | 4.95 | 212 | 55.21 | 153 | 39.84 | 2.35 | 0.57 | 11.958 | 0.000 |
| Complaint through email | 86 | 22.40 | 228 | 59.38 | 70 | 18.23 | 1.96 | 0.64 | 1.282 | 0.201 |
| Complaint through CPGRAMS | 238 | 61.98 | 134 | 34.90 | 12 | 3.13 | 1.41 | 0.55 | 20.867 | 0.000 |
| Branch level redressal system | 96 | 25.00 | 104 | 27.08 | 184 | 47.92 | 2.23 | 0.82 | 5.452 | 0.000 |
| Observance of Consumer day | 186 | 48.44 | 121 | 31.51 | 77 | 20.05 | 1.72 | 0.78 | 7.146 | 0.000 |

*contd. table 2*

| | *Not at all aware* | | *Somewhat aware* | | *Fully aware* | | *Mean* | *SD* | *One-samplet-test with test value 2* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *N* | *%* | *N* | *%* | *N* | *%* | | | *t* | *Sig.* |
| Protected Disclosure Scheme | 248 | 64.58 | 132 | 34.38 | 4 | 1.04 | 1.36 | 0.50 | 24.747 | 0.000 |
| Customer Education and Protection Cell | 146 | 38.02 | 236 | 61.46 | 2 | 0.52 | 1.63 | 0.50 | 14.833 | 0.000 |
| Free service of Customer Protection and Education Cell | 266 | 69.27 | 114 | 29.69 | 4 | 1.04 | 1.32 | 0.49 | 27.393 | 0.000 |
| Directorate of Public Grievance Redressal | 265 | 69.01 | 116 | 30.21 | 3 | 0.78 | 1.32 | 0.48 | 27.699 | 0.000 |
| Consumer Protection Act | 108 | 28.13 | 236 | 61.46 | 40 | 10.42 | 1.82 | 0.60 | 5.824 | 0.000 |
| National Consumer Helpline | 289 | 75.26 | 93 | 24.22 | 2 | 0.52 | 1.25 | 0.45 | 32.771 | 0.000 |
| Court of law | 121 | 31.51 | 180 | 46.88 | 83 | 21.61 | 1.90 | 0.72 | 2.682 | 0.008 |
| Integrated Grievance Redressed Mechanism | 321 | 83.59 | 56 | 14.58 | 7 | 1.82 | 1.18 | 0.43 | 37.154 | 0.000 |
| Inquiry through Right to Information Act | 77 | 20.05 | 134 | 34.90 | 173 | 45.05 | 2.25 | 0.77 | 6.378 | 0.000 |
| Central Vigilance Commission | 288 | 75.00 | 93 | 24.22 | 3 | 0.78 | 1.26 | 0.46 | 31.927 | 0.000 |
| Banking Ombudsman | 225 | 58.59 | 98 | 25.52 | 61 | 15.89 | 1.57 | 0.75 | 11.145 | 0.000 |

*Source:* Author's Own Compilation

Table 2 depicts that 59.90 per cent of the customers were found to be fully aware of the display of the suggestion box, 32.03 per cent were somewhat aware and 8.07 per cent were not at all aware. The mean agreement score was computed as 2.52 which was found to be significantly higher than the mean of the response scale namely 2.00. The mean agreement scores of maintenances of complaint register, branch level redressal system and inquiry through right to information Act were 2.35, 2.23 and 2.25 respectively which were also found to be higher than the mean of the response scale. The result indicated that the customers were highly aware of the display of suggestion box, complaint register, branch level redressal system and inquiry through the RTI Act. The mean agreement score of the complaint through email was recorded as 1.96 which was slightly less than the mean response scale that is 2.00. From this, it can be inferred that the customer had an average level of awareness regarding the complaint through email. The least mean agreement score was regarding the awareness of Integrated Grievance Redressal Mechanism (INGRAM) which was 1.18 which indicates that the awareness level of the same is the lowest. The result of one sample t-test revealed that except for 'complaint through email' the significance level of all the components were less than 0.05. From the result, it can be concluded that customers had a low level of awareness regarding processes and systems for grievance redressal in banks.

### 5.2. Classification of Redressal Systems in Banks

The redressal systems prevailing in the bank were classified as internal grievance redressal system and the external grievance redressal system. The external system was classified as an external system exclusively for banks and general systems inclusive of banks.

**Table 3: Means Score of Awareness about Process and Redressal Systems in the Bank**

| | | | *Mean* | *SD* | *Mean* | *SD* |
|---|---|---|---|---|---|---|
| Internal processes and grievance redressal in banks | | Suggestion Box | 2.52 | 0.64 | | |
| | | Complaint Register | 2.35 | 0.57 | 2.15 | 0.41 |
| | | Complaint through email/ telephone | 1.96 | 0.64 | | |
| | | Branch level redressal system | 2.23 | 0.82 | | |
| | | Consumer day | 1.72 | 0.78 | | |
| External redressal process and systems | Specific Systems exclusively for banks | Protected Disclosure Scheme | 1.36 | 0.50 | | |
| | | Customer Education and Protection Cell | 1.63 | 0.50 | 1.52 | 0.42 |
| | | Banking Ombudsman | 1.57 | 0.75 | | |
| | General systems inclusive of banks | Complaint through CPGRAMS | 1.41 | 0.55 | 1.55 | 0.27 |
| | | Directorate of Public Grievance Redressal | 1.32 | 0.48 | | |
| | | Consumer Protection Act | 1.82 | 0.60 | | |
| | | National Consumer Helpline | 1.25 | 0.45 | | |
| | | Court of law | 1.90 | 0.72 | | |
| | | Integrated Grievance Redressed Mechanism | 1.18 | 0.43 | | |
| | | Inquiry through Right to Information Act | 2.25 | 0.77 | | |
| | | Central Vigilance Commission | 1.26 | 0.46 | | |

*Source:* Author's Own Compilation

As far as the internal processes and grievance redressal systems in banks were concerned, it can be seen that the level of awareness in all cases was high except for complaining through email and awareness of observance of consumer day, as the mean value of the same were 1.96 and 1.72 respectively which was less than the mean value of the response scale that is 2.00. When all were combined the mean value was 2.15 which was higher than 2.00, so it can be concluded that the customer awareness of internal processes and grievance redressal in banks was fairly high.

As far as awareness of external redressal process and systems exclusively for the bank was concerned it can be seen that in all cases the mean scores were less than 2.00 i.e. for Customer Education and Protection Cell (1.63), Protected Disclosure Scheme (1.36) and Banking Ombudsman (1.57). When all the systems in the category external system exclusively for banks were combined it showed a mean score of 1.52 which was less than 2.00, hence it can be said that the customer awareness on external processes and grievance redressal system exclusively for banks was low.

As far as awareness of general redressal process and systems inclusive of banks was concerned it was observed that in all cases except inquiry through Right to Information the mean scores were less than 2.00. The least mean score was recorded for Integrated Grievance Redressal and Monitoring System (1.18), followed by National Consumer Helpline (1.25) Central Vigilance Commission (1.26) Directorate of Public Grievance Redressal (1.32) complaint through CPGRAMS (1.41). A moderate level of awareness was noticed in the case of the Court of law (1.90) and Consumer Protection Act (1.82) in case of inquiry through the Right to Information Act the mean score was higher than 2 which is 2.25. When all the general systems inclusive of the bank were combined, it showed a mean score of 1.55 which was less than 2.00. Hence it can be said that the customer awareness on external processes and grievance redressal system inclusive of banks was low. From the result, it was noticed that the least level of awareness among the customers was for the online systems.

### *5.3. Testing of Hypothesis*

- $H_{01}$: Customer awareness of the redressal processes and mechanism is independent of customer characteristics

Table 4 show the result of multiple regression. To find out the connection between the characteristics of customers and their awareness of the redressal process and mechanism, multiple regression analysis was conducted. The composite variable representing the level of awareness of customers on the redressal process and mechanism was taken as the continuous dependent variable. The customer characteristic such as gender, age qualification occupation, income and place of residence are taken as independent variables. As the independent variables are categorical, they were converted into dummy variables as given below.

In order to extract the most significant characteristic which affects the level of awareness of customers, the backward selection method of regression analysis was conducted. The backward selection method eliminated 15 insignificant dummy variables from the regression model and in the 16th step the final regression model was computed.

The model summary of initial and final regression on the effect of characteristics on the awareness of customers is presented in Table 5. From the above table, it is clear that the R square of the final regression model is 0.354 which indicates that 35.4 per cent of the variation in the awareness of customers on redressal process and mechanism is determined by the independent variables retained in the final regression model. The value of Durbin Watson is found to be 1.863 which is nearly equal to 2.00 indicating that the final regression model satisfies the desirable quality of absence of serial correlation in the dependent variable is one of the significant assumptions of regression analysis.

**Table 4: Result of Multiple Regression**

| *Variables* | *Dummy Variables* | *Reference Category* |
|---|---|---|
| Gender | G: 1 if male, 0 otherwise | Female |
| Age | A1: 1 if Below 30, 0 otherwise<br>A2: 1 if 30-39, 0 otherwise<br>A3: 1 if 40-49, 0 otherwise<br>A4: 1 if 50-59, 0 otherwise | 60 and above |
| Qualification | Q1: 1 if Below HSC, 0 otherwise<br>Q2: 1 if HSC, 0 otherwise<br>Q3: 1 if a graduate, 0 otherwise | Masters |
| Occupation | O1: 1 if Business, 0 otherwise<br>O2: 1 if Govt employees, 0 otherwise<br>O3: 1 if Pvt employees, 0 otherwise<br>O4: 1 if Professionals, 0 otherwise<br>O5: 1 if skilled employees, 0 otherwise<br>O6: 1 if unskilled employees, 0 otherwise<br>O7: 1 if Retired persons, 0 otherwise | Others |
| Income | I1: 1 if Below 25000, 0 otherwise<br>I2: 1 if 25000-50000, 0 otherwise<br>I3: 1 if 50001-100000, 0 otherwise | Above 100000 |
| Place of residence | P: 1 if Rural, 0 otherwise | Urban |

*Source:* Author's Own Compilation

**Table 5: Model Summary of Initial and Final Regression on the Effect of Characteristics on Awareness of Customers**

| *Model* | *R* | *R Square* | *Adjusted R Square* | *Std. Error of the Estimate* | *Durbin-Watson* |
|---|---|---|---|---|---|
| 1 | 0.631 | 0.398 | 0.316 | 0.138 | |
| 16 | 0.595 | 0.354 | 0.337 | 0.136 | 1.863 |

*Source:* Author's own Compilation

The result of ANOVA presented in table 6 shows that the significance level of F value related to the initial and final regression models were less than 0.05 which indicates that the regression equations are well fit to the data and so it can be used to study the relationship between characteristics and awareness of customers.

**Table 6: ANOVA of Initial and Final Regression on the Effect of Characteristics on Awareness of Customers**

| *Model* | | *Sum of Squares* | *df* | *Mean Square* | *F* | *Sig.* |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.752 | 19 | 0.092 | 4.843 | 0.000 |
| | Residual | 2.646 | 139 | 0.019 | | |
| | Total | 4.397 | 158 | | | |
| 16 | Regression | 1.556 | 4 | 0.389 | 21.082 | 0.000 |
| | Residual | 2.841 | 154 | 0.018 | | |
| Total | | 4.397 | 158 | | | |

*Source:* Author's Own Compilation

The coefficient of initial regression presented in table 7 shows that three dummy variables have a significant effect on the extent of awareness of customers on redressal process and mechanism. The coefficient of the final regression model presented in Table 4 shows that four dummy variables had a significant effect on the awareness level of customers. The difference in the number of significant variables in an initial and final regression model is due to the interaction of variables when the interacted variables were removed from the regression model by the backward selection method, the effect interacted variable become more visible.

**Table 7: Coefficients of Initial Regression on the Effect of Customer Characteristics on Awareness of Customers**

| | *Unstandardized Coefficients* | | *Standardized Coefficients* | *t* | *Sig.* |
|---|---|---|---|---|---|
| | *B* | *Std. Error* | *Beta* | | |
| (Constant) | 1.999 | 0.134 | | 14.948 | 0.000 |
| G: 1 if male, 0 otherwise | 0.003 | 0.025 | 0.010 | 0.133 | 0.894 |
| A1: 1 if Below 30, 0 otherwise | -0.002 | 0.079 | -0.003 | -0.022 | 0.983 |
| A2: 1 if 30-39, 0 otherwise | 0.082 | 0.074 | 0.218 | 1.105 | 0.271 |
| A3: 1 if 40-49, 0 otherwise | 0.001 | 0.073 | 0.003 | 0.013 | 0.990 |
| A4: 1 if 50-59, 0 otherwise | -0.010 | 0.076 | -0.023 | -0.130 | 0.897 |
| Q1: 1 if Below HSC, 0 otherwise | -0.560 | 0.106 | -0.375 | -5.293 | 0.000 |
| Q2: 1 if HSC, 0 otherwise | -0.374 | 0.067 | -0.429 | -5.615 | 0.000 |
| Q3: 1 if graduate, 0 otherwise | -0.093 | 0.028 | -0.262 | -3.316 | 0.001 |
| O1: 1 if Business, 0 otherwise | -0.061 | 0.108 | -0.153 | -0.567 | 0.572 |
| O2: 1 if Govt employees, 0 otherwise | -0.076 | 0.106 | -0.187 | -0.711 | 0.478 |

*contd. table 7*

| | *Unstandardized Coefficients* | | *Standardized Coefficients* | *t* | *Sig.* |
|---|---|---|---|---|---|
| | *B* | *Std. Error* | *Beta* | | |
| O3: 1 if Pvt employees, 0 otherwise | -0.077 | 0.106 | -0.180 | -0.724 | 0.470 |
| O4: 1 if Professionals , 0 otherwise | -0.106 | 0.106 | -0.265 | -1.006 | 0.316 |
| O5: 1 if skilled employees, 0 otherwise | 0.027 | 0.113 | 0.036 | 0.240 | 0.811 |
| O6: 1 if unskilled employees, 0 otherwise | -0.006 | 0.123 | -0.006 | -0.048 | 0.961 |
| O7: 1 if Retired persons , 0 otherwise | -0.081 | 0.133 | -0.118 | -0.606 | 0.545 |
| I1: 1 if Below 25000 , 0 otherwise | 0.013 | 0.045 | 0.038 | 0.299 | 0.766 |
| I2: 1 if 25000-50000 , 0 otherwise | 0.038 | 0.039 | 0.112 | 0.963 | 0.337 |
| I3: 1 if 50001-100000 , 0 otherwise | -0.010 | 0.045 | -0.021 | -0.225 | 0.822 |
| P: 1 if Rural, 0 otherwise | -0.002 | 0.024 | -0.005 | -0.067 | 0.947 |

*Source:* Author's Own Compilation

The final regression model was formed to satisfy the other important assumptions of regression. Figure1 shows that the regression standardized residual follows a normal distribution as the histogram is almost normal in shape indicating that the final regression model satisfies the desirable quality of normality of residuals. The Homoscedasticity is evident from the scattering of points in the scatter plot. the absence of multicollinearity, the other important assumption of regression is evident from the values of VIF (Variance Inflation Factor) which are less than the threshold value of 10. From the above results, it can be inferred that the final regression model satisfies all the important assumptions of regression analysis and so the final regression model can be used to study the relationship of the characteristic on the level of awareness of customers on redressal process and mechanism.

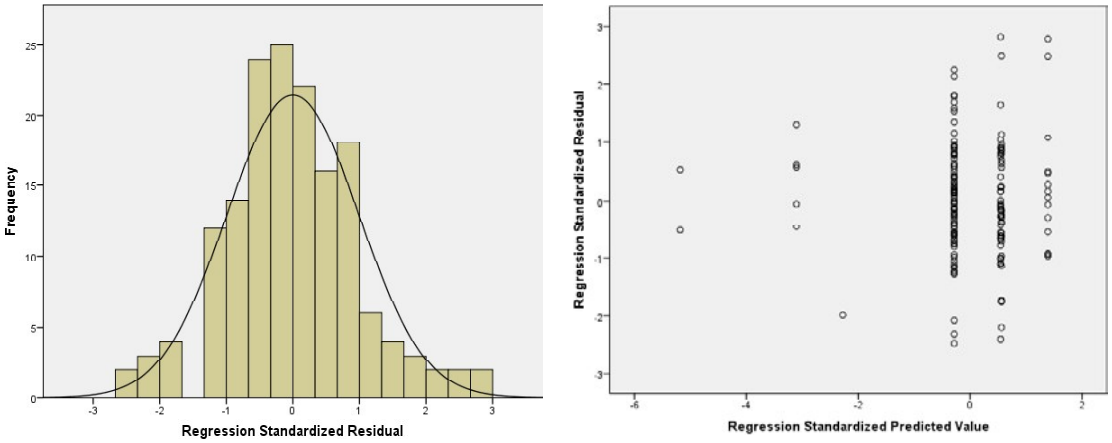


**Figure 1: Histogram and Scatter Plot of the Standardized Residual of Regression on the Effect of Characteristics on Awareness of Customers**

*Source:* Author's Own Compilation

From table 5 it is clear that the age group 30-39 has a higher level of awareness compared to the reference category of age group 60 and above. Since all other age groups are removed from the regression model by the backward selection method, it can be inferred that the level of awareness of those age groups is similar to that of the reference category. The result indicates that awareness is significantly higher among the customers in the age group 30-39 compared to customers of all other age groups.

**Table 8: Coefficients of Final Regression on the Effect of Characteristics on Awareness of Customers**

| | *Unstandardized Coefficients* | | *Standardized Coefficients* | *t* | *Sig.* | *Collinearity Statistics* | |
|---|---|---|---|---|---|---|---|
| | *B* | *Std. Error* | *Beta* | | | *Tolerance* | *VIF* |
| (Constant) | 1.939 | 0.022 | | 87.395 | 0.000 | | |
| A2: 1 if 30-39, 0 otherwise | 0.082 | 0.024 | 0.220 | 3.375 | 0.001 | 0.989 | 1.011 |
| Q1: 1 if Below HSC, 0 otherwise | -.570 | 0.099 | -0.382 | -5.780 | 0.000 | 0.961 | 1.040 |
| Q2: 1 if HSC, 0 otherwise | -0.364 | 0.059 | -0.417 | -6.131 | 0.000 | 0.908 | 1.101 |
| Q3: 1 if graduate, 0 otherwise | -0.084 | 0.025 | -0.235 | -3.413 | 0.001 | 0.884 | 1.131 |

*Source:* Author's Own Compilation

As far as qualification is concerned, customers with qualifications below HSC, those with HSC and graduates have a significantly lower level of awareness compared to the reference category those who have a master's degree. The regression coefficient of customers below HSC is the lowest, indicating that their level of awareness is low. The coefficient of customers of HSC and graduate increases steadily indicating that awareness increases as education increases. The highest awareness was for customers having a Master's degree. From the result, it can be inferred that level of awareness about the redressal process and mechanism in the banking sector is significantly and positively related to the education of the customers. The result on the relationship of customer awareness and customer characteristics indicated that the age and education of the customers are significantly related to their level of awareness about the redressal process and mechanism. Hence the result rejects the hypothesis that customer awareness of the redressal processes and mechanism is independent of customer characteristics.

## 6. Findings and Discussions

The result shows that customer awareness on internal grievance redressal procedure is high, excluding complaints through email and awareness of consumer day. Customers were not aware that they can file

a complaint through email and they were not aware that they can meet the manager on the 15th of every month without an appointment.

The awareness of the external redressal system exclusively for banks revealed that the customers had very low awareness regarding the external system. The lowest being awareness on Protected Disclosure Scheme. This highlighted the fact that customers were not aware of the 'Protected Disclosure Scheme" with Reserve Bank of India as nodal agency to receive written complaints about disclosure on any allegation of misuse of office, corruption, applicable to the Private Sector Banks and Foreign Banks.

The awareness for general grievance redressal systems inclusive of banks was found to be low except for traditional systems namely the Consumer Protection Act, the Court of law and the Right to Information Act. The digitalized systems under 'Jago Grahak Jago' like Integrated Grievance Redressal Mechanism (INGRAM), Centralised Processing Grievance Redressal and Monitoring System and National Consumer Helpline the awareness was very low. Hence it could be inferred that the 'Jago Grahak Jago' campaign meant to create awareness of these systems was not so popular among the respondents

The result of the analysis revealed that customer's age and qualification influenced customer awareness. The level of awareness was found to be high in the case of age group 30-39 and among those with a higher degree of qualification viz. Masters.

## 7. Suggestions

Based on the finding of the study the following suggestions were made.

- Financial literacy centres of the banks should collaborate with educational institutions and should aim at creating awareness about the redressal mechanism in banks among the general public.
- Secondary level education should include in its curriculum the basics of banking, rights of customers, customer protection, and the redressal mechanism in banks
- 'Jago Grahak Jago' includes Integrated Grievance Redressal Mechanism (INGRAM), Centralised Processing Grievance Redressal and Monitoring System and National Consumer Helpline for which the awareness is low hence this campaign should be popularised in regional language to create awareness about the digital avenues for complaint redressal.
- Ensuring with appropriate auditing that bank-level educational program is being conducted properly and customer attendance is maintained.

## 8. Conclusion

A grievance of every customer differs as an individual in their needs. When the expectations are not at par with the perceptions its ultimate result was a service quality gap which pinpoints the areas that need improvement. There exists a mechanism for redressal of grievances quickly at the bank level and beyond. Complaints in banks can be related to its practices and procedures, products and complaints were also related to the behaviour of the staff. This call banks to be highly sensitive to the voice of their customer, to instantly intervene to take corrective measures, the result showed lack of awareness of the system. Despite there being constant product innovation and substantial improvement in the level of customer services with the use of technology, the sector suffers due to a lack of customer

awareness of different avenues of redressal. Therefore, it is necessary to conduct extensive research connected to the strategy adopted by banks to create awareness and the role of financial literacy development cells to create awareness. Moreover, it is important to know the efficiency and effectiveness of the online platform grievance redressal platforms.

## References

Baburao, M. (2011). Ombudsman in banking among the members of urban co-operative banks in thane city, Maharashtra state. *International Referred Research Journal, I*.

Bergel, M., & Brock, C. (2018). The impact of switching costs on customer complaint behavior and service recovery evaluation. *Journal of Service Theory and Practice*, *28*(4), 458–483. https://doi.org/10.1108/JSTP-02-2017-0035

Cicila, C.F. (2019). *Customer grievance redressal mechanism in the banking sector -Role of Ombudsman*. University of Kerala.

Charu & Vikramjit. (2017). Impact of Grievance Redressal System in Banks in India on Customer Satisfaction with Special Reference to Punjabi. *International Journal of Business Management and Scientific Research*, *Vol/ : 27,*(March).

Cook, S., & Macaulay, S. (1997). Practical steps to empowered complaint management. *Managing Service Quality: An International Journal*, *7*(1), 39–42. https://doi.org/10.1108/09604529710158292

Felix, E. A. (2015). Bank Customers Management System. *International Journal of Scientific & Technology Research*, *4*(08), 326–342.

Filip, A. (2013). Complaint Management: A Customer Satisfaction Learning Process. *Procedia - Social and Behavioral Sciences*, *93*, 271–275. https://doi.org/10.1016/j.sbspro.2013.09.188

Garding, S., & Bruns, A. (2015). *Complaint Management and Channel Choice*. https://doi.org/10.1007/978-3-319-18179-0

Hakiri, W. (2012). For an Efficient Complaints Management System for Banks: A Conceptual Framework and an Exploratory Study. *Journal of Marketing Research and Case Studies*, *2012*, 1–11. https://doi.org/10.5171/2012.624789

Kim, M. G., Lee, C. H., & Mattila, A. S. (2014). Determinants of Customer Complaint Behavior in a Restaurant Context: The Role of Culture, Price Level, and Customer Loyalty. *Journal of Hospitality Marketing & Management*, *23*(8), 885–906. https://doi.org/10.1080/19368623.2014.896762

Kumari, S. (2015). Grievance Redressal Mechanism and its' s Effectiveness in Indian Banks - A study with Respect to Mumbai. *Journal of Marketing Vistas*, *5*(2), 59–69.

Malyadri, P., & Sirisha, S. (2011). Success of banking ombudsmen scheme: Myth or reality. *International Journal of Research Studies in Management*, *1*(1), 16–24.

Mary C . Gilly, W. B. . S. A. L. J. . Y. (2017). *Dynamics of Complaint Management in the Service Organization* (Vol. 25, Issue 2). Published by/ : Wiley Stable.

Nagra, G.K. (2016). Grievance Redressal Instrument And Inclination of Diverse Modes Used to Enlist Complaints in Indian Banks. *Logforum*, *12*(1), 75–82.

Nuansi, P. (2021). Proactive Complaint Management/ : Effects of Customer Voice Initiation on Perceived Justices, Satisfaction , and Negative Word-of-Mouth. *SAGE Open July-September 2021: 1 –17 © The Author(s) 2021*

*Https://Doi.Org/10.1177/21582440211040788 DOI: 10.1177/21582440211040788 Journals.Sagepub.Com/Home/Sgo*. https://doi.org/10.1177/21582440211040788

Orsingher, C., Valentini, S., & de Angelis, M. (2010). A meta-analysis of satisfaction with complaint handling in services. *Journal of the Academy of Marketing Science*, *38*(2), 169–186. https://doi.org/10.1007/s11747-009-0155-z

Sahoo, P., & Swain, K. R. (2020). Article ID: IJM_11_11_023 Cite this Article: Pravat Sahoo and Dr. Rabindra Kumar Swain Impact of , Demographic Factors of Customers of Public Sector Banks on Various Banking Services: An Empirical Study. *International Journal of Management (IJM*, *11*(11), 235–241. https://doi.org/10.34218/IJM.11.11.2020.023

Saxena, C. (2017). *Impact of Grievance Redressal System in Banks in India on Customer Satisfaction With Special Reference To Punjab. 1975*.

Selvi, V. D. (2013). Performance Evaluation of Banking Ombudsman Scheme in the Indian Banking System. *Global Research Analysis,* Vol. 2(6), 13–14.

Shammout, M. Z., & Haddad, S. I. (2014). The Impact of Complaints' Handling on Customers' Satisfaction: Empirical Study on Commercial Banks' Clients in Jordan. *International Business Research*, *7*(11). https://doi.org/10.5539/ibr.v7n11p203

Shaoming Zou. (2015). *Managing complaints online - A survey of bank websites and best practice guide*.

Singh, T. (2011). 'Redressal of Customers' Grievances in Banks: A Study of Bank Ombudsman's Performance in India'. *International Journal of Research in Commerce & Management, Volume No.* (sue No. 6 (June)), P 84.

Stauss, B., & Seidel, W. (2012). Complaint management in retailing. In-*Service Management: The New Paradigm in Retailing*. https://doi.org/10.1007/978-1-4614-1554-1_12

Taleghani, M., Largani, M. S., Gilaninia, S., & Mousavian, S. J. (2011). The Role of Customer Complaints Management in Consumers Satisfaction for New Industrial Enterprises of Iran. *International Journal of Business Administration*, *2*(3), 140–147. https://doi.org/10.5430/ijba.v2n3p140

Unnikrishnan, S. (2013). *Performance Analysis of the Consumer Disputes Redressal Agencies in India*. *2*(12), 567–570.

Promoting Research

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.04*

# Factors Enabling the Shift from Unorganized to Organized Retail Sector through Mobile Payments

**Hemant Kumar[1*] and Kritika Mathur[2]**

*[1]Research Scholar, School of Business, Public Policy and Social Entrepreneurship, Dr B. R. Ambedkar University Delhi, New Delhi. E-mail: hemant.19@stu.aud.ac.in*

*[2]Assistant Professor, School of Business, Public Policy and Social Entrepreneurship, Dr B. R. Ambedkar University Delhi, New Delhi. E-mail: kritika@aud.ac.in*

**Corresponding Author*

**To cite this paper**

Kumar, H., & Mathur, K. (2021). Factors Enabling the Shift from Unorganized to Organized Retail Sector through Mobile Payments. *Orissa Journal of Commerce.* 42(4), 43-57.

**Keywords**

Mobile payments, Behavioral shift, Technological advancement, Unorganized retailing.

**JEL Classification**

L81, D9, O32, O33

**Abstract:** In the 21st century, smartphones and the internet have become an integral part of life. It is noteworthy that the future is full of technology-driven payment systems; therefore, the mobile payment system is the next big thing in this arena. This study highlights the factors influencing the consumers to accept or adopt the mobile payments system. This study attempts to study elements having a role in shifting consumers from unorganized to organized retail sector through the Mobile Payment System (MPS). A questionnaire was prepared using Google forms to collect data, and it was shared using WhatsApp and e-mail with the target respondents. In this study, 103 responses were analyzed and collected before India's first lockdown. The confirmatory factor analysis was used, and various factors were identified. It is found that trust, privacy and security issues are still restricting the user to adopt the online mode of payment; hence TAM model stands valid. This study attempts to examine the influence of MPS on unorganized retailing.

## 1. Introduction

India is young, energetic, and has the second-largest population globally. The technology outreach in each part of the community is significantly less. 'Power to Empower' means to make sure the services are accessible to people by electronic means, adding Internet connectivity and enhanced online infrastructure. The government aims to be digitally vested in technology. The Digital India campaign has contributed to this technological advancement immensely. The developing countries have emerged as one of the leading markets in mobile payments. The mobile payment system is one of the critical factors for the growth of online retail markets. The main goal of mobile payments is to make speedy transactions, thereby encouraging people not to use cash. The new technology is expected to help users with well-suited payment solutions in current scenarios. As per the Statista Report conducted by Redseer, for 2020, Mobile payments market value across India was estimated to be 25 trillion Indian

Rupees, wherein 2015 it was only 0.08 trillion Indian Rupees. This is estimated to increase to 234 trillion Indian Rupees by 2025 with remarkable growth, and non-cash transactions are expected to increase by 20% by 2023, according to the latest report by KPMG.

PRICE (People Research on India's Consumer Economy & Citizen Environment) with NPCI, researched 'Tracking Digital Payments Awareness, Adoption and Use Behaviour of Households'. As per the report, Indian digital payment acceptance is currently widespread. One-third of all families use it in some form or another. It is encouraging to see that over a quarter of households in the bottom 40 per cent of the income bracket utilize it, indicating that it is no longer only for the wealthy or well-educated. Fifteen per cent of households want to utilize digital payments in the lower- and middle-income brackets. Mobile payments will play a significant role in the coming years. Even if we did not encounter Covid-19, this technology would have increased immensely. According to the survey in 2018 of Regalix, mobile wallets or e-wallet use is widespread in India; 80 per cent of consumers (taken as a whole) use it once a week, and 33 per cent use it regularly. It is such that Covid-19 has given a massive boost to it. Figure 1 states the digital transaction per capita all over India from 2014 to 2019.

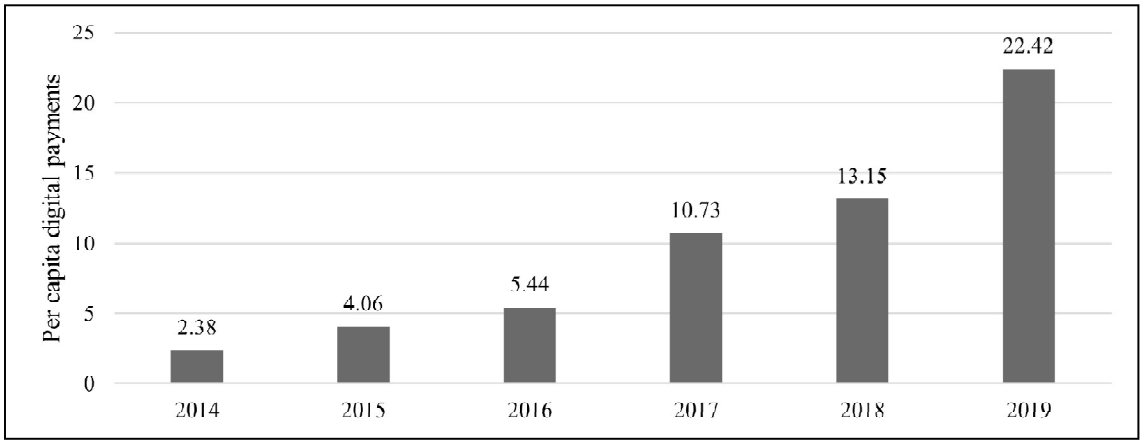


**Figure 1: The Volume of Digital Payments Per Capita All Over India from 2014 to 2019**

*Source:* Statista (RBI: Digital Payments Diffusion in Emerging and Developed Economies, page 277)

As per the NPCI-PRICE Report on Digital payments adoption in India (2020), we find a significant potential in the adoption of digital payments as far as top, middle and bottom-income groups are concerned. The top income and middle-income groups comprising 40 and 20 per cent of people respectively are much more dominating in digital payment adoption. They also have the massive potential of conversion if given a chance compared to the bottom income group. However, smartphone ownership is no longer a barrier to digital payment adoption.

Usage of Unique Payment Interface (UPI) across India in 2019 was 7%, 12%, 26% and 59% by Paytm, BHIM, PhonePe, and Google Pay, respectively. As far as the Covid-19 impact is concerned, we see a sudden shift in India's digital payments app usage. A report by KPMG published in April 2020

states that almost 50 per cent of people started using UPI or online wallets during Covid-19. UPI is undoubtedly the king of digital payments with the evident consumer benefit of rapid payment; however, simplicity of use might be enhanced. UPI is also becoming one of the popular methods of payment. Top and middle-income group people prefer UPI over specialized bank applications for mobile payments (NPCI-PRICE Report, 2020).

The Indian retail sector has grown to be one of the fastest-paced and most evolving markets. The Retail sector is classified as organized and unorganized. The unorganized retail sector includes traditional types of minimal cost retailing, such as general stores, paan/beedi shops, Kirana shops, convenience stores, shops on footpaths. Unorganized trade contributes around 93 per cent to the overall business, highlighting the scope for more penetration of unorganized retailing in India. Retailers have gained from less transaction time and improved customer trustworthiness while consumers enjoy the handiness and speed in the transaction. Covid-19 has changed the picture altogether; its impact on digital payments has been immense.

Also, retail categories have seen much deeper e-commerce penetration — from 25 per cent for footwear and apparel to upwards of 50 per cent for mobile phones and books, with more than 500 million smartphone consumers and the determination of the government to encourage cashless transactions. India will have 549 million e-commerce users by 2020 as per IMF data; indeed, mobile payment systems will play a significant role. A study by Shrestha (2018) discusses retailing in India, and she concludes that the online retail business has exponential growth in India. Her study mentions that a secure mobile payment system might encourage customers to transact online. It will be interesting to address factors affecting their behaviour to use online retailing. Figure 2 shows the results of a survey conducted by local circles.

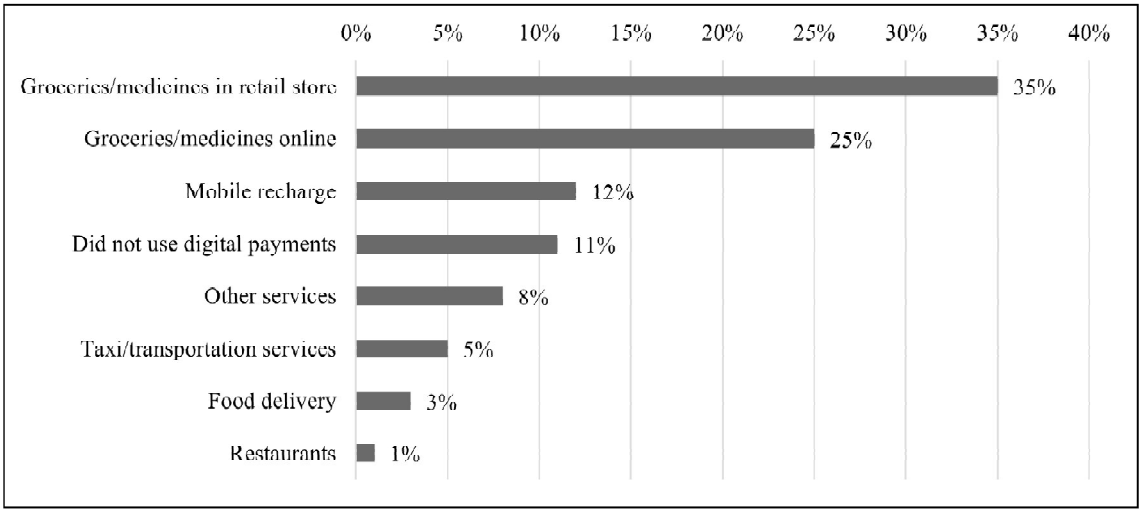


**Figure 2: Covid-19 impact on Digital Payments in India as of April 2020 by Type of Purchase**

*Source*: Statista (survey by localcircles.com on 8777 respondents)

## 2. Review of Literature

TAM (Technology Acceptance Model) is one of the most significantly used models for analyzing individual intentions to accept technology (Shin, 2010). Davis (1989) created the TAM in 1989 to illustrate the behaviour of computers. An attempt was made to use psychological variables to understand the computer's information system and adoption process. TAM 2 (revised version) discussed the fundamental forces' such as original judgments of perceived usefulness (PU), explaining up to 60 per cent of the variance in this critical driver of usage intention. TAM 2 strengthens TAM by demonstrating that the subjective standard directly affects use expectations over and beyond perceived user-friendliness and perceived utility for mandatory (but not intentional) programs. Researchers have signified the validity of the TAM across an extensive collection of IT (Information technology). Recently, researchers have been growing to reinforce the TAM with many other motivating variables. TAM may explain mobile payments adoption entirely and may have some limitations for various reasons. With the addition of categories such as perceived happiness and risk, TAM will become technology-specific research, providing insight into consumer perceptions while contemplating the purchase of smartphones (Wani *et al.*, 2015). Above all, the social context in which technology is adopted, it is observed that TAM ignores this aspect; for example, the TAM does not consider the social weight of new technology acceptance. Second, the TAM claims that there are no roadblocks to discourage a person from using a specific program whether he or she wished to. Third, TAM tends to imagine a single technology for users only.

Behavioural belief explains an individual's negative or positive evaluation while performing the behaviour. In contrast, the normative view reveals an individual's sense of societal forces to consider creativity or not. Those two forms of factors on behavioural intention may differ from person to person. The original TAM studied the linking role of perceived user-friendliness and perceived utility and their relationship between the probability of information systems adoption and external variables. A significant number of experiments in both human and corporate settings have confirmed other related research in development adoption, particularly IDT (Innovation Diffusion Theory) given by Rogers (1983), which incorporates five noteworthy innovation characteristics: reliability, competitive advantage, observability, difficulty and trialability. However, Tornatzky and Klein (1982) published a meta-analysis finding that only relative advantage, reliability, and uncertainty among these attributes were associated continuously with utilization decisions or adoption. Campbell and Singh (2017) conducted a study of factors that could influence the usefulness of mobile wallets. They also concluded that perceived ease of use is an essential aspect of overall perceived utility, but it is not enough to make mobile payments helpful.

Additionally, these traditional models frequently overlook the effect of personal innovativeness on acceptance/adoption, which is a significant factor for elucidating individual consumer adoption behaviour, mainly in particular settings. The study (Thakur and Shrivastava, 2014) considered literate customers with active bank accounts. As a result, the findings might not be immediately applicable to different consumers who can use mobile payment systems. Telecom-centric, bank-centric, independent service providers and collaborative business models are now used in mobile payments. However, each form of business model has advantages and limitations. It is noteworthy that offering a compelling

value proposition to all stakeholders is critical in developing a long-term mobile payment business strategy.

Bezhovski (2016) studied the growth and prospects of the mobile payment system. He has mentioned that various factors are affecting the usage of the mobile payments system. Convenience, cost and privacy were the most significant factors among them. Waris *et al.* (2006) conducted a study for the Netherland region where they have laid out the reasons for the success of mobile wallets in the Netherland, such as cost of the transaction, banking sector role and customers response though there were some privacy issues. Sinha *et al.* (2019) also concluded that the role of privacy concerns is enormous as far as acceptance of technological innovation is concerned. The top three issues preventing Mobile payment technology uptake are data privacy, safe transactions, and trust. The determinants are present in all three categories of street vendors studied, namely milk sellers, vegetable vendors, and roadside service repair businesses (Chopra, 2017). De Kerviler *et al.* (2016) highlighted utilitarian, hedonic, and social gains as significant drivers and financial and privacy threats from the standpoint of perceived value. In Finland, consumer adoption of mobile wallets is still in its early phases of the Innovation-Decision Process. It also demonstrates that customers in Finland have a favourable opinion of mobile payments (Doan, 2014).

The adoption of mobile payment systems can address economic and social challenges in India. The issue today is whether mobile payments will eventually replace cash and credit cards as universal payment technology. Au and Kauffman (2008) mentioned that irrespective of the region, Europe, North America or Asia, the young people will be the ambassadors as they transform into the next generation of a workforce with increased buying power. Citizens with a higher monthly income, younger, more educated, and who travel more and live in the capital city and overseas are more acclimated to mobile payments (Keramati *et al.*, 2010). In the Iranian context, customers' adoption of mobile payments is influenced by behavioural and technological variables (Keramati *et al.*, 2012). Early adopters place a premium on the simplicity of use, relying on their own mobile payments' expertise, but late adopters praise the utility of mobile payments, particularly reachability and comfort of use (Kim *et al.*, 2010). High levels of stress have a detrimental impact on users' perceptions of m-wallet services (Singh *et al.*, 2020). Slade *et al.* (2015) described mobile payment adoption is becoming trustworthy, and using mobile payment leads the risk into a unitary dimension. A study conducted by Renjan and Anju (2019) regarding smartphone users' perception of mobile payments systems suggested studying the various factors affecting the usage of the mobile payment system.

Jain (2020) analyzed the retail industry using SWOT Analysis, where strengths, weaknesses, opportunities and threats are discussed. She concluded; it is right to say that online retailing has disrupted the unorganized traditional Indian retail market. Kirana does well in location, but not so well in cleanliness, deals, quality, or friendly, trustworthy sales associates. However, the opposite is true (Goswami and Mishra, 2009). Online retailing is growing with an increase in technology and other advancements. Retailers are interested in linking e-wallet apps with coupon features and loyalty. As loyalty and coupon apps are progressively more linked with social networking sites, security threats are high because they access location and purchases data. Sivanesan and Green (2019) studied organized retail stores that adversely affected the unorganized retail sector in its nearby areas in terms of their business and profit. It is observed that organized stores give more offers than unorganized retail stores. Although there is

a compelling rationale for mobile payment, it has been shown that retailers are not as aware of the possible pitfalls (Taylor, 2016).

It is significant to note that mobile payments transactions occur in primarily underdeveloped ecosystems. In many cases, immature standards, weak infrastructures, mobile phones with only basic features, network congestion, overloading, and outages have slowed down the flow of mobile payments services. Location, friendly, trustworthy salespeople, home shopping, cleanliness, deals, and quality were favourably connected to customer patronage of grocery shops, but travel convenience was found to be adversely related. We should not overlook that despite the expansion in emerging markets of the mobile payment system. They are expected to be victims of mobile malware because of the underdeveloped antivirus industry. These products are not as reasonable/affordable, regardless of whether several mobile innovations are invented in these markets. Payment models that depend on modern technology are not suitable for the emerging world. However, to enhance the service providers, the mobile payments ecosystem, including mobile operators and banks, must collaborate with main value chain partners, such as app developers, solution vendors, merchants, retailers, device vendors, and the handset and consumer associations. The flow of mobile payments hinges on actions taken to improve consumers' responsiveness, awareness, and compliance to embrace/accept such services.

## 3. Objectives of the Study

The objectives for the study are:

- To study the factors enabling the shift from the unorganized to the organized retail sector.
- To analyze the factors influencing the adoption of mobile payment services.
- To check the validity of the TAM model.

## 4. Research Methodology

### *4.1. Construct Measurement*

In the initial stage of the current study, existing literature on technology adoption technology advancement was reviewed. Therefore, based on our review, we prepared our survey instrument. This process helped us in knowing the gap in research, originality and collecting the attributes/variables for the study. A structured questionnaire was prepared, which consisted of attributes connected to technology adoption, advancement, and behavioural shift. A Likert scale with five points was used. The questions in our survey instrument were created by translating construct definitions into a questionnaire format or modifying existing instruments (e.g., knowledge of mobile payments). Constructs such as Perceived Usefulness (PU), Perceived Ease of Use (PEU), and Behavioural Intention (BI) were used and questions regarding the same were prepared with the help of (Campbell and Singh, (2017) (Davis, 1989), (Karaarslan and Şükrü, 2015) & (Venkatesh *et al.,* 2003) studies.

### *4.2. Data Collection Procedure*

For recording data, online surveys are convenient and accurate, and they help prevent responders from missing items (Chang and Wu, 2012). The questionnaire was prepared after reviewing the literature

and administered to the selected respondents. The survey was conducted for over ten days, and the responses were collected through online questionnaires using Google forms. The data was collected from one hundred five respondents, but two had not been filled, so these two questionnaires were rejected due to invalid or missing responses. Finally, one hundred three responses were eventually utilized for the analysis. The questions were asked, keeping in mind the following attributes: secure transaction, ease of use, data privacy, shifts from unorganized to organized, and trust.

## 5. Data Analysis and Interpretation

The collected data was presented and analyzed in this section through the distributed questionnaires. In addition, the influence of each attribute on others was studied, and confirmatory factor analysis was used. The population analysis of the samples was based on descriptive statistics. Data had been analyzed using SPSS version 26. Given the nature of the Mobile Payment System, the sample consists of the users who were young and pursuing higher education, also able to afford a smartphone. Thus, this sample represented the people who use mobile e-wallets; as per the study of Brown (2002), Cronbach's alpha was used to examine the reliability and validity through the construct measurement's internal consistency.

### *5.1. Demographic Details of Participants*

**Table 1: Demographic Details of Participants**

| | | *Frequency* | *Per cent* |
|---|---|---|---|
| Gender | Male | 35 | 34.0 |
| | Female | 66 | 64.1 |
| | I prefer not to say | 2 | 1.9 |
| | Total | 103 | 100.0 |
| Marital Status | Single | 91 | 88.3 |
| | Married | 12 | 11.7 |
| | Total | 103 | 100.0 |
| Age | 18-25 | 74 | 71.8 |
| | 26-32 | 24 | 23.3 |
| | 33-40 | 4 | 3.9 |
| | 41-48 | 1 | 1.0 |
| | Total | 103 | 100.0 |
| Educational Qualification | $12^{th}$ | 9 | 8.7 |
| | Graduate | 30 | 29.1 |
| | Postgraduate | 54 | 52.4 |
| | Others | 10 | 9.7 |
| | Total | 103 | 100.0 |

*contd. table 1*

| | | | |
|---|---|---|---|
| Status of Employment | Student | 60 | 58.3 |
| | Employed | 37 | 35.9 |
| | Self Employed | 6 | 5.8 |
| | Total | 103 | 100.0 |
| Purchase Preferences | Both | 7 | 6.8 |
| | Offline e.g., Kirana stores | 71 | 68.9 |
| | Online, e.g., Grofers, Big Basket and others. | 25 | 24.3 |
| | Total | 103 | 100.0 |

*Source:* Authors' Own Calculation

Table 1 represents the respondents' demographics such as Gender, Marital Status, Age, Qualification, Employment status and Purchase Preference. For the study, one hundred and three responses were used. The respondents' demographic profile is expressed in Table 1. With respect to gender, females are more in number than males (64.1 per cent) and (34 per cent), respectively. As far as age is concerned, the respondents were mostly aged between 18-25 years (71.8%) and 26-32 years (23.3%); therefore, 95.1% of responses are covered within 18-32 years aged participants. The majority have at least a bachelor's degree or equivalent (about 52.4%, including the postgraduates) when it comes to education. In terms of occupation, students account for 58.3% of the respondents, while employed people account for 35.9% of the respondents. Most respondents preferred offline purchases from local Kirana stores, 68.9%, and respondents preferred online purchasing was 24.3% only.

Respondents were asked to answer a list of 11 statements to evaluate their usage and behaviour pattern. These eleven statements were examined to minimize correlation and reveal compact and meaningful dimensions through Factor Analysis. Initially, a reliability check was done on these questions (statements) to refine the scale and eliminate unnecessary statements. Table 3 shows the statistics named as Cronbach alpha and corrected-item-to-total correlation in column 5 and column 4, respectively. On the other hand, column 2 and column 3 shows the scale mean and variance if that statement (question) is deleted from the scale.

### *5.2. Descriptive Analysis*

**Table 2: Respondents' Rating on the Statements Put in the Questionnaire**

| | *Strongly agree* | *Agree* | *Neutral* | *Disagree* | *Strongly Disagree* | *Total* |
|---|---|---|---|---|---|---|
| I think using MPS puts my privacy at risk | 9 | 38 | 34 | 21 | 1 | 103 |
| | 8.74% | 36.89% | 33.01% | 20.39% | 0.97% | 100.00% |
| I think using MPS in online purchasing has the potential risk of fraud/cheating | 12 | 46 | 31 | 13 | 1 | 103 |
| | 11.65% | 44.66% | 30.10% | 12.62% | 0.97% | 100.00% |

*contd. table 2*

| | *Strongly agree* | *Agree* | *Neutral* | *Disagree* | *Strongly Disagree* | *Total* |
|---|---|---|---|---|---|---|
| I think using MPS fits well with the way I like to engage in online transactions | 12<br>11.65% | 69<br>66.99% | 16<br>15.53% | 4<br>3.88% | 2<br>1.94% | 103<br>100.00% |
| I think using MPS would increase my productivity in online transactions | 17<br>16.50% | 65<br>63.11% | 17<br>16.50% | 3<br>2.91% | 1<br>0.97% | 103<br>100.00% |
| I think MPS allows me to make payments Faster | 33<br>32.04% | 61<br>59.22% | 6<br>5.83% | 1<br>0.97% | 2<br>1.94% | 103<br>100.00% |
| I think MPS makes it too easy for Government and Banks to spy on people | 19<br>18.45% | 50<br>48.54% | 28<br>27.18% | 5<br>4.85% | 1<br>0.97% | 103<br>100.00% |
| I think because of Mobile wallets, Banking and UPI. My purchase Pattern has changed | 30<br>29.13% | 60<br>58.25% | 8<br>7.77% | 5<br>4.85% | 0<br>0.00% | 103<br>100.00% |
| I think because of Mobile wallets, Banking and UPI. My payments have become systematic and well managed | 12<br>11.65% | 53<br>51.46% | 22<br>21.36% | 14<br>13.59% | 2<br>1.94% | 103<br>100.00% |
| MPS has helped me in reducing my offline Transactions | 18<br>17.48% | 65<br>63.11% | 13<br>12.62% | 6<br>5.83% | 1<br>0.97% | 103<br>100.00% |
| I use MPS because of the best offers/deals they claim to give | 8<br>7.77% | 50<br>48.54% | 26<br>25.24% | 17<br>16.50% | 2<br>1.94% | 103<br>100.00% |
| I think Mobile Banking is easy to use | 29<br>28.16% | 59<br>57.28% | 9<br>8.74% | 2<br>1.94% | 4<br>3.88% | 103<br>100.00% |

*Source:* Authors' Calculation

### *5.3. Analysis of Statements*

**Table 3: Descriptive, Item-Total Correlation-Cronbach's Alpha**

| | *Scale Mean if Item Deleted* | *Scale Variance if Item Deleted* | *Corrected Item-Total Correlation* | *Cronbach Alpha* |
|---|---|---|---|---|
| I think Mobile Banking is easy to use | 37.58 | 12.402 | 0.149 | 0.268 |
| I think because of Mobile wallets, Banking and UPI. My payments have become systematic and well managed | 38.07 | 13.201 | 0.000 | 0.487 |
| I think using MPS fits well with the way I like to engage in online transactions | 37.84 | 11.740 | 0.326 | 0.651 |
| I think MPS allows me to make payments faster | 37.46 | 11.133 | 0.474 | 0.691 |
| I use MPS because of the best offers/deals they claim to give | 38.20 | 12.517 | 0.105 | 0.500 |
| I think using MPS would increase my productivity in online transactions | 37.73 | 12.063 | 0.290 | 0.699 |

*contd. table 3*

| | *Scale Mean if Item Deleted* | *Scale Variance if Item Deleted* | *Corrected Item-Total Correlation* | *Cronbach Alpha* |
|---|---|---|---|---|
| I think MPS makes it too easy for the Government and Banks to spy on people | 37.85 | 12.635 | 0.124 | 0.552 |
| I think using MPS puts my privacy at risk | 38.36 | 12.703 | 0.070 | 0.721 |
| I think using MPS in online purchasing has the potential risk of fraud/cheating | 38.15 | 12.439 | 0.135 | 0.665 |
| I think because of Mobile wallets, Banking and UPI. My purchase Pattern has changed | 37.52 | 11.448 | 0.410 | 0.676 |
| MPS has helped me in reducing my offline transactions | 37.74 | 12.431 | 0.184 | 0.758 |

*Source:* Authors' Calculation

Using Cronbach's alpha test, the models were checked for reliability. Nunnally (1978) proposed that the score of each build would be greater than 0.6 to be viewed as reliable. As shown in Table 5, Cronbach's alpha (reliability) ranges from 0.601 to 0.690. Because the overall reliability of Measurement is above 0.6, as shown in Table 4, the instrument was shown to have adequate internal consistency, and therefore, all variables are reliable. Few statements had Cronbach alpha as less than 0.6; therefore, those have not been considered further as they do not fulfil the minimum criteria proposed by Nunnally (1978).

**Table 4: KMO and Berlet's Test of Sphericity**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.655 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 205.698 |
| | Df | 55 |
| | Sig. | .000 |

*Source*: Authors' Own Calculation

Factor analysis with varimax rotation was used. Kaiser-Meyer-Olkin (KMO) and Barlett's Test of Sphericity (Dziuban, 1974) was done to examine the appropriateness of the collected data. Table 4 displays the sampling adequacy scale Kaiser-Meyer-Olkin, which was 0.655. Therefore, it was deemed acceptable to implement the factor analysis 0.00 to 0.49 is considered unacceptable, 0.50 to 0.59 is horrible, 0.60 to 0.69 is poor, 0.70 to 0.79 is considered medium, 0.80 to 0.89 is considered meritorious, and 0.90 to 1.00 is fantastic (Cerny and Kaiser, 1977). Barlett's Test of Sphericity at 205.698 is highly significant at five per cent of the significance level. According to Bartlett's test of sphericity, the correlations between items were suitably significant for Principal component Analysis, 2 (55) = 205.698. These values confirm the statistical significance of the sample to run factor analysis.

### *5.4. Analysis of Reliability and Validity*

**Table 5: Results of Reliability and Validity Analysis**

| *Items* | *Factors group* | | | *Cronbach's alpha (Reliability)* |
|---|---|---|---|---|
| | *1* | *2* | *3* | |
| Q1_Perceived Usefulness | .842 | | | .690 |
| Q2_Perceived Usefulness | .772 | | | |
| Q3_Perceived Usefulness | .699 | | | |
| Q1_Trust and Privacy | | .819 | | .632 |
| Q2_Trust and Privacy | | .812 | | |
| Q3_Trust and Privacy | | .501 | | |
| Q1_Behaviroal Shift | | | .863 | .601 |
| Q2_Behaviroal Shift | | | .732 | |

*Source*: Authors' Calculation

Table 5 shows the result of reliability and validity analysis. The findings were deemed suitable for further investigation. Variables with loading larger than 0.3 are crucial for (Hair *et al.*, 1998); similarly, loading greater than 0.4 is more critical, while loadings of 0.5 or above are highly significant. This study includes items having a load of 0.3 or above. Factor analysis with three phases was carried out. Four factors could initially be discovered, and factor loadings would generate Varimax rotation. To obtain relevant factors, the most common decision-making strategy is to find essential factors with an Eigenvalue of more than one (Albadvi *et al.,* 2007). A total of three factors were identified, with Eigenvalues greater than 1.0. Factor 1 seemed to measure a dimension of *'Perceived Usefulness'*, how valuable and productive the mobile payment system has been. Factor 2 tapped into aspects of a person's 'Trust and Privacy'. Factor 3 revealed a '*Behavioural Shift*' in users shifting towards online payments. Following the data analysis, reliability and validity are analyzed in this article. Table 5 shows Cronbach's reliability results and factor analysis for validity.

### *5.5. Factors Involved*

#### *5.5.1. Factor 1: Perceived Usefulness (PU)*

Three statements have been loaded perceived usefulness factor, and the statement that MPS (Mobile Payment System, other MPS will be used) would increase my productivity in online transactions has the most significant loading as 0.842 followed by the statement that MPS allows making payments faster has the factor loading as 0.772 and the third statement that MPS fits well with the way I like to engage in online transactions has factor loading as 0.699.

### *5.5.2. Factor 2: Trust and Privacy (T&P)*

After the Perceived Usefulness, the most significant factor has been Trust and Privacy. Three statements, i.e., MPS put my privacy at risk (0.819), MPS in online purchasing has a potential risk of fraud/ cheating (0.812), Mobile Banking is easy to use (0.501) have been loaded on Trust and Privacy.

### *5.5.3. Factor 3: Behavioural Shift (BS)*

It is the third dominant factor. Two statements have been loaded on Behavioural Shift. These statements are MPS has helped me reduce my offline transactions (0.863), Mobile wallets, Banking, and UPI have led to a change in purchase Patterns (0.732).

## 6. Findings

This study explains the significance of various essential factors kept in mind by the respondents while using the mobile payment system. All statements have been analyzed using confirmatory factor analysis, and three factors (Perceived Usefulness, Trust and Privacy and Behavioural Shift) have been identified. Mobile payment systems provide convenience in organizing payments and keeping a record of them. It is the faster way to make payments. This study suggests that perceived usefulness is the critical factor influencing the adoption of the mobile payments system. However, another view: despite its benefits, few users still find it risky as there are privacy concerns. A statement such as "MPS has helped me reduce my offline transactions" has the most considerable factor loading, i.e., 0.863. It has been observed that since online retailing is relatively easy, it has influenced the purchase pattern of respondents. They are more inclined towards organized retailing as compared to unorganized retailing.

## 7. Conclusion

This study found that usefulness, trust, and privacy play a key role in technology adoption, as mentioned in the TAM model. It was found (with the highest factor loading) that the mobile payment system has influenced the users to adopt online mode and shift from the offline mode; therefore, there is a behavioural shift. Users are more inclined towards the online payment system. After the initiative of Pradhan Mantri Jan Dhan Yojana, immense growth in the number of savings bank accounts was found. This has eventually led to a growth in the mobile payments system. This study could help the interested stakeholders to analyze the impact of the shift towards mobile payments in unorganized sectors, especially in rural or remote areas. Stakeholders must give attention to the industry's requirements as far as mobile payment is concerned. Financial inclusion should be given importance.

This study also reveals that there is no doubt they provide convenience to the user, but there is a lot to be examined. It was observed that several people were hesitant to adopt technology developments and innovations due to security concerns, despite the demand for quick and trouble-free transactions. Better security mechanisms are required when various data sources are combined into one domain.

As far as future scope is concerned, more studies are needed to determine how this technology has opened new areas of vulnerability and risk and how best to give them the security to ensure customer uptake and acceptability. This study would also assist parties engaged in designing and executing a mobile payment system (Dennehy and Sammon, 2015). The management consequences

are well established when implementing these mobile systems and, for that matter, any new/modern technology.

## 8. Limitations

There have been certain inconsistencies in the findings of the paper. The findings reveal only restricted consumer experiences with the mobile payment system. A lot can be discussed, such as social context and the impact of a consumer's behaviour. Mobile payments are not a conventional phenomenon. These conditions direct the way to restricted generalizability, it is tough to generalize the findings of this study. It may not be possible to generalize it to other cellular contexts as well considering the sample size taken for this study. It is essential to mention that perceived security is subjective and mobile users may have different security concerns, which is altogether a different study area. Second, the study's sample size was small and could be increased in future studies, primarily made up of users who had an accessible internet connection and, as a result, a dependable second-best replacement, which may have influenced their views on mobile payments. Third, this is a pre-Covid-19 study, and now we have entered into a completely different realm; therefore, the impact of Covid-19 waves can be studied in future studies.

## References

Albadvi, A., Keramati, A. & Razmi, J. (2007). Assessing the impact of information technology on firm performance considering the role of intervening variables: organizational infrastructures and business processes reengineering. *International Journal of Production Research*, 45:12, 2697-2734.

Au, Y. A., & Kauffman, R. J. (2008). The economics of mobile payments: Understanding stakeholder issues for an emerging financial technology application. *Electronic Commerce Research and Applications*, 7(2), 141-164.

Bezhovski, Z. (2016). The Future of the Mobile Payment as Electronic Payment System. *European Journal of Business and Management, 8 (8)*, 127-132.

Brown, J. D. (2002). The Cronbach alpha reliability estimate. *JALT Testing & Evaluation SIG Newsletter*, *6*(1), 17-19.

Campbell, D., & Singh, C. B. (2017). A Study of Customer Innovativeness for the Mobile Wallet Acceptance in Rajasthan. *Pacific Business Review International*, *10*(6), 7-15.

Cerny, B. A., & Kaiser, H. F. (1977). A study of a measure of sampling adequacy for factor-analytic correlation matrices. *Multivariate behavioural research, 12(1),* 43-47.

Chang, M. L., & Wu, W. Y. (2012). Revisiting perceived risk in the context of online shopping: An alternative perspective of decision making styles. *Psychology & Marketing*, *29*(5), 378-400.

Chopra K. (2017). Attitude of unorganized retailers towards mobile payments. *International Journal of Research in IT and Management,* 7(3), 95-100.http://dx.doi.org/10.1007/978-981-13-1610-4_18

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly, 13(3)*, 319–340.

De Kerviler, G., Demoulin, N. T., & Zidda, P. (2016). Adoption of in-store mobile payment: Are perceived risk and convenience the only drivers? *Journal of Retailing and Consumer Services*, *31*, 334-344.

Dennehy, D., & Sammon, D. (2015). Trends in mobile payments research: A literature review. *Journal of Innovation Management*, *3*(1), 49-61.

Digital Payments in India - statistics & facts | Statista. (n.d.). Retrieved June 10, 2021, from *https://www.statista.com/topics/5593/digital-payment-in-india/*

Doan, N. (2014). Consumer adoption in mobile wallet: a study of consumers in Finland, *Turku University of Applied Science Thesis*.

Dziuban, C. D., & Shirkey, E. C. (1974). When is a correlation matrix appropriate for factor analysis? Some decision rules. *Psychological Bulletin,* 81(6), 358–361.

Goswami, P. & Mishra, M.S. (2009), "Would Indian consumers move from Kirana stores to organized retailers when shopping for groceries?", *Asia Pacific Journal of Marketing and Logistics*, Vol. 21 No. 1, pp. 127-143.

Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. & Black, W. C. 1998. *Multivariate Data Analysis, Fifth Edition*, Upper Saddle River, New Jersey: Prentice-Hall

India - Covid-19 Impact on Digital Payment usage 2020 | Statista. (n.d.). Retrieved June 10, 2021, from *https://www.statista.com/statistics/1111082/india-coronavirus-impact-on-digital-payment-usage/*

India: Mobile Payments Market Value 2015-2025 | Statista. (n.d.). Retrieved June 10, 2021, from *https://www.statista.com/statistics/1191218/india-value-of-mobile-payments-market/*.

Jain, S. (2020). Perspective of online retailing in India. *Journal of Management Research and Analysis*, *5*(2), 213-216.

Karaarslan, M. H., & M. Şükrü A. (2015). Consumer Innovativeness: A Market Segmentation. *International Journal of Business and Social Science*, 6(8), 227–237.

Keramati, A., Taeb, R., & Larijani, A. M. (2010). The adoption of mobile payment: A descriptive study on Iranian customers. *International Journal of Electronic Customer Relationship Management*, 4(3), 264-279.

Keramati, A., Taeb, R., Larijani, A. M., & Mojir, N. (2012). A combinative model of behavioural and technical factors affecting 'Mobile'-payment services adoption: an empirical study. *The Service Industries Journal*, *32*(9), 1489-1504.

Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, *26*(3), 310-322.

Nunnally, J.C. (1978). *Psychometric Theory*. New York: McGraw-Hill.

Renjan, R & Anju K. (2019). Perception of Smartphone users Towards Mobile Payment System an Empirical Study. *International Journal of Recent Technology and Engineering,* 8(1), 424-434.

Rogers, E.M. (1983) Diffusion of innovations, New York: The Free Press.

Shin, D. H. (2010). Modeling the interaction of users and mobile payment system: Conceptual framework. *International Journal of Human-Computer Interaction*, *26*(10), 917-940.

Shrestha, S. (2018). Foreign Direct Investment in Retail Sector: *The Case of India.*

Singh, N., Sinha, N., & Liébana-Cabanillas, F. J. (2020). Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. *International Journal of Information Management*, *50*, 191-205.

Sinha, M., Majra, H., Hutchins, J., & Saxena, R. (2019). Mobile payments in India: the privacy factor. *International Journal of Bank Marketing*, 37(1), 192-209.

Sivanesan, R. & Green, G. (2019). Impact of Organized Retail on Unorganized Retail Sector. *Asian Journal of Managerial Science*, 8(1), 28-34. *http://dx.doi.org/10.51983/ajms-2019.8.1.1451.*

Slade, E., Williams, M., Dwivedi, Y., & Piercy, N. (2015). Exploring consumer adoption of proximity mobile payments. *Journal of Strategic Marketing*, *23*(3), 209-223.

Taylor, E. (2016). Mobile payment technologies in retail: a review of potential benefits and risks. *International Journal of Retail & Distribution Management*, 44(2), 159-177.

Thakur, R., & Srivastava, M. (2014). Adoption readiness, personal innovativeness, perceived risk, and usage intention across customer groups for mobile payment services in India. *Internet Research*, 24(3), 369-392.

Tornatzky, L. G., & Klein, K. J. (1982). Innovation characteristics and innovation adoption-implementation: A meta-analysis of findings. IEEE Transactions on engineering management, (1), 28-45.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 425–478.

Wani, T. A., & Ali, S. W. (2015). Review & Scope in the Study of Adoption of Smartphones in India. *Journal of General Management Research*, *3*(2), 101-118.

Waris, F. S., Mubarik, F. M., & Pau, L. F. (2006). Mobile Payments in the Netherlands: Adoption Bottlenecks and Opportunities, or… Throw out Your Wallets. *ERIM report series reference no. ERS-2006-012-LIS*.

## Appendix 1

| *Survey items* | *Statements* |
|---|---|
| Q1_Perceived Usefulness | MPS would increase my productivity in online transactions |
| Q2_Perceived Usefulness | MPS allows making payments faster |
| Q3_Perceived Usefulness | MPS fits well with the way I like to engage in online transactions |
| | |
| Q1_Trust and Privacy | MPS put my privacy at risk |
| Q2_Trust and Privacy | MPS in online purchasing has a potential risk of fraud/cheating |
| Q3_Trust and Privacy | Mobile Banking is easy to use |
| | |
| Q1_Behavioural Shift | MPS has helped me in reducing my offline transactions |
| Q12_Behavioural Shift | Mobile wallets, Banking, and UPI have led to a change in purchase Patterns. |

*Source*: (Campbell and Singh, 2017), (Davis, 1989), (Karaarslan and Şükrü, 2015) & (Venkatesh *et al.*, 2003)

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.05*

# Impact of Demographic Factors on Purchase Intention of Organic Skin Care Products: A Study in Select Cities of India

**Ritu Narang[1] and Radhika Sharma[2*]**
[1]*Associate Professor, Department of Business Administration, University of Lucknow, Lucknow. Uttar Pradesh.*
*E-mail: ritu_vnarang@yahoo.co.in*
[2]*Research Scholar, Department of Business Administration, University of Lucknow, Lucknow, Uttar Pradesh.*
*E-mail: lkouniv.radhikasharma@gmail.com*
[*]*Corresponding Author*

**To cite this paper**

Narang, R., & Sharma, R. (2021). Impact of Demographic Factors on Purchase Intention of Organic Skin Care Products: A Study in Select Cities of India. *Orissa Journal of Commerce.* 42(4), 58-73.

**Keywords**

Organic products, Skin care, Purchase intention, Demographic factors

**JEL Classification**

M10, M30, M31, M37

**Abstract:** Global organic skin care industry is expected to register a phenomenal growth in the next five years due to increasing popularity of healthier lifestyle. Surprisingly, most existing literature is limited to organic food or personal care products. This study is a pioneering attempt to profile Indian users of organic skin care products. Demographic relationship with purchase intention was empirically tested. Employing regression analysis, the findings revealed that personal income and education have significant influence on intention to buy organic beauty/ skin-care products. Results of this study have crucial theoretical and practical implications for marketers of organic skin care industry as it will give them an insight regarding Indian consumers of organic skin care products. Firms can develop effective marketing strategies for organic skin care products focusing on the key demographic influences by pondering over the results of this study.

## 1. Introduction

According to a report, global cosmetic industry is projected to register a CAGR of 5.3% from 2021 to 2027 and will be worth $463.5 billion. Cosmetics have become an indispensable part of modern lifestyle. Global competition has increased due to a rise in demand for cosmetic products. Skin care and cosmetic brands are trying to outdo each other in order to capture a larger market share (Cosmetics Europe, 2020). In order to boost their volume of sales, skin care and cosmetic brands are aligning the consumers' inclination to healthier lifestyle with their organizational vision and mission (Ghazali *et al.*, 2017). In this direction, many skin care companies are investing in personal care products which are organic in their constitution. This is an attempt to revamp stagnant cosmetics markets which have been facing a decrease in sale in some countries such as, France, Italy and the USA, to name a few (Nosi *et al.,* 2020).

Global market size of organic personal care products in 2019 was US$ 15,500 million. This sales figure is expected to double in 2024. In a report by Organic Trade Association, it was mentioned that

the sale of products which are organic in the United States in 2016 crossed US$ 47,000 million (Hwang and Chung, 2019). After the outbreak of Covid-19, consumers' have become very cautious. They are more inclined toward using safer and healthier products (Organic Trade Association, 2006). Organic skin care market is likely to attain a growth rate of 8.5% during the period, 2021 - 2026. In India, the market will grow by 25% during 2021-2026. Research scholars have given consensus on the fact that one's health acts as a positive predictor of attitude and intention to buy organic products. Millennials are also buying more organic products, indicating that the future is bright for the market (Molinillo *et al.,* 2020).

Considering the recent growth in cosmetic industry, a closer investigation and analysis of demand and supply of organic beauty products is relevant for scholars who are associated with retail sector and consumer behavior (Ghazali *et al*., 2017; Prakash *et al.,* 2019;). The market of organic beauty products is still in the developmental stage. Sadiq *et al.* (2020) posit that more studies should be carried out in this area to determine the factors which affect intention to buy organic beauty products among consumers. The area of focus of this study is organic skin care market which is a part of organic personal care product market. There exists a significant body of work in the realm of organic products, especially food. Organic skin care and beauty products are a promising field which has recently garnered attention among research scholars owing to the phenomenal growth rate of the sector.

## 2. Review of Literature

### *2.1. Organic Skin Care Products*

Skin care is an integral part of women's personal care regime. It is a carefully planned process, which includes all steps from correction to prevention, in the process of makeup. Organic skincare can be referred to as the skincare regime that extensively involves the utilization of organic products. The sale organic and green beauty products are witnessing a noticeable expansion (Onel, 2016; Raska and Shaw, 2012). A surge in environmental awareness (Nimse *et al.,* 2007), health consciousness, wariness regarding harmful chemicals (on skin) have increased the demand for healthier, safer and paraben-free organic beauty products. Personal care products include feminine hygiene products, hair/skin care, colour cosmetics, toiletries, oral care and deodorants. The formulations of organic personal care products are free from pesticides, fertilizers and GMO's, as a result of this, they are much in vogue. Organic skin care products claim that they are safer for the skin since they are made of natural ingredients like extracts of roots, leaves, flowers and herbs. The extracts are mixed with carrier agents and emulsifiers. Some countries have created their own labelling and differing certification standards of organic skin care products and are in competition with one another. Ecocert, the Soil Association, the BDiH, the USDA, the ICEA and CosmeBio are some examples of leading certification agencies of organic products.

Most of existing literature has focused on green skin care products. Ideally green and organic products are non-toxic, durable and made from materials that are recycled.

### *2.2. Demographic Factors and Purchase Intention*

Similarly, earlier studies have affirmed that women are keener in using beauty and personal care products as compared to men (Lockie *et al*., 2002; McEachern and McClean, 2002; Storstad and Bjorkhaug,

2003). Most consumers of organic food products are usually younger than non-users (Jolly, 1991). A number of researches (Thompson and Kidwell, 1998; Fotopoulos and Krystallis, 2002) posit that younger consumers might be ecologically conscious but unwilling to spend much owing to their lowers incomes. In contrast to them, aged and mature people are conscious about health and tend to spend more on food products which are organic. Social consciousness, apart from concern for health also affects young consumers' intention to spend more on organic products. It is anticipated that there will be a definitive impact on the sale of organic beauty products in times to come (Zollo *et al.,* 2021).Global market of organic personal care products is projected to be worth US$ 54.5 million in the coming decade. The rapid use of Internet, social interactions, brands' touch points have invigorated the search for organic beauty products among website users and e-shoppers (Alaei *et al*., 2020; Huang *et al*., 2009).

Presence of children in households has a positive effect on organic attitudes of consumers as well as their purchase behaviour (e.g. Thompson and Kidwell, 1998; Fotopoulos and Krystallis, 2002). Children's age within a household is a crucial factor that influences consumer's intention to buy products which are organic (Wier and Calverley, 2002).

Another variable which has an effect on consumers' intention of using/ buying organic products is income. Income has been predicted to have constructive bearing on intention to buy green products. This is due to the fact that green and organic products are costlier than conventional ones (Awad, 2011). Previous studies have posited that higher income households are more inclined toward consumption of organic items (Lockie *et al.,* 2002; Magnusson *et al*., 2001). On the contrary, some studies (Fotopoulos and Krystallis, 2002) revealed that income is not related to purchase intention of organic food products. In either case, income appears to impact inclination to purchase green and organic items among consumers Durham (2007) explained the nonexistence of any relation between income and intention to buy organic products.

In addition to level of earning, education is affirmed to be a pivotal factor between consumer attitudes and their buying behavior of products which are organic. Storstad and Bjorkhaug (2003), mention that people who buy organic products have a higher educational qualifications than non-organic consumers. This is because the former are more interested in purchasing organic products than the latter (Magnusson *et al*., 2001; Dettmann and Dimitri, 2008). Consumers with higher education are reported to require details regarding processing as well as production procedure of organic products (Wier and Calverley, 2002).

## 3. Objectives and Hypotheses of the Study

### *3.1. Objectives of the Study*

The current study is an attempt to add meaningful content and empirical findings related to consumers of skin care products that are organic. The objectives of this study are:

- To find out demographic factors that affect intent to purchase organic beauty/ skin care products.
- To investigate any difference in demographic profile of users/ buyers and non-users/ non-buyers of organic skin care products.

### *3.2. Hypotheses of the Study*

Based on review of existing literature and objectives of the study, the following hypotheses have been formulated:

$H_{01}$: There exists no significant difference in purchase intention of users and non- users of organic skin care brands.

$H_{02}$: Age has significant effect on intention to buy organic skin care products.

$H_{03}$: Level of income has a significant impact on intention to buy organic skin care products.

$H_{04}$: Education has a significant impact on intention to buy organic skin care products.

$H_{05}$: Occupation has a significant impact on intention to buy organic skin care products.

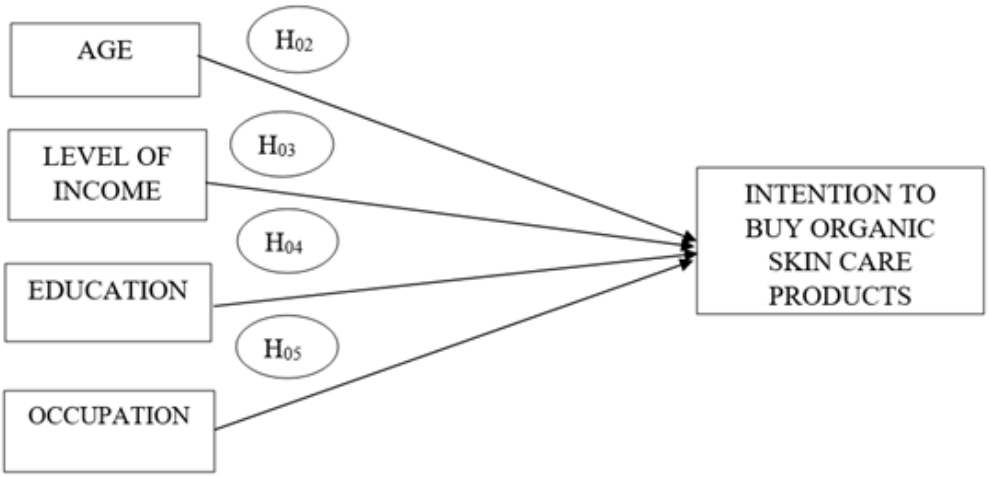


**Figure 1: Conceptual Model**

*Source:* Authors' Own Compilation

## 4. Research Methodology

### *4.1. Sample and Data Collection*

Based on the objective of the study, a structured research instrument was designed to collect data. The instrument was pretested on 25 participants before final data collection. In concurrence with existing literature which posit that primary consumers of skin care products are women (Dardak *et al.*, 2009), for this research, a non- probability, purposive sampling was used. Accordingly, the questionnaire was administered to women in North India. Six cities were selected at random basis including Lucknow, Delhi, Faridabad, Ghaziabad, Gurugram and Noida. The questionnaire was prepared on Google Docs and data was collected online from March to June 2020 through virtual snowball sampling technique. This method of data collection was used due to the on-going global pandemic i.e. Covid-19. Respondents were assured of anonymity and voluntary nature of participating in data collection and were requested

to be truthful and accurate in their response. This was followed by preparing data for analysis, which involved entering data and screening outliers and missing-yielding 340 useable responses.

### *4.2. Measures*

The first part of the questionnaire comprised nine questions relating to demographic information of respondents. These were measured on anominal scales. Two questions assessed whether the respondents used skin care and beauty products which were organic respectively.Participants' keeness to buy four organic skin care products ( i.e. skin brightening cream, sun protection cream, , anti-aging cream and body lotion was measured with three items (e.g. "It is likely that I will purchase an organic body lotion," "If organic body lotion was available, I would buy it," "I plan to buy an organic body lotion.") Two items were adapted from a study by Michaelidou and Hasan (2008), and one item was adapted from Lin (2007). A Wilcoxon test showed that there was no significant difference between the four products hence the data of the four products was combined. The three items used for all four organic skin care products yielding a total of 12 items. Seven-point likert scale ( 1=strongly disagree to 7= strongly agree) was used to measure each item. The scale was tested as reliable (Chronbach's alpha= 0.936).

## 5. Data Analysis

Table 1, depicts the demographic profile of participants which reveals that the highest number of respondents are in 25-34 age group (44.4%) followed by 18-24 age group (23.2%). The highest educational qualification of the respondents is tapped into five groups/categories. It is revealed that in the sample of the data set that graduate/professional degree (32.9%) and post graduate degree (45.9%) holders appear with the highest percentage receptively and the total percentage of those who do not hold graduate degree is just (14.4%) indicating that the sample of this study has more graduate or higher degree holders.

Personal annual income of the respondents is recorded into six categories. It is found that only (28.8%) respondents had no personal income and they are mostly students whose purchasing power is dependent on family income. 68% respondents' income lies between 2 lakhs to 4 lakhs. Family annual income of 54.1% respondents is more than 8 lakhs indicating that more than 50% or the respondents of the sample data have enough purchasing power in terms of family income. Occupation of the participants is recorded in seven categories. Majority of the respondents (57.3%) belong to the professional group followed by students (18.1%). Data was tested for normality and it was not normally distributed. (Shapiro-Wilk Stats = .977, p-value <0.05).

Mann-Whitney was utilized to test the first hypothesis ($H_{01}$) i.e. there exists no significant difference in purchase intention of users and non- users of organic skin care brands. Table 2reveals that there is no significant difference between users and non-users of organic skin care products on purchase intention based on the results (Mann-Whitney U=12962.000). Hence $H_{01}$ is not rejected as there is no significant difference between users and non- users of organic skin care products.

The data was not normal; hence two samples t-test could not be employed in this case. In order to analyse whether there was any significant difference between demographic variables on purchase

**Table 1: Demographic Profile of the Respondents**

| *Variable* | *Total n=340(%)* | *Users n=116(%)* | *Non-users n=224(%)* |
|---|---|---|---|
| **Age** | | | |
| Under 18 | 10(2.9) | 3(2.6) | 7(3.1) |
| 18-24 | 79(23.2) | 25(21.6) | 54(24.1) |
| 25-34 | 151(44.4) | 51(44) | 100(44.6) |
| 35-44 | 51(15) | 22(19) | 29(12.9) |
| 45-54 | 34(10) | 12(10.3) | 22(9.8) |
| 55-64 | 13(3.8) | 3(2.6) | 10(4.5) |
| Above | 64 2(.6) | N | 2(.9) |
| **Education** | | | |
| Higher Secondary/ High School | 10(2.9) | 5(4.3) | 5(2.2) |
| Senior Secondary/Intermediate | 39(11.5) | 11(9.5) | 28(12.5) |
| Graduate/Professional degree | 112(32.9) | 34(29.3) | 78(34.8) |
| Post Graduate degree | 156(45.9) | 58(50) | 98(43.8) |
| PhD or equivalent degree | 23(6.8) | 8(6.9) | 15(6.7) |
| **Personal Annual Income** | | | |
| Nil | 98(28.8) | 33(28.4) | 65(29) |
| <2 Lakh | 28 (8.2) | 7(6) | 21(9.4) |
| 2 Lakh - 4 Lakh | 68 (20) | 19(16.4) | 49(21.9) |
| 4 Lakh - 6 Lakh | 45 (13.2) | 17(14.7) | 28(12.5) |
| 6 Lakh - 8 Lakh | 36 (10.6) | 14(12.1) | 22(9.8) |
| >8 Lakh | 65 (19.1) | 26(22.4) | 39(17.4) |
| **Family Annual Income** | | | |
| <2 Lakh | 28 (8.2) | 11(9.5) | 17(7.6) |
| 2 Lakh - 4 Lakh | 31 (9.1) | 9(7.8) | 22(9.8) |
| 4 Lakh - 6 Lakh | 53 (15.6) | 14(12.1) | 39(17.4) |
| 6 Lakh - 8 Lakh | 44 (12.9) | 14(12.1) | 30(13.4) |
| >8 Lakh | 184 (54.1) | 68(58.6) | 116(51.8) |
| **Occupation** | | | |
| Student | 61(18.1) | 22(19) | 39(17.4) |
| Professional | 193(57.3) | 76(65.5) | 117(52.2) |
| Government | 13(3.9) | 4(3.4) | 9(4) |
| House-wife | 15(4.5) | 4(3.4) | 11(4.9) |
| Self-employed | 33(9.8) | 6(5.2) | 27(12.1) |
| Unemployed | 17(5) | 2(1.7) | 15(6.7) |
| Retired | 5(1.5) | 1(0.9) | 4(1.8) |

*Source:* Authors' Own Compilation from Primary data

intention, Kruskal – Wallis test (non-parametric test) was used instead of one-way analysis of variance (ANOVA). Results of Kruskal – Wallis test reveal that there is no statistical difference between groups of categorical variables.

**Table 2: Depiction of Purchase Intention of Users vs. Non-Users**

**Ranks**

| *Whether using any organic skincare product?* | *N* | *Mean* | *Rank* | *Sum of Ranks* |
|---|---|---|---|---|
| Purchase Intention | | | | |
| Users | 116 | 170.76 | 19808.00 | |
| Non-Users | 224 | 170.37 | 38162.00 | |
| Total | 340 | | | |

**Test Statistics[a]**

| | PUR_INT |
|---|---|
| Mann-Whitney U | 12962.000 |
| Wilcoxon W | 38162.000 |
| Z | -.035 |
| Asymp. Sig. (2-tailed) | .972 |

a. Grouping Variable: Are you currently using any organic skincare product.

*Source:* Authors' Own Compilation

Regression analysis was done with dummy variables to test hypotheses $H_{02}$ -$H_{05}$ (Table 3). Regression with a dummy variable is used when the data has categorical variables. It entails creation of artificial variables to represent distinct categories (Skrivanek, 2009). Table 3 depicts the results. The corrected Model is not significant at any conventional levels of significance (1%, 5%, and 10%) because F-stats (=1.180); p-value (=.261). Hence, this dummy regression model with all the explanatory variables taken together is not significant. However, it is found that taking Education as a predictor, the models is significant at 10% significance level because F-stats (=2.021); p-value (=.091) and the same is also true when personal annual income (PAI) is a predictor because F-stats (=2.115); p-value (=.063). R-squared of the model stands at 8%, while the adjusted R-squared is only 1.2%. The huge difference between R-squared value and the adjusted R-squared value is noticed because all the categorical variables are not significant except two categories of 'Education' and two categories of 'Personal Income,' shown in Table 4. Table 4 shows Parameter estimates (main effects) calculated at 95% Confidence Interval.

EDU=1 to EDU=5 are five groups in the categorical variable education starting with Higher Secondary/ High School (EDU=1), Senior Secondary/ Intermediate (EDU=2), Graduate/Professional degree (EDU=3), Post Graduate degree (EDU=4), and PhD or equivalent degree (EDU=5). The

**Table 3: Regression Results of Demographic Factors and Purchase Intention**

**Tests of Between-Subjects Effects**

Dependent Variable: Purchase Intention

| *Source* | *Type III Sum of Squares* | *Df* | *Mean Square* | *F* | *Sig.* |
|---|---|---|---|---|---|
| Corrected Model | 62.610[a] | 23 | 2.722 | 1.180 | .261 |
| Intercept | 817.656 | 1 | 817.656 | 354.399 | .000 |
| AGE | 8.308 | 5 | 1.662 | .720 | .609 |
| EDU | 18.654 | 4 | 4.663 | 2.021 | .091 |
| PAI | 24.397 | 5 | 4.879 | 2.115 | .063 |
| FAI | 6.939 | 4 | 1.735 | .752 | .557 |
| Occupation | 5.123 | 5 | 1.025 | .444 | .817 |
| Error | 715.221 | 310 | 2.307 | | |
| Total | 6143.185 | 334 | | | |
| Corrected Total | 777.831 | 333 | | | |

a. R Squared = .080 (Adjusted R Squared = .012)

*Source:* Authors' Own Compilation

**Table 4: Parameter Estimates**

Dependent Variable: Purchase Intention

| *Parameter* | *B* | *Std. Error* | *T* | *Sig.* | *95% Confidence Interval* | |
|---|---|---|---|---|---|---|
| | | | | | *Lower Bound* | *Upper Bound* |
| Intercept | 4.056 | .718 | 5.647 | .000 | 2.642 | 5.469 |
| [AGE=1] | -.385 | .774 | -.497 | .619 | -1.908 | 1.138 |
| [AGE=2] | .392 | .569 | .688 | .492 | -.728 | 1.511 |
| [AGE=3] | .303 | .510 | .594 | .553 | -.700 | 1.306 |
| [AGE=4] | .006 | .536 | .012 | .990 | -1.049 | 1.061 |
| [AGE=5] | .115 | .556 | .206 | .837 | -.980 | 1.209 |
| [AGE=6] | 0[a] | . | . | . | . | . |
| [EDU=1] | 1.096 | .661 | 1.658 | .098 | -.205 | 2.396 |
| [EDU=2] | 1.229 | .490 | 2.509 | .013 | .265 | 2.193 |
| [EDU=3] | .872 | .363 | 2.401 | .017 | .157 | 1.586 |
| [EDU=4] | .589 | .352 | 1.672 | .095 | -.104 | 1.282 |

*contd. table 4*

| *Parameter* | *B* | *Std. Error* | *T* | *Sig.* | *95% Confidence Interval* | |
|---|---|---|---|---|---|---|
| | | | | | *Lower Bound* | *Upper Bound* |
| [EDU=5] | 0[a] | . | . | . | . | . |
| [PAI=1] | -.973 | .338 | -2.874 | .004 | -1.638 | -.307 |
| [PAI=2] | -.735 | .412 | -1.783 | .076 | -1.546 | .076 |
| [PAI=3] | -.702 | .307 | -2.283 | .023 | -1.306 | -.097 |
| [PAI=4] | -.164 | .321 | -.510 | .610 | -.797 | .468 |
| [PAI=5] | -.269 | .328 | -.821 | .412 | -.913 | .376 |
| [PAI=6] | 0[a] | . | . | . | . | . |
| [FAI=1] | .026 | .355 | .074 | .941 | -.672 | .725 |
| [FAI=2] | .100 | .343 | .291 | .771 | -.575 | .774 |
| [FAI=3] | -.086 | .273 | -.316 | .752 | -.624 | .451 |
| [FAI=4] | -.442 | .288 | -1.534 | .126 | -1.008 | .125 |
| [FAI=5] | 0[a] | . | . | . | . | . |
| [Occupation=1] | -.467 | .445 | -1.048 | .295 | -1.343 | .410 |
| [Occupation=2] | -.449 | .423 | -1.061 | .290 | -1.281 | .384 |
| [Occupation=3] | -.756 | .606 | -1.247 | .213 | -1.948 | .436 |
| [Occupation=4] | -.231 | .566 | -.408 | .683 | -1.344 | .882 |
| [Occupation=5] | -.319 | .479 | -.665 | .507 | -1.262 | .625 |
| [Occupation=6] | 0[a] | . | . | . | . | . |

a. This parameter is set to zero because it is redundant.

*Source:* Authors' Own Compilation

reference group in these five educational categories/groups is PhD or equivalent degree (EDU=5). Similarly, PAI=1 to PAI=6 are the six categories/groups of the categorical variable, personal income, starting with Nil (PAI=1), <2 Lakh (PAI=2), 2 Lakh - 4 Lakh (PAI=3), 4 Lakh - 6 Lakh (PAI=4), 6 Lakh - 8 Lakh (PAI=5), and >8 Lakh (PAI=6). The reference group in these six personal income categories/groups is >8 Lakh (PAI=6).

The intercept in the model above or equal to 4.056 is the conditional mean for the groups in the reference categories and the slope coefficient shows the difference between the reference category and the group to which it belongs. For example, Senior Secondary/ Intermediate (EDU=2) shows a significant impact ($p<0.05$) on the purchase intention indicating that Senior Secondary/ Intermediate (EDU=2) has higher impact on intention to purchase organic skin-care products than the reference category (EDU=5). Similarly, Graduate/Professional degree (EDU=3) is also noticed to have a higher impact on intention to purchase organic skin-care products than the reference category (EDU=5) by .872 units.

However, in comparison to the reference category >8 Lakh (PAI=6) in the personal income groups, Nil (PAI=1) and 2 Lakh - 4 Lakh (PAI=3) have lesser intention to purchase organic skin-care

products by -.973 and -.702 units respectively. This implies that true coefficient value ofNil (PAI=1) is 3.083 (= 4.056 - 0.973) and for 2 Lakh - 4 Lakh (PAI=3) it is 3.354 (= 4.056 - 0.702). Age groups, occupation groups, and levels of family income have no impact on purchase intention because the p-values >0.05 for each of the categories of these variables.

Further, Table 5 shows that the null hypothesis of homogeneity of variance is not rejected at 5% significance level because p-value > 0.05.

**Table 5: Levene's Test of Equality of Error Variances**

| Dependent Variable: Purchase Intention | | | |
|---|---|---|---|
| *F* | *df1* | *df2* | *Sig.* |
| .951 | 187 | 146 | .629 |

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Age+ Education + Personal Annual Income + Family Annual Income + Occupation

*Source:* Authors' Own Compilation

The criteria for accepting the hypothesis was that the p value should be 0.05 or below that (≤ 0.05). The significance level for acceptance was 5%. Any hypothesis with a p value greater than 0.05 cannot be accepted. Detailed analysis reveal that $H_{02}$ (Table 3) i.e. age has no significant impact on intent to buy organic beauty/ skin care products because p>0.05 ( 0.609). Hence $H_{02}$ is rejected as its p value is higher than the acceptance level.

Level of income has been grouped into personal annual income and family annual income. Personal annual income is further categorized into six groups starting with Nil (PAI=1), <2 Lakh (PAI=2), 2 Lakh - 4 Lakh (PAI=3), 4 Lakh - 6 Lakh (PAI=4), 6 Lakh - 8 Lakh (PAI=5), and >8 Lakh (PAI=6). The reference group in these six personal income categories/groups is >8 Lakh (PAI=6). The results reveal that only two groups of personal annual income i.e. PAI 1 (p=0.013) and PAI 3 (p=0.017) are significantly related to purchase intention of organic skin care products. None of the categories of family annual income have a significant impact on purchase intention of organic skin care products. Hence, $H_{03}$ i.e. level of income has a significant impact on intention to buy organic skin care products is rejected.

Hypothesis $H_{04}$, i.e. education has a significant impact on intention to buy organic skin care products is rejected as the p value is 0.091 which is not within the acceptance level of d" 0.05. Education has been grouped into five categories (EDU=1 to EDU=5) i.e. Higher Secondary/ High School (EDU=1), Senior Secondary/ Intermediate (EDU=2), Graduate/Professional degree (EDU=3), Post Graduate degree (EDU=4), and PhD or equivalent degree (EDU=5). The reference group in these five educational categories/groups is PhD or equivalent degree (EDU=5). It can be seen from the results that EDU 2 and EDU 3 categories of education have a significant impact on intention to buy organic skin care products. Consumers with senior secondary and graduate or professional degrees have depicted a significant impact on intention to buy organic skin care products. Hypothesis $H_{05}$ i.e.

occupation has a significant impact on purchase intention of organic skin care products has been rejected as its p value is 0.817 which is higher than the acceptance level (≤ 0.05).

## 6. Results and Discussion

The current study is a pioneer in the field of organic skin care products. There exists considerable literature on purchase intention of organic food products. However, there are limited studies on organic personal care products conducted in some countries like Malaysia (Kim, 2009; Kokoi, 2011). To the best of researchers' knowledge, there is possibly no study on organic skin care products in India. The current study is perhaps, one of the foremost studies which seeks to analyse whether demographic factors impact purchase intention of organic skin care products among Indian consumers.

The results of this study posit that demographic factors do not have a significant impact on intention to buy organic skin care products. A study conducted on Indian consumers of organic food products (Paul and Rana, 2012) postulated that demographic factors have a significant impact on consumption of organic products. Another study on Malaysian consumers by Hasanov and Khalid (2015) stated that demographic characteristics, especially age has a significant impact on purchase intention of organic products. In contrast to this stance, the results of the current study reveal that demographic factors do not have a significant impact on purchase intention of organic skin care products in India. Dangi *et al.* (2020) have also stated that the impact of socio-demographic factors on purchase intention of organic food products has been mixed. Thus, we see that demographic factors have a significant impact on purchase intention of consumers of India and other countries. However, as far as organic skin care products are concerned, demographic predictors do not have a significant impact on intention among Indian consumers. It is quite possible that other factors like psychology, psychographic factors, values, personality and attitude of consumers have an impact on intention to purchase organic skin care products. This requires further investigation.

Results of detailed analysis of demographic factors have yielded certain interesting revelations. In contrast to earlier studies on organic food products, this study reveals that personal and family income has no significant impact on purchase intention of organic skin care products. Earlier studies have affirmed that consumption of organic food product increases with an enhancement in earning (Torjusen *et al.*, 2001). Narayanan *et al.* (2022) posits that young consumers belonging to humble households where members earned substantial incomes would probably purchase organic products. Further, a study on Caucasian consumers revealed that only those consumers bought organic products who had handsome family incomes (Dettman, 2008). Many researchers (Underhill and Figueroa, 1996; Cranfield and Magnusson 2003; Chakraborty *et al.,* 2022) posit that richer households might spend more on organic food products. However, the findings of this study revealed that personal and family annual income do not have a significant impact in shaping purchase intention toward organic skin care products. A plausible reason for this could be the lack of awareness regarding the composition of organic products. There could be lack of clarity among consumers regarding the difference in nature of conventional (chemical based) skin care products and organic skin care products. This calls for revamping the marketing strategy of the organic skin care brands.

A detailed analysis of personal annual income revealed that two categories of consumers i.e. those with nil income and those earning less than four lakhs depicted a significant impact on intention to buy organic skin care products. A plausible reason for this could be the premium pricing of organic skin care products. It is quite possible that the high pricing of these products has a negative impact on intention. It is also a possibility that consumers with high incomes are indifferent towards organic skin care products.

According to the results of the current study, occupation and education have no significant impact on intention to buy organic skin care products. The results of this study find support in a study by Lea and Worsley (2005) which posited that the effect of education on belief in organic food products is almost inconspicuous. However, a study by O'Donovan and McCarthy (2002) revealed that consumers who held high educational qualifications were more interested in purchasing organic products than others. Jolly (1991) highlighted that consumers who purchase organic products usually had university degrees and were willing to pay premium prices for organic products. Interestingly this study revealed that only two categories of educated consumers i.e. consumers with senior secondary/ intermediate qualification and graduates/ professionals are keen to buy organic skin care products. However, it is surprising that there is no impact of higher educational levels (post-graduate Ph.D. equivalent qualifications) on intention to buy organic skin care products. This finding contradicts a number of existing studies which highlight that probability of purchasing organic products increases with education. When compared with existing literature, our findings also suggest that education does not have an impact on intention. Thus, it can be concluded that there is no consensus regarding impact of education on purchase intention. Age, a socio-demographic determinant is not significantly related to intention to purchase organic beauty/ skin care products. Earlier studies also corroborate this finding. Age, has been predicted to be a weak explicator of purchase intention of organic food products (Verain *et al.*, 2012; Bravo *et al.*, 2013). It is suggested that a qualitative research may be carried out to deeply investigate this issue.

## 7. Conclusion

This study is a pioneer work on organic skin care products. Considering the fact that market for cosmetic/ beauty products is projected to witness a growth of around 25% during 2021-2026, marketers would benefit from understanding their customers. This study has important insights for marketers of organic skin care products in India. An important finding of this study is that demographic factors do not significantly influence intention to purchase organic skin care products. As opposed to studies conducted in other countries like Malaysia and Europe where demographic factors play a significant role in purchase intention of organic products, this does not hold true in the Indian context. A significant difference between users and non- users of organic beauty/ skin-care products is missing.

According to this study, only two categories of educated consumers have shown a significant impact on intention to buy organic skin care products. It is surprising that there is no impact of other categories of educated consumers on intention to buy organic skin care products. This finding calls for further investigation by marketers. Furthermore, only two groups in personal income have shown a significant impact on intention to buy organic skin care products. This study has highlighted interesting

areas of concern for marketers. Organic skin cares are priced at a premium level and claim to be safer for consumption. Despite this, there is no significant impact of higher educational and income levels on intention to buy organic skin care products. It is expected that educated consumers with high educational qualifications and source of income would buy products that are safer and healthier. The same holds true for organic food products but not skin care products. The results of this study call for a further analysis of factors which influence intention to buy organic skin care products.

Data was collected from consumers from six cities of North India. So, generalization for the entire country has to be made with caution. Another limitation is, this study is on women only. Further research can be done on men as well. Organic skin care market is still growing; there are umpteen new brands and launched ever year. A similar study can be carried out after a certain period to check the relationship between demographic factors and organic intention among consumers. Since this study reveals that demographic factors do not significantly impact purchase intention of organic skin care products, other factors which may impact intention like psychographic factors, values, personality, attitude may be explored.

## References


Alaei, A. M., Taleizadeh, A. A., & Rabbani, M. (2020). Marketplace, reseller, or web-store channel: The impact of return policy and cross-channel spillover from marketplace to web-store. *Journal of Retailing and Consumer Services*, 102271.

Awad, T. A. (2011). Environmental segmentation alternatives: buyers' profiles and implications. *Journal of Islamic Marketing*.

Bravo, C. P., Cordts, A., Schulze, B., & Spiller, A. (2013). Assessing determinants of organic food consumption using data from the German National Nutrition Survey II. *Food quality and Preference, 28*, 60–70.

Chakraborty, D., & Paul, J. (2022). Healthcare apps' purchase intention: A consumption values perspective. *Technovation*, 102481.

Cosmetics Europe Annual Report (2020) https://cosmeticseurope.eu/files/5716/2373/9480/Cosmetics_Europe_Activity_Report_2020.pdf (Accessed September, 2021)

Cranfield, J. A., & Magnusson, E. (2003). Canadian consumer's willingness-to-pay for pesticide free food products: an ordered probit analysis. *International Food and Agribusiness Management Review*, *6*(1030-2016-82568).

Dangi, N., Gupta, S. K., & Narula, S. A. (2020). Consumer buying behaviour and purchase intention of organic food: a conceptual framework. *Management of Environmental Quality: An International Journal.*

Dardak, R. A., Abidin, A. Z., & Ali, A. K. (2009). Consumers' perception, consumption and preference on organic product: Malaysian perspective. *Economic and Technology Management Review, 4*, 95–107.

Dettmann, R. L. (2008). *Organic produce: Who's eating it? A demographic profile of organic produce consumers* (No. 382-2016-22520).

Durham, C. A. (2007). The impact of environmental and health motivations on the organic share of produce purchases. *Agricultural and Resource Economics Review, 36*, 304–320.

Fotopoulos, C., & Krystallis, A. (2002). Purchasing motives and profile of the Greek organic consumer: a countrywide survey. *British food journal.*

Ghazali, E., Soon, P. C., Mutum, D. S., & Nguyen, B. (2017). Health and cosmetics: Investigating consumers' values for buying organic personal care products. *Journal of Retailing and Consumer Services, 39*, 154–163.

Hasanov, J., & Khalid, H. (2015). The impact of website quality on online purchase intention of organic food in Malaysia: A WebQual model approach. *Procedia Computer Science*, *72*, 382-389.

Huang, P., Lurie, N. H., & Mitra, S. (2009). Searching for experience on the web: An empirical examination of consumer behavior for search and experience goods. *Journal of marketing, 73*, 55–69.

Hwang, J., & Chung, J.-E. (2019). What drives consumers to certain retailers for organic food purchase: The role of fit for consumers' retail store preference. *Journal of Retailing and Consumer Services, 47*, 293–306.

Jolly, D. A. (1991). Differences between buyers and nonbuyers of organic produce and willingness to pay organic price premiums. *Journal of Agribusiness, 9*, 97–111.

Kim, S., & Seock, Y.-K. (2009). Impacts of health and environmental consciousness on young female consumers' attitude towards and purchase of natural beauty products. *International Journal of Consumer Studies, 33*, 627–638.

Kokoi, I. (2011). Female buying behaviour related to facial skin care products.

Lea, E., & Worsley, T. (2005). Australians' organic food beliefs, demographics and values. *British food journal.*

Lin, H. (2007), "Predicting consumer intentions to shop online: an empirical test of competing theories", *Electronic Commerce Research and Application,* Vol. 6 No. 4, pp. 433-42.

Lockie, S., Lyons, K., Lawrence, G.,& Mummery, K. (2002). Eating 'green': motivations behind organic food consumption in Australia. *Sociologia ruralis, 42*, 23–40.

Magnusson, M. K., Arvola, A., Hursti, U.-K. K., Åberg, L., & Sjödén, P.-O. (2001). Attitudes towards organic foods among Swedish consumers. *British food journal.*

McEachern, M. G., & Mcclean, P. (2002). Organic purchasing motivations and attitudes: are they ethical? *International journal of consumer studies, 26*, 85–92.

Michaelidou, N. & Hassan, L.M. (2008), "The role of health consciousness, food safety concern, and ethical identity on attitudes and intentions towards organic food", *International Journal of Consumer Studies,* Vol. 32 No. 2, pp. 163-70.

Molinillo, S., Vidal-Branco, M., & Japutra, A. (2020). Understanding the drivers of organic foods purchasing of millennials: Evidence from Brazil and Spain. *Journal of Retailing and Consumer Services, 52*, 101926.

Narayanan, S., Gruber, J., Liedtke, G., & Antoniou, C. (2022). Purchase intention and actual purchase of cargo cycles: Influencing factors and policy insights. *Transportation Research Part A: Policy and Practice, 155*, 31–45.

Nimse, P., Vijayan, A., Kumar, A., & Varadarajan, C. (2007). A review of green product databases. *A review of green product databases.*

Nosi, C., Zollo, L., Rialti, R., & Ciappei, C. (2020). Sustainable consumption in organic food buying behavior: the case of quinoa. *British Food Journal.*

O'Donovan, P., & McCarthy, M. (2002). Irish consumer preference for organic meat. *British Food Journal.*

Onel, N., & Mukherjee, A. (2016). Consumer knowledge in pro-environmental behavior: An exploration of its antecedents and consequences. *World Journal of Science, Technology and Sustainable Development.*

Organic Trade Association (2006), "The OTA's 2006 manufacturer survey", available at: www.ota.com/pics/documents/short%20overview%20MMS.

Prakash, G., Choudhary, S., Kumar, A., Garza-Reyes, J. A., Khan, S. A., & Panda, T. K. (2019). Do altruistic and egoistic values influence consumers' attitudes and purchase intentions towards eco-friendly packaged products? An empirical investigation. *Journal of Retailing and Consumer Services, 50*, 163–169.

Paul, J., & Rana, J. (2012). Consumer behavior and purchase intention for organic food. *Journal of consumer Marketing.*

Raska, D., & Shaw, D. (2012). When is going green good for company image? *Management Research Review.*

Sadiq, M., Adil, M., & Paul, J. (2021). An innovation resistance theory perspective on purchase of eco-friendly cosmetics. *Journal of Retailing and Consumer Services, 59*, 102369.

Skrivanek, S. (2009). The use of dummy variables in regression analysis. *More Steam, LLC.*

Storstad, O., & Bjørkhaug, H. (2003). Foundations of production and consumption of organic food in Norway: common attitudes among farmers and consumers? *Agriculture and human values, 20*, 151–163.

Thompson, G. D., & Kidwell, J. (1998). Explaining the choice of organic produce: cosmetic defects, prices, and consumer preferences. *American journal of agricultural economics, 80*, 277–287.

Torjusen, H., Lieblein, G., Wandel, M., & Francis, C. A. (2001). Food system orientation and quality perception among consumers and producers of organic food in Hedmark County, Norway. *Food quality and preference, 12*, 207–216.

Underhill, E. U., & Figucro, E. E. (1996). Consumer Perception of Non-Conventionally Grown Produce. *Journal of Food Dism" bution Research. 27 (2).*

Verain, M. C., Bartels, J., Dagevos, H., Sijtsema, S. J., Onwezen, M. C., & Antonides, G. (2012). Segments of sustainable food consumers: a literature review. *International Journal of Consumer Studies*, *36*(2), 123-132.

Wier, M., & Calverley, C. (2002). Market potential for organic foods in Europe. *British Food Journal.*

Zollo, L., Yoon, S., Rialti, R.,& Ciappei, C. (2018). Ethical consumption and consumers' decision making: the role of moral intuition. *Management Decision.*

**Appendix 1**

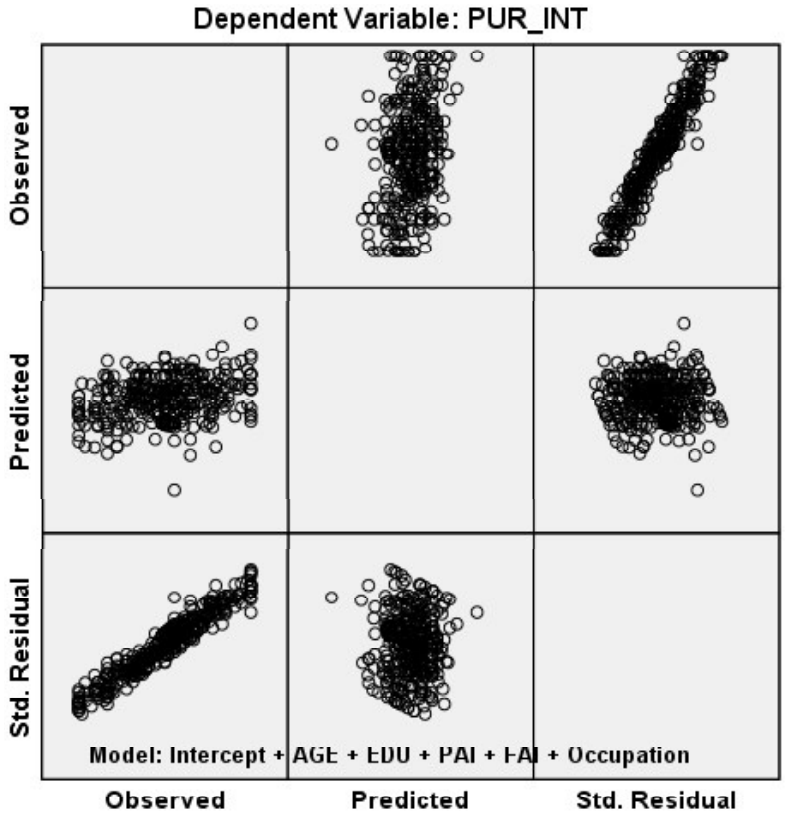


**Figure 2: Scatter plot of Observed, Predicted and Residual values**

*Source:* Authors' Own Compilation

Promoting Research

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.06*

# Service Experience and Customer Satisfaction in Offline and Online Services: A Study on Traditional Apparel Retail in Odisha

**Sandeep Kumar Mohanty[1*] and Ramesh Chandra Das[2]**
[1]*Assistant Professor, School of Commerce, XIM University, Bhubaneswar, Odisha. E-mail: sandeep@xim.edu.in*
[2]*Assistant Professor in Commerce, Bhadrak (Auto) College, Bhadrak, Odisha. E-mail: rameshchandradas99@gmail.com*
[*]*Corresponding Author*

**To cite this paper**

Mohanty, S.K., & Das, R.C. (2021). Service Experience and Customer Satisfaction in Offline and Online Services: A Study on Traditional Apparel Retail in Odisha. *Orissa Journal of Commerce*. 42(4), 74-91.

**Keywords**

Hybrid shopping experience, Customer satisfaction, Traditional apparel marketing, Customer experience, Structural equation modelling

**JEL Classification**

M01, M02, M03, L01, L08

**Abstract:** This study reconnoitres the possibilities of any relationship shift in customer service and customer satisfaction within a new space of the young generations' involvement in buying traditional apparel in Odisha. This study addresses the possible inputs for discrepancies while purchasing the traditional dress. It involves the marketing mix elements as the inputs to assess the consumer service and further consumer satisfaction as the outputs. Structural Equation Modelling has been applied to determine consumers' responses to service experience and customer satisfaction within the theoretical inclusion of traditional apparel in Odisha. The study found that service experience does not drive the customers' satisfaction, and the marketing mix elements do not equally affect the service experience. The findings of this study are relevant for future research on a hybrid buying situation where the traditional products are marketed within young generations' expectations and aspirations. The study will guide marketers to revisit the roles of the marketing mix in dealing with overall consumer experience and satisfaction.

## 1. Introduction

Customer satisfaction is an essential element of marketing (Solimun and Fernandes, 2018). A satisfied customer should be the sole objective of every organisation irrespective of the online or offline business model it follows (Shankar *et al.*, 2003). Customer satisfaction depends on many parameters, and marketers spend more time and effort identifying these customer-focused elements in the marketing excursion (Hamidi and Moradi, 2017). There is not a single study that defines the concept of customer satisfaction as a whole. Organisations have been busy deciding what customers want when satisfaction is the centre stage (Chauhan *et al.,* 2021). So finding the evolving customer satisfaction parameters and comparing customers' responses will be another challenge. Adding to this, today's customers, especially youth, have traditional retailing and online shopping. So these varied shopping experiences and diverse parameters of customer satisfaction make this study more meaningful.

Recently the internet has penetrated as a significant and impactful way to serve the advancement of retail brands (Emanuel *et al.*, 2014). With the infusion of online shopping avenues, the retail market is advancing further and passing through a challenging time. The current web-based models for online shopping are part of an initiative that expects an expansion nobody can imagine (Amatulli *et al.,* 2021). This growth and potential advance can be more challenging. The opportunities will make this market more vibrant to do business and maintain the market quite busy (Herhausen *et al.,* 2015).The advancement of modern technology has provided the customers with many things to consider, and home has become the new place to make decisions (Oh, 2022). The new generation and well-informed customers search for potential information online, find the same in the store, and phase order online (Scarpi *et al.*, 2014). This behaviour is normal now and can be classified as web rooming (Arora and Sahney, 2017).The effect of online and offline behaviour influences customer satisfaction and has different behavioural and psychosocial impacts on customers across different regions also (Huang *et al.,* 2020). The problem related to this inconsistent outcome is a significant gap to explore in this phase of omni-channel adoption and customer engagement. In many ways, offline and online retailing are affecting each other. It has a far-reaching impact on customers' considerations and decision making (Yang *et al.*, 2019). Relating this opinion, Zhang *et al.* (2021) has provided the observation of 'buying online and picking up in the store' as a significant customer engagement that affects the service experience and customer satisfaction.

This study tries to identify how having both online and offline shopping experiences and the customers are finding the services experience and customer satisfaction converging or diverging in buying traditional apparel. Moreover, if anything is changing, then what is the direction? Can customers experiencing a phase of web rooming lead to a new phase of marketing theory development?

## 2. Review of Literature

Online and offline shopping experiences are finding our imagination in many ways. The marketing challenges are different both in online and offline shopping experiences (Sarkar *et al.*, 2021). Tzeng *et al.* (2021) have commented that product related information and price-oriented assistances are the major reasons for customers to select online and offline services. The unfavourable criteria are attributed to degraded product delivery and return issues. Online shopping is a convenient way of making the product visible and approachable thus makes the system quite efficient, keeping various costs under control (Rao, 1999). Consumers find a lot of advantages due to online presence of many brands and these brands focus more on price sensitive marketing (Vaskelainen and Piscitelli, 2018). In a two-decade old study, Zhang *et al.* (2000) have confirmed that services of e-commerce dealing with dress materials are completely different that the other shopping products. The e-visual merchandise is appealing for customers' engagement and purchasing decisions. This customer engagement is a key element of young mass that show keen interest in convenience of order making and order receiving (Tractinsky and Rao, 2001).

As we move to a hybrid mode of transaction, the major concern shifts to beautify presentation and beautification in general. Ratchford *et al.* (2001) have reaffirmed this proposition as a comparative ideological shift in online and offline relationship between market and consumer. For them the overall

game changer is the cost of the product displayed in both points of purchase. Their research further corroborated the product line extension affected majorly with a heavy discounted price tag or a deal. They also referred the product and price related dependency in both online and offline marketing decisions. Online services are website driven, so the technical side of website design, better screen resolution, and hardware related issues are new possibilities for marketers to deal with. The pleasure and soothing side of an online interface is affecting customers' personality and dragging the marketing challenges. In this aspect Zeithaml (2002) has found that the success of e-tailing is a technology adoption and realization of futuristic marketing. This depends on right website creativity, engaging tools for effective engagement, and quick response.

Online and offline buying are becoming more of an adaptive tussle between customers and marketers' ambitions. Kim and Lee (2002) have extended this dilemma to influential marketing elements. They have identified the technology as an enabler and as a designer to bring online influences to meet offline confusions. It is the online store and its pressing limitations move for better website design, innovative products and services. Doolin *et al.* (2005) has pointed out that online transactions make the issue more specific or individualistic. It is also reported that services online are a part of the delivery itself. Rabinovich (2004) & Cao and Zhao (2004) have confirmed that in near future online retailing are finding a collective and valid coexistence with offline. Delone and McLean (2004) have raised the issue of customer engagement and experience that define the mammoth question of customers' real intension in market place. It is found that especially the youth has managed to extract a more positive side of online engagement leaving a space for offline introspection.

Lavie and Tractinsky (2004) have raised the conceptual boldness of beauty in websites marking a move for creative engagement to creative uniqueness. This type of creative expression is the much-needed element for a certain product category. This beautification attracts customers online more than offline. Moran (2020) identified trust as an important element that separates consumers' perception of online and offline services. Bauer *et al.* (2006) equated the services of online retail service vs traditional retail services and highlighted the differences in functional aspect. Adding to this point, Teng *et al.* (2020) propounded that price is the most cherished element that challenge the online and offline service delivery. Yusra *et al.* (2020) recommended that online and offline services are by nature of creation and execution differs in accommodating issues like after-sales service and return policy. Dawn (2011) has found that consumers are progressive people seeking new ways of shopping. Due to internet, customers are difficult entities to predict and satisfy.

Hence a mix of promotion mix tools can bring a balance here. They can be in the form of above the line and below the line activities. Extending this idea, Khan and Sayed (2018) found that effective online and offline marketing must balance quick delivery, reverse flow of goods, and accurateness of delivery of products. Gupta (2013) & Lin *et al.* (2018) have iterated that online and offline marketing confuses with customer driven recommendations also. There are many studies empirically investigate and establish the relationship between e-marketing terms and shoppers' buying behaviour while purchasing traditional apparel both online and offline. There are few more research have been highlighted in the table below.

**Table 1: Research on Both Online and offline Retailing Expectations**

| | | |
|---|---|---|
| Teng *et al.* (2020) | product information and monetary benefits, product delivery and return issues | Both online & offline |
| Rao (1999) | information sharing, cost-efficiency | Both online &offline |
| Vaskelainen and Piscitelli (2018) | better prices, competition and knowledge on goods and services | Both online & offline |
| Zhang *et al.* (2000) | beautification (aesthetic elements) | Both online & offline |
| Tractinsky and Rao (2001) | easy to use, make no effort to place orders | Both online & offline |
| Ratchford *et al.* (2001) | After-sales support and low cost | Both online & offline |
| Eroglu *et al.* (2001) | The one-stop shopping experience, brand options | Both online & offline |
| Zeithaml (2002) | Quick delivery | Both online & offline |
| Doolin *et al.* (2005) | specific or individualistic buying experience, review of the product | Both online & offline |

*Source:* Authors' Own Compilation

The variables identified in the above table are studied extensively. All the variables are part of marketing mix elements (Borden, 1964). These variables are the core of marketing activities, and they respond positively to better marketing planning and implementation (Dominici, 2009). The impact of these variables needs to be assessed further as they are directly affecting the consumer decision-making process and customer service experiences (Ang and Rusli, 2018). So, an extensive literature review has been conducted to assess these variables' role in apparel buying. This analysis is provided below in Table 2.

**Table 2: Literature Review (Extended Marketing Mix Elements in Apparel Retail)**

| *Sl No* | *Variables* | *Researchers* | *Interpretations/Findings* |
|---|---|---|---|
| 1 | Latest fashion | Silva *et al.* (2019) | Customers expect the latest fashion in stores as well as online platforms |
| 2 | One-stop shopping | Kumar *et al.* (2019) | Retailing for apparel needs a one-stop shopping experience |
| 3 | Brand options in a product category | Ferreira *et al.* (2019) | A brand is paramount in fashion retailing to entice customers |
| 4 | Wide varieties of products | Sethi *et al.* (2018) | Variety in the assortment is key to customer satisfaction in fashion retailing |
| 5 | Low price | Silva *et al.* (2020) | Price is the competitive advantage in fashion retail |
| 6 | Discount | Ranto *et al.* (2021) | Discount and deals drive the online, and offline consumer engagement regarding fashion or apparel sells |

*Contd. table 2*

| *Sl No* | *Variables* | *Researchers* | *Interpretations/Findings* |
|---|---|---|---|
| 7 | Purchase frequency | Gandhi and Bhattacharya (2021) | Purchase frequency is part of customer value realisation and service experience |
| 8 | Trust factor | Harrigan *et al.* (2021) | Trust drive the consumer service experience in fashion retail |
| 9 | Ease of Payment | Yan *et al.* (2021) Liao and Yang (2020) Bailey *et al.* (2020) | Fashion retailing has got better visibility and acceptance both online and offline due to accessible payment gateways and another mechanism available |
| 10 | Ease in delivery | Tao and Xu (2020) | Easy delivery has the potential to change the fashion industry in the long run and can create a positive customer experience |
| 11 | Customer care | Sirvi *et al.* (2021) | Customer care and relationship dimensions are crucial to fashion industry growth and customer satisfaction |
| 12 | Complaint Solving | Suleman and Zuniarti (2019) | Service experience is positive if there is a system for complaint redress in the apparel business |
| 13 | Return Policy | Tao and Xu (2020) | Easy return policy adds to the positive customer service experience |
| 14 | 24X7 shopping experience | Tao and Xu (2020) | All-time connection is suitable for the fashion sector, and retailers are getting advantage of this |
| 15 | Convenience | Lee and Leonas (2021) | Convenience has taken the place of the fashion sector |
| 16 | Product information and research | Ladhari *et al.* (2019) | Consistent in providing product information is key to fashion success |
| 17 | Privacy of customer information | Cheah *et al.* (2020) | Privacy concerns in a hybrid model of buying are affecting retailing |
| 18 | After-sales service | Riaz *et al.* (2022) | After-sale services and time-bound responses are the challenges for retailing in future |
| 19 | Customer review of the product | Harrigan *et al.* (2021) | Online Reviews are an integral part of the apparel shopping experience. |

*Source:* Authors' Own Compilation

### *2.1. Service Experience and Customer Satisfaction*

Service Experience is central to marketing activities, and it connects customers with the service provider (Groth *et al.*, 2019). It provides power to consumers as it brings multiple marketing dimensions related to concepts like service delivery, customer engagement, and customer satisfaction (Kabadayi *et al.*, 2019). Service Experience leads to brand building: it connects the emotional and rational aspects, converting customer satisfaction to word-of-mouth communication (Bravo *et al.*, 2019). If Service Experience gets imbalanced, customers feel a decline in service involvement, and this fluctuation affects the customer journey (Sahhar *et al.*, 2021). This connection proves that a positive Service Experience

has a positive coping behaviour. A negative service experience has an adverse customer response and satisfaction (Cai *et al.*, 2018). In the case of online shopping, service experience directly influences the shopping outcome and connects with services cape and retail scope (Kautish and Sharma, 2019). In the case of fashion items, online shopping experience and offline service experience are responsible for varied customer responses and directly affect the degree of loyalty differently (Kautish and Rai, 2019).

Customer Satisfaction has evolved across channels and within different products and demographics (Hult *et al.,* 2019). Customer satisfaction is a diluted concept in the case of the new experience of omni channel presence (Bell *et al.*, 2020). So a study related to the faster evolving Service Experience and Customer Satisfaction can benefit all the marketing stakeholders. This study questions the fundamentals that drive this relationship in a traditional apparel segment and within a young customer base.

### *2.2. Traditional Apparel Retail*

The traditional apparel market has got the imagination of new-age retailers. The recent trends are showing a positive sign for the traditional apparel segment. Tarai and Shailaja (2020) have found that Odisha traditional apparel has a tremendous growth opportunity. The way things are available online and offline will help the sector prove its distinction. Odisha has unique traditional dresses, and the papers are also identified in Indian dress materials (Tarai, 2020). Indian traditional apparel; are distinct, and it has local richness (Shende, 2017). Patra (2019) has identified the unique Odia handloom that has highlighted the inclusive Indian tradition and placed it in our minds. Acharya and Swain (2017) have determined eighteen distinct handloom clusters in Odisha as unique curves and patterns. So traditional apparel has its distinctness, and this study has identified this as a significant market to study.

## 3. Research Gap and the Conceptual Model

### *3.1. Research Gap*

Service experience is a significant element in creating a competitive advantage in retailing mainly traditional fashion merchandise. Furthermore, the online and offline amalgamation is another challenge to this competitive advantage. Customer satisfaction is definitely challenged in this connection (Tzeng *et al.*, 2021). The literature highlights this challenge of customer satisfaction and service experience in a new phase of marketing involving in the apparel section. There is a question that interrupts the research community connecting the fact that the continuously evolving state of online and offline dependency is least explored in recent times, especially the traditional apparel segment. Slack *et al.* (2020) have also found this gap relating to some humane values missing in online fashion shopping experiences. They were pointing out the concept of empathy and understanding between human transactions. How customers adjust to the new dimensions of service experience and confined to a new state of satisfaction must be assessed. In this case, traditional fashion or apparel customer service experience and satisfaction need a new discussion (Pandey and Chawla, 2018). So, this paper highlights the gap between service experience and customer satisfaction bringing all the marketing mix elements as the input to this new marketing phase.

### 3.2. The Conceptual Model

The conceptual model is tested to assess the state of positive or negative sentiment while using online and offline services. Moon and Armstrong (2020) identified that online service experience affects the confidence and acceptance of a retail service provider. Sharma *et al.* (2020) explored that some factors that affect online and offline service experience are closely connected with marketing mix elements. Tomar *et al.* (2020) also proposed that online and offline can create different after-sales exposures keeping the trust factor closely working in between. Tzeng *et al.* (2021) questioned whether the elements of customer service online and offline create a better customer service experience and further customer satisfaction**.** This research has been the motivational guiding force for the proposed conceptual model. This conceptual model has included specific inputs (in the form of marketing mix elements) that can affect or influence the service experience and further customer satisfaction.

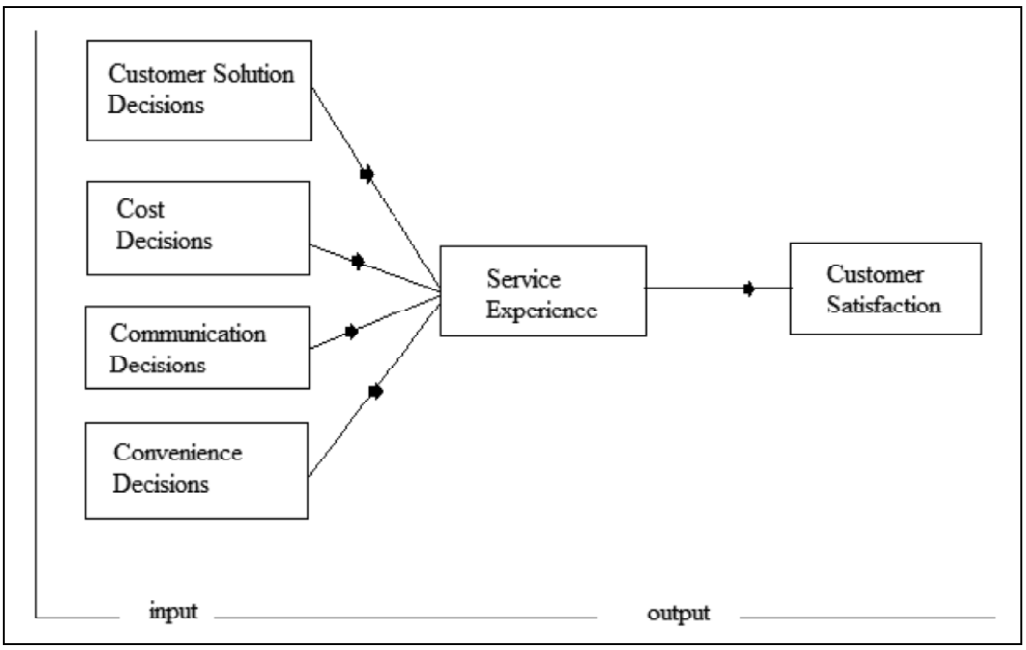


**Figure 1: Conceptual Model**

*Source:* Authors' Own Compilation

## 4. Objectives and Hypotheses of the Study

### 4.1. Objectives of the Study

The conceptual model highlights the relationships to be explored by this study. This also clarifies the objective of this study. There are two objectives of the study.

- The first objective of the study is to find out the marketing input factors that affect the overall customer service experience. These factors have been identified by the literature review and there needs to be further limit them for analysis.
- The second objective of the study addresses the relationship between all the inputs and service experience and customer satisfaction. The relationships highlighted in the conceptual model required the two-stage assessment process.

### *4.2. Hypotheses of the Study*

As it has been identified by the study, the variables are now clearer to proceed with research propositions. The major variables are marketing inputs in the form of communication decisions, convenience decisions, cost decisions, and Customer solution decisions. Yet, these variables are tentative and exhaustive. As we study marketing inputs, these are commonly accepted as the overall factors to study. The first four hypotheses are related to the first phase of the study and are provided below.

$H_{01}$: Communication Decisions positively affect service Experience.

$H_{02}$: Convenience Decisions are positively affected Service Experience.

$H_{03}$: Cost Decisions positively affect Service Experience.

$H_{04}$: Customer Solution Decisions positively affect Service Experience.

Based on the second research objectives of the study, the following hypothesis is formulated:

$H_{05}$: Service Experience positively affects Customer Satisfaction.

## 5. Research Methodology

The study has two objectives, and those have been supported and explored further by the relevant research methodology. The first one is related to the exploration and justification of marketing input variables, defined as the marketing mix elements. This is conducted within the scope of exploratory factor analysis. Exploratory factor analysis has been conducted with the help of IBM SPSS-19. Exploratory factor analysis reduces the total number of variables to some limiting factors. This also helps to limit the number of variables to use in the subsequent study and for the conceptual model validation. The major question addressed here is related to the primary customer satisfaction factors in online and offline shopping of traditional apparel. This exploratory research identifies the marketing mix elements.

The second objective of the research has been studied with the help of SEM (PLS-SEM). The hypotheses are studied with a data set that recognizes the relationships among different identified variables. SEM is selected here to evaluate the cause-and-effect relationships among multiple variables. Here the multivariate technique is used to find out the direction of the significant elements that affect service experience and customer satisfaction.

Customers who have experienced online and store outlet shopping experiences of purchasing traditional apparel have been selected for this study. These customers are more diverse and have the expertise of managing various customer touch points during shopping. They are well represented in the sampling frame.

### 5.1. Sampling Frame

Respondents in Bhubaneswar have been considered for this study with online and offline traditional apparel shopping experiences. The sampling unit considered in this study is a youth (18-25 years of age) in Bhubaneswar who has both online and offline shopping experiences. The sample size for this study is 151. The sampling technique is convenience sampling as the respondents are not specific location-wise, and mostly college-going students are available to respond.

**Table 3: Sampling Frame**

| *Respondents' category* | *Composition* | *Gender* | *Location (number of respondents)* |
|---|---|---|---|
| Students | Undergraduate (87) | 59% (Male) | 1. Aurelia, Maanyavar |
| | | 41% (Female) | Saheed Nagar (39) |
| | Post Graduates (31) | 45% (Male) | 2. Reliance Trends, Patia, (34) |
| | | 55% (Female) | 3. Big Bazaar, BIBA, |
| Job holders | Private Job (23) | 54% (Male) | Kharvel Nagar (37) |
| | Self-employed (10) | 46% (Female) | 4. Fab India, G Nagar (41) |
| | | 60% (Male) | |
| | | 40% (Female) | |
| Total | 151 | 55% (Male) | |
| | | 45% (Female) | |

*Source:* Authors' Own Calculation

### 5.2. Exploratory Study

An exploratory study was conducted with thirty students of a management institute to find out what they perceive as the significant components of customer satisfaction in online and offline traditional apparel shopping. An unstructured questionnaire was used to gather their responses, and this was further identified as per the literature available. These responses were studied, and variables were identified. The identified variables are provided below.

### 5.3. Exploratory Factor Analysis

EFA was used to establish the marketing mix elements identified by the literature study. The analysis was performed with IBM SPSS 25. The KMO measure of sample adequacy was 0.892, and the Bartlett test statistic is significant. This shows that the sample is suitable for factor analysis. The rotated component matrix is provided below.

The four extracted factors are *Customer Solution Decisions, Convenience Decisions, Cost Decisions* and *Communication Decisions*. The reliability of these factors was within the acceptable range of Cronbach's alpha coefficient (> 0.70) (Raykov, 1998).

**Table 4: Rotated Component Matrix**

| Items (Marketing Mix Elements) | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Item1: Latest Fashion | .925 | | | |
| Item16: Product info and research | .892 | | | |
| Item17: Privacy of Customer Info | .891 | | | |
| Item19: Customer Review | .883 | | | |
| Item2: One-stop Shopping | | .895 | | |
| Item7: Purchase Frequency | | .885 | | |
| Item10: Ease in Delivery | | .876 | | |
| Item11: Customer Care | | .871 | | |
| Item5: Low Price | | | .907 | |
| Item6: Discount | | | .904 | |
| Item9: Ease of Payment | | | .890 | |
| Item13: Return Policy | | | .867 | |
| Item3: Brand Options in a single category | | | | .906 |
| Item4: Displaying Variety | | | | .884 |
| Item8: Communicating Trust | | | | .880 |
| Item18: After Sales Services | | | | .840 |

*Source:* Authors' Own Compilation

### *5.4. Questionnaire Design*

As 12 variables could define four marketing mix elements, these variables were considered for the next phase of analysis. The items to measure service experience and customer satisfaction were taken from the existing scale developed by Tzeng *et al.,* (2021). There were five items each of service experience and customer satisfaction were considered for the study. In this process, the final questionnaire had 22 items. The content validity of the questionnaire was done by two faculty collogues of the marketing and business communication area. As the EFA has already been conducted, it supports the reliability aspect of items presented in the questionnaire.

## 6. Data Analysis

There were 151 respondents whose response was taken for analysis. The target population was customers shopping in Aurelia, Reliance Trends in different places of Bhubaneswar. The primary data source was collected in the form of closed and structured questionnaires. The questionnaire carried 22 questions with options to be selected based on the customer's opinion as convenience sampling is a non-probability sampling that draws a sample from the population close to hand. Further, the second analysis was conducted with the service experience and customer satisfaction outcomes. Customers were asked about their online and offline service experience with the customer satisfaction level. Here the analysis is provided. Smart PSL is used to analyse the data set.

**Table 5: Convergent Validity and Discriminant Validity**

| *Sl* | *Constructs* | *CR* | *AVE* | *MSV* | *ASV* | *1* | *2* | *3* | *4* | *5* | *6* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Customer solution Decisions | .921 | .671 | .382 | .329 | .728 | | | | | |
| 2 | Cost Decisions | .952 | .732 | .346 | .356 | .675 | .792 | | | | |
| 3 | Convenience Decisions | .937 | .651 | .322 | .361 | .546 | .549 | .839 | | | |
| 4 | Communication Decisions | .931 | .668 | .318 | .342 | .612 | .548 | .611 | .829 | | |
| 5 | Service Experience | .910 | .602 | .374 | .369 | .452 | .573 | .563 | .542 | .892 | |
| 6 | Customer Satisfaction | .913 | .603 | .399 | .316 | .481 | .562 | .582 | .592 | .413 | .789 |

*Source:* Authors' Own Compilation

This is a reflective model as the constructs are expresses within the items specified. All the model fit indices are within the acceptable range. The NFI value is 0.921 for the saturated model and 0.911 for the estimated model. The model estimates are CMIN/DF=2.21, CFI=.915, IFI=921, TLI=928, NFI=.907 and RMSEA=0.46. And these are under the specified rules (Xia and Yang, 2019).

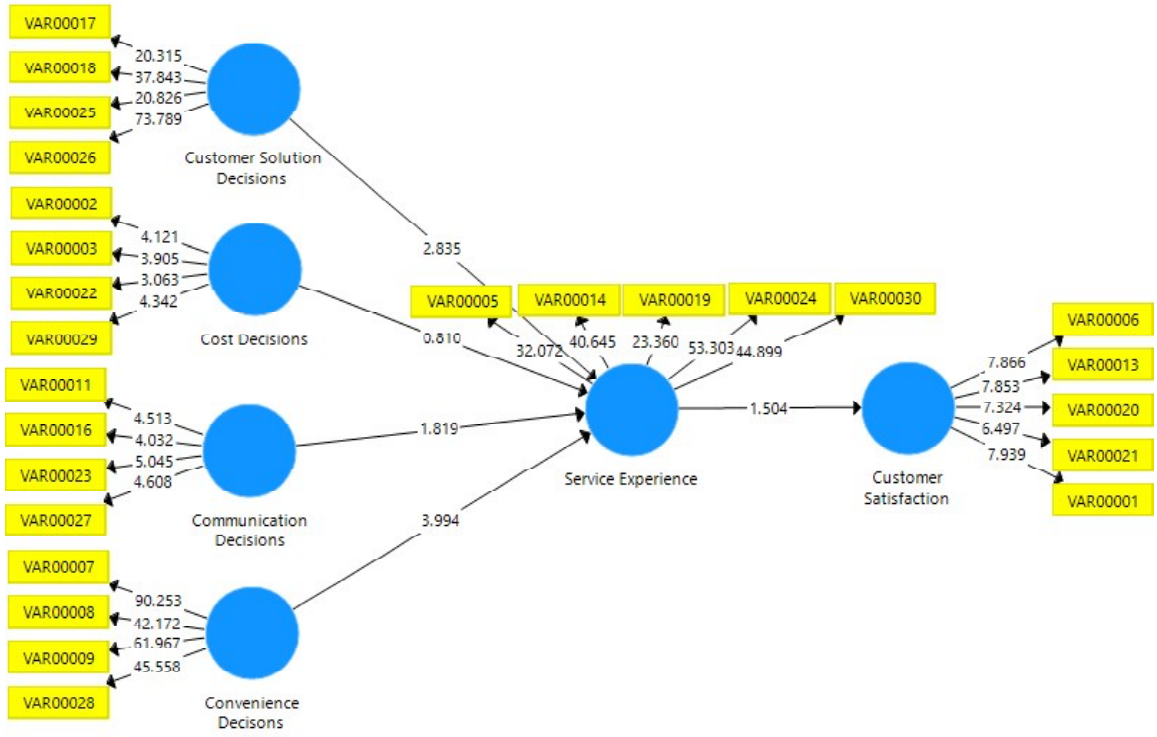


**Figure 2: The Measurement Model**

*Source:* Authors' Own Compilation

The relationship between the four identified factors representing the offline and online service dimensions was checked with service experience and customer satisfaction. Here the indirect effect of customer satisfaction was studied.

In this study, Customer service experience has been used as a mediation variable. Based on the data analysis, presented in Table 6, it is observed that the Communication Decisions and Cost Decisions are not affecting Service Experience. The *P-value* in both cases is significant and thus rejects the null hypotheses. Similarly, the *P-value for* Convenience Decisions and Customer Solution Decisions are not projecting a positive linkage with Service Experiences in both online and offline setups. At the same time, the relationship between Service Experience and Customer Satisfaction is not positive and does not affect positively. There are also no validity concerns in the data set.

The output of the analysis is presented in Table 6.

**Table 6: The Model (Establishment of Relationships)**

| *Relationship* | *SD* | *T Stat* | *P-Value* | *Interpretation* |
|---|---|---|---|---|
| Communication Decision→Service Experience | 0.090 | 1.870 | 0.062 | Not Supported |
| Convenience Decision→Service Experience | 0.064 | 4.015 | 0.000 | Supported |
| Cost Decision→Service Experience | 0.087 | 0.843 | 0.399 | Not Supported |
| Customer Solution Decision→Service Experience | 0.053 | 2.766 | 0.006 | Supported |
| Service Experience→Customer Satisfaction | 0.064 | 1.490 | 0.136 | Not Supported |

*Source:* Authors' Own Compilation

## 7. Results and Discussion

The analysis has a distinct revelation. As the marketing mix elements were studied by connecting with the service experience, it was found that two marketing mix elements- cost decisions and communication decisions are not following the relationship with service experience. This result challenges the work of Silva *et al.* (2020) and Ranto *et al.* (2021), who concluded in low price and discount issues while connecting the service experience. These results corroborate the work of Zhuang *et al.* (2018), who have confirmed the confusion created by pricing related imbalance in online and offline. Furthermore, this study also directly questions the online and offline branding and promotion discrepancies, as highlighted by Ferreira *et al.* (2019); Harrigan *et al.* (2021). The issues like price comparison and promotional inconsistencies majorly affect the service experience.

The study finds that in this phase of a hybrid shopping exposure to buy traditional apparel, price-oriented promotional decisions create unnecessary confusion in the mid of the customer. Customers find store experiences and online experiences are diverse and opposite while comparing prices and finding adequate information about the products. On the other side, convenience and customer solution decisions shape customer service experiences. This supports the work of Silva *et al.* (2019) & Lee and Leonas (2021). The study projects the relationship between service experience and customer satisfaction as unfavourable. This indicates the declining services involvements due to confusion in pricing and

promotion decisions. Furthermore, this supports the research work of Sahhar *et al.* (2021) that make the judgment on positive elements in a customer journey. This study also finds similar results as Cai *et al.* (2018) that project the negative feelings in hybrid buying scenarios. As supported by Hult *et al.* (2019), Customer Satisfaction has been challenged in the case of traditional apparel, and the youth are different in their buying involvement Bhattacharya and Anand (2021). The results respect Bell *et al.* (2020) recent work that projects the diluted customer experiences and satisfaction in the evolving online and offline situation.

## 8. Conclusion and Managerial Implications

The study has found the customers' satisfaction components, and it has broadly understood the same from the customers' perspective. Online shopping and retailing have been the buzzword today. Any study that highlights the significant elements of both types of shopping experience must be taken positively. Companies are more interested in studying the two different shopping experiences, which is still an evolving area to work. Companies are still trying to define two other business models. They are still not sure how customers in two different shopping experiences accept services and products and react and respond. The study tried to establish the customers' view on overall satisfaction.

This study will help both types of retailers to re-access the customer satisfaction parameters. Services in retail must take both online and offline shopping parameters seriously (Xu *et al.*, 2021). As most young customers prefer an online shopping experience, retailers should improve those parameters where the traditional retail shopping experience lacks good points. The conventional shopping experience should not feel dejected. The study has pointed out how the retail experience can closely work with online retailing to improve the possible parameters like communication and cost decisions (Liu et al., 2020). The study recommends that the managers of both online and traditional shopping experiences have a comparative look at the parameters for strategic developments and decisions as per business growth are concerned. The growth of online and offline retail services depends on identifying similarities and dissimilarities of strategic marketing decisions. The promotion and price decisions need to be converged in both formats.

## 9. Future Scope of Research and Limitations

The research is conducted in Odisha, and the traditional apparel market covers the entire country. This is a limitation for this paper, yet the research is expected to move from one state to many states. The diverse demographics will add value to future research. The apparel market is posing a serious threat to a price war and false claims. This study can be extended to the possible reasons for cost decisions and communication decision-related discrepancies in different geographic areas. This study can be extended to define a new definition of service experience bringing the favourable marketing mix elements to the equation.

## References

Acharya, S. & Swain, L. (2017). Anthropology of Arts: An Analysis of Samabalpuri Textile in Odisha. *Indian Journal of Research in Anthropology*, *3*(1).

Amatulli, C., De Angelis, M., Sestino, A., & Guido, G. (2021). Omnichannel Shopping Experiences for Fast Fashion and Luxury Brands: An Exploratory Study. In *Developing Successful Global Strategies for Marketing Luxury Brands* (22-43).IGI Global.

Ang, C., & Rusli, H. (2018). The Impact of Marketing Mix 4Ps and Consumer Behavior toward Purchase Decision of Adidas Products. *iBuss Management*, *6*(2).

Arora, S. & Sahney, S. (2017). Webrooming behaviour: a conceptual framework, *International Journal of Retail & Distribution Management*, *45* (7/8), 762-781.

Bailey, A. A., Pentina, I., Mishra, A. S., & Ben Mimoun, M. S. (2020). Exploring factors influencing US millennial consumers' use of tap-and-go payment technology. *The International Review of Retail, Distribution and Consumer Research*, *30*(2), 143-163.

Bauer, H. H., Falk, T., & Hammerschmidt, M. (2006). eTransQual: A transaction process-based approach for capturing service quality in online shopping. *Journal of Business Research*, *59*(7), 866-875.

Bell, D. R., Gallino, S., & Moreno, A. (2020). Customer supercharging in experience-centric channels. *Management Science*, *66*(9), 4096-4107.

Bhattacharya, S., & Anand, V. (2021). What makes the Indian youths to engage with online retail brands: An empirical study. *Global Business Review*, *22*(6), 1507-1529.

Borden, N. H. (1964). The concept of the marketing mix. *Journal of advertising research*, *4*(2), 2-7.

Bravo, R., Martinez, E., & Pina, J. M. (2019). Effects of service experience on customer responses to a hotel chain. *International Journal of Contemporary Hospitality Management.31* (1), 389-405

Cai, R. R., Lu, L., & Gursoy, D. (2018). Effect of disruptive customer behaviors on others' overall service experience: An appraisal theory perspective. *Tourism Management*, *69*, 330-344.

Cao, Y., & Zhao, H. (2004). Evaluations of e-tailers' delivery fulfillment: implications of firm characteristics and buyer heterogeneity. *Journal of Service Research*, *6*(4), 347-360.

Chauhan, S., Banerjee, R., Mittal, M., & Singh, H. (2021). Performance Analysis of Online Shopping For Customer Satisfaction Using PLS-SEM.In *2021 10th IEEE International Conference on Communication Systems and Network Technologies (CSNT)* 876-880.IEEE.

Cheah, J. H., Lim, X. J., Ting, H., Liu, Y., & Quach, S. (2020). Are privacy concerns still relevant? Revisiting consumer behaviour in omnichannel retailing. *Journal of Retailing and Consumer Services*, *65*(1) 102242.

Dawn, D. S. K., & Kar, U. (2011). E-Tailing in India: Its Issues, Opportunities and Effective Strategies For Growth And Development. *ZENITH International Journal of Multidisciplinary Research.*

Delone, H.W. & McLean, R.E . (2004): "Measuring e-Commerce Success: Applying Information Systems Success Model", *International Journal of Electronic commerce*, *9* (1) 318.

Dominici, G. (2009). From marketing mix to e-marketing mix: a literature overview and classification. *International journal of business and management*, *4*(9), 17-24.

Doolin, B., Dillon, S., Thompson, F., & Corner, J. L. (2005). Perceived risk, the Internet shopping experience and online purchasing behavior: A New Zealand perspective. *Journal of Global Information Management (JGIM)*, *13*(2), 66-88.

Emanuel, L., Neil, G. J., Bevan, C., Fraser, D. S., Stevenage, S. V., Whitty, M. T., & Jamison-Powell, S. (2014). Who am I? Representing the self-offline and in different online contexts. *Computers in Human Behavior*, *41*, 146-152.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business research*, *54*(2), 177-184.

Ferreira, P., Rodrigues, P., & Rodrigues, P. (2019). Brand love as mediator of the brand experience-satisfaction-loyalty relationship in a retail fashion brand. *Management & Marketing. Challenges for the Knowledge Society*, *14*(3), 278-291.

Gandhi, A., & Bhattacharya, S. (2021). Factors influencing purchase intention of store brands in organised fashion retail. *International Journal of Electronic Marketing and Retailing*, *12*(4), 414-430.

Groth, M., Wu, Y., Nguyen, H., & Johnson, A. (2019). The moment of truth: A review, synthesis, and research agenda for the customer service experience. *Annual Review of Organizational Psychology and Organizational Behavior*, *6*, 89-113.

Gupta, V. (2013). An Empirical Study to Customer Satisfaction level for E-tailing using ASCI's Model. *International Journal*, *1*(6)

Hamidi, H., & Moradi, S. (2017). Analysis of consideration of security parameters by vendors on trust and customer satisfaction in e-commerce. *Journal of Global Information Management (JGIM)*, *25*(4), 32-45.

Harrigan, M., Feddema, K., Wang, S., Harrigan, P., & Diot, E. (2021). How trust leads to online purchase intention founded in perceived usefulness and peer communication. *Journal of Consumer Behaviour*, *20*(5), 1297-1312.

Herhausen, D., Binder, J., Schoegel, M., & Herrmann, A. (2015). Integrating bricks with clicks: retailer-level and channel-level outcomes of online–offline channel integration. *Journal of retailing*, *91*(2), 309-325.

Huang, C.-C., Chang, Y.-W., Hsu, P.Y. & Prassida, G.F. (2020). A cross-country investigation of customer transactions from online to offline channels, *Industrial Management & Data Systems*, 120 (12), 2397-2422

Hult, G. T. M., Sharma, P. N., Morgeson III, F. V., & Zhang, Y. (2019). Antecedents and consequences of customer satisfaction: do they differ across online and offline purchases? *Journal of Retailing*, *95*(1), 10-23.

Kabadayi, S., Ali, F., Choi, H., Joosten, H. & Lu, C. (2019). Smart service experience in hospitality and tourism services: A conceptualisation and future research agenda, *Journal of Service Management*, *30*(3), 326-348.

Kautish, P. &Sharma, R. (2019). Managing online product assortment and order fulfilment for superior e-tailing service experience: An empirical investigation, *Asia Pacific Journal of Marketing and Logistics*, *31*(4), 1161-1192.

Kautish, P., & Rai, S. K. (2019). Fashion portals and Indian consumers: an exploratory study on online apparel retail marketing. *International Journal of Electronic Marketing and Retailing*, *10*(3), 309-331.

Khan, A., & Syed, A. A. (2018). Determinants of online consumer behaviour towards e-tailing in India. *International Journal of Enterprise Network Management*, *9*(3-4), 455-480.

Kim, J., & Lee, J. (2002). Critical design factors for successful e-commerce systems. Behaviour & Information Technology, 21(3), 185–199.

Kumar, V., Khan, M. N., & Kesharwani, S. (2019). Online customer Satisfaction and loyalty in apparel purchase: a review of extant literature. *Global Journal of Enterprise Information System*, *11*(2), 48-71.

Ladhari, R., Gonthier, J., & Lajante, M. (2019). Generation Y and online fashion shopping: Orientations and profiles. *Journal of retailing and Consumer Services*, *48*, 113-121.

Lavie, T. & Tractinsky, N. (2004). Assessing Dimensions of Perceived Visual Aesthetics of Web Sites. *International Journal of Human-Computer Studies*, *60*, 269-29823.

Lee, H., & Leonas, K. K. (2021). Millennials' intention to use self-checkout technology in different fashion retail formats: perceived benefits and risks. *Clothing and Textiles Research Journal*, *39*(4), 264-280.

Liao, S. H., & Yang, L. L. (2020). Mobile payment and online to offline retail business models. *Journal of Retailing and Consumer Services*, *57*, 102-230.

Lin, H. C., Bruning, P. F., & Swarna, H. (2018). Using online opinion leaders to promote the hedonic and utilitarian value of products and services. *Business horizons*, *61*(3), 431-442.

Liu, L., Feng, L., Xu, B. & Deng, W. (2020). Operation strategies for an omni-channel supply chain: who is better off taking on the online channel and offline service? *Electronic Commerce Research and Applications*, *39*, 100918.

Moon, Y. & Armstrong, D.J. (2020). Service quality factors affecting customer attitudes in online-to-offline commerce. *Information Systems and e-Business Management*, *18*(1), 1-34.

Moran, N. (2020). Illusion of safety: How consumers underestimate manipulation and deception in online (vs. offline) shopping contexts. *Journal of Consumer Affairs*, *54*(3), 890-911.

Oh, C. H. (2022). Examining effectiveness of online and offline channel integration, Journal *of Business & Industrial Marketing*, *37* (1), 255-240.

Pandey, S. & Chawla, D. (2018). Online customer experience (OCE) in clothing e-retail: Exploring OCE dimensions and their impact on satisfaction and loyalty – Does gender matter?, *International Journal of Retail & Distribution Management*, *46*(3) 323-346.

Patra, M. S. (2019). Make in Odisha: A study on Handloom Products of Odisha, *The Orissa Journal of Commerce*, *2*(1), 100-107.

Rabinovich, E. (2004). Internet retailing intermediation: a multilevel analysis of inventory liquidity and fulfillment guarantees. *Journal of Business Logistics*, *25*(2), 139-169.

Ranto, D. W. P., Hariningsih, E., Prasetyanto, W. E., & Oktafiani, D. M. (2021). The Price Discounts and Fashion Involvement to Increase Online Impulsive Buying: Study among Teenagers at Yogyakarta. *International Journal of Business, Management and Economics*, *2*(4), 239-250.

Rao, B. (1999). Developing an effective e-tailing strategy. *Electronic markets*, *9*(1-2), 89-92.

Rao, B. (1999). The Internet and the revolution in distribution: a cross-industry examination. *Technology in Society*, *21*(3), 287-306.

Ratchford, B. T., Talukdar, D., & Lee, M. S. (2001). A model of consumer choice of the Internet as an information source. *International Journal of Electronic Commerce*, *5*(3), 7-21.

Raykov, T. (1998).Coefficient alpha and composite reliability with interrelated nonhomogeneous items.*Applied psychological measurement*, *22*(4), 375-385.

Riaz, H., Baig, U., Meidute-Kavaliauskiene, I., & Ahmed, H. (2022). Factors Effecting Omnichannel Customer Experience: Evidence from Fashion Retail. *Information*, *13*(1), 12.

Sahhar, Y., Loohuis, R. & Henseler, J. (2021). Towards a circumplex typology of customer service experience management practices: a dyadic perspective, *Journal of Service Theory and Practice*, *31*(3) 366-395.

Sarkar, B., Dey, B.K., Sarkar, M. & AlArjani, A. (2021).A Sustainable Online-to-Offline (O2O) Retailing Strategy for a Supply Chain Management under Controllable Lead Time and Variable Demand. *Sustainability*, *13*(4), 1756.

Scarpi, D., Pizzi, G. & Visentin, M. (2014). Shopping for fun or shopping to buy: is it different online and offline? *Journal of Retailing and Consumer Services*, *21*(3), 258-267.

Sethi, R. S., Kaur, J., & Wadera, D. (2018). Purchase intention survey of millennials towards online fashion stores. *Academy of Marketing Studies Journal*, *22*(1), 1-16.

Shankar, V., Smith, A. K., & Rangaswamy, A. (2003).Customer satisfaction and loyalty in online and offline environments. *International journal of research in marketing*, *20*(2), 153-175.

Sharma, A., Sharma, A. & Kaur, H. (2020). Comparative Analysis Between Online and Offline Shopping Approach and Behavior of Consumers. *Journal of Computational and Theoretical Nanoscience*, *17*(11), 4965-4970.

Shende, B.R., (2017). Fashion trends and its impact on society: a case study on apparel trends of Indian society. *Int. J. Res. Biosci. Agric. Technol. IJBAT*, *3*,.58-63.

Silva, E.S., Hassani, H. & Madsen, D.Ø. (2020). Big Data in fashion: transforming the retail sector, *Journal of Business Strategy*, *41*(40), 21-27

Silva, S.C., Duarte, P. & Sundetova, A. (2020). Multichannel versus omnichannel: a price-segmented comparison from the fashion industry, *International Journal of Retail & Distribution Management*, *48*(4), 417-430.

Sirvi, R., Ramu, R. G., Revelli, V., Kumar, S. G., & Pattnaik, S. C. (2021). The role of E-commerce on customer engagement in 2021. *International Journal of Scientific Development and Research*, *6*(2), 319-324.

Slack, N., Singh, G. & Sharma, S. (2020). The effect of supermarket service quality dimensions and customer satisfaction on customer loyalty and disloyalty dimensions", *International Journal of Quality and Service Sciences*, *12*(3), 297-318.

Solimun, S., & Fernandes, A. A. R. (2018).The mediation effect of customer satisfaction in the relationship between service quality, service orientation, and marketing mix strategy to customer loyalty. *Journal of Management Development.37* (1) 76-87

Suleman, D., & Zuniarti, I. (2019). Consumer Decisions toward Fashion Product Shopping in Indonesia: The effects of Attitude, Perception of Ease of Use, Usefulness, and Trust. *Management Dynamics in the Knowledge Economy*, *7*(2), 133-146.

Tao, Q., & Xu, Y. (2020). Consumer adoption of fashion subscription retailing: antecedents and moderating factors. *International Journal of Fashion Design, Technology and Education*, *13*(1), 78-88.

Tarai, S. (2020). Expressing Life in Textiles: A Study of Culture and Fashion in Odisha. *BhartiyaManyaprad*, p.83.

Tarai, S.K. & Shailaja, K., (2020). Integration of E-Commerce in Handloom Sector: Consumer Perspective in Odisha, India. *Journal of Textile & Apparel Technology & Management (JTATM)*, *11*(4).

Teng, Y.M., Wu, K.S. & Chou, C.Y. (2020). Price or convenience: What is more important for online and offline bookings? A study of a five-star resort hotel in Taiwan. *Sustainability*, *12*(10), 3972.

Tomar, V.S., Tomar, R.S. & Khattri, V. (2020). Moderating Role of Brand Trust on Offline vs. Online Shoppers and its Impact on Cognitive Dissonance. *Indian Journal of Marketing*, *50*(8-9), 66-79.

Tractinsky, N., & Rao, V. S. (2001). Social dimensions of internet shopping: theory-based arguments for web-store design. *Human Systems Management*, *20*(2), 105-22.

Tzeng, S.Y., Ertz, M., Jo, M.S. & Sarigöllü, E. (2021).Factors affecting customer satisfaction on the online shopping holiday. *Marketing Intelligence & Planning*.

Vaskelainen, T. & Piscicelli, L., (2018).Online and offline communities in the sharing economy. *Sustainability*, *10*(8), 2927.

Xia, Y., & Yang, Y. (2019). RMSEA, CFI, and TLI in structural equation modeling with ordered categorical data: The story they tell depends on the estimation methods. *Behavior research methods*, *51*(1), 409-428.

Xu, C., Park, J. & Lee, J.C. (2021).The effect of shopping channels (online vs. offline) on consumer decision process and firm's marketing strategy. *Internet Research*.

Yan, L. Y., Tan, G. W. H., Loh, X. M., Hew, J. J., & Ooi, K. B. (2021). QR code and mobile payment: The disruptive forces in retail. *Journal of Retailing and Consumer Services*, *58*, 102300.

Yang, L., Zheng, Y. Y., Wu, C. H., Dong, S. Z., Shao, X. F., & Liu, W. (2019). Deciding online and offline sales strategies when service industry customers express fairness concerns. *Enterprise Information Systems*, 1-18.

Yusra, Y., Eko, C.R., Agus, A., Azmi, M.A.A., Ugiana, G.P., Ching, C.R. & Lee, Y. (2020). An investigation of online food aggregator (OFA) service: Do online and offline service quality distinct? *Serbian Journal of Management*, *15*(2), 277-294.

Zeithaml, V.A. (2002). Service excellent in electronic channels, *Managing Service Quality*, 12 (3), 135-13836.

Zhang, Ping & Gisela M. von Dran.(2000). Satisfiers and Dis-satisfiers: A Two-Factor Model for Web-site Design and Evaluation, *Journal of the American Society for Information Science,* 5(14), 1253–1268.

Zhang, Q., Cao, W., Liu, Y. & Zhang, Z. (2021). Integration of online and offline channels in retail: feasibility of BOPS?, *Kybernetes*,*50*(5), 1588-1620.

Zhuang, H., Leszczyc, P.T.P. & Lin, Y. (2018). Why is price dispersion higher online than offline? The impact of retailer type and shopping risk on price dispersion. *Journal of Retailing*, *94*(2), 136-153.

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.07*

# Constituents of Internal Marketing in Higher Educational Institutions in India

**Sangeeta Arora[1*] and Reetika Sharma[2]**
*[1]Professor, University School of Financial Studies, Guru Nanak Dev University, Amritsar, Punjab. E-mail: sukhsangeet@yahoo.com*
*[2]Assistant Professor, PG Department of Commerce and Business Administration, BBK DAV College for Women, Amritsar, Punjab. E-mail: ritikasharma70@yahoo.com*
**Corresponding Author*

**To cite this paper**

Arora, S., & Sharma, R. (2021). Constituents of Internal Marketing in Higher Educational Institutions in India. *Orissa Journal of Commerce.* 42(4), 92-105.

**Keywords**

Constituents, Faculty, Internal marketing, Higher education, Factor analysis

**JEL Classification**

C38, C81, I20, I23, M31

**Abstract:** Internal marketing (IM) has revolutionized in the manner by which organizations across the globe look forward to achieve their objectives purely through working head by focusing on information, education, development and motivation of their employees. Internal marketing, thus, having realized such indispensable and significant relevance which plays a pivotal role in the higher educational institutions (HEI's). Therefore, an attempt has been made to develop a scale in order to identify the various key constituents of IM in HEI's. The data for the study was compiled from primary sources. Factor Analysis was used for the purpose of analysis. The results of factor analysis portrayed that internal communication, internal market research, training and development, psychological factors, HR and rewards, sociological factors, empowerment and vision are the important factors being the constituents of IM practices in HEI's in India. The study recommended that the authorities in HEI's should pay additional emphasis on the aforesaid factors in order to boost faculties continued commitment levels and to create comprehensible and practical job as well as organizational objectives.

## 1. Introduction

Over the last couple of decades, the concept of IM has evolved immensely. It is a means to optimize the satisfaction of employees by way of organizational commitment that aims to produce value for the employees (Altarifi, 2014). Smart marketers have recognized that marketing activities inside the company are more important than the marketing activities done outside the company. Therefore, the company cannot promise outstanding services to its customers before the staff is prepared to offer it (Kotler and Keller, 2006). Consequently, IM has emerged as a useful tool in giving rise to and maintaining a spirit in the organization in which customer-serving behaviour among employees is focused upon (Arnett *et al.*, 2002). IM, now a day, aims to persuade the employees in order to fulfill the organizational objectives (Foreman and Money, 1995). IM also facilitates the employees to have a better knowledge

of how to align their personal aims with the organizational goals in order to attain organizational success (Mosley, 2007).

As far as the HEI's are concerned, the contentment and withholding of good employees is an indispensable component of the organization and it is directly associated with the organizational success. The quality of employees in HEI's is important due to the high costs associated with them. Due to high turnover of employees, the institution suffers and the employee's job satisfaction is affected. IM practices in this context are beneficial as they improve an employee's skill and performance. Therefore, the introduction of IM practices results into employee job satisfaction which in turn upgrades his performance and makes him more committed towards the organization.

## 2. Review of Literature

Sargeant and Asif (1998) examined the importance of IM in the financial sector. The aim was to investigate the degree to which high street banks made use of IM practices to enhance the overall output of their employees. The data from the staff of two major clearing banks of UK comprising of the middle, senior and junior members of the staff was gathered. Using Analysis of Qualitative Data software package, the study revealed that the adoption of IM practices in a planned manner in the organization could help to overcome the resistance to change among the employees.

Carvalho and Silva (2003) focused on identifying as to who are the possible customers of higher education institutions and to discuss the conflicting views of different stakeholders namely students, employers, society/government and faculty and their implications about the organization of education and research processes in higher education institutions. A quality function deployment tool was used to identify the relevant customers. It was found that internal customers (faculty) and external customers (students and the employers) were the main possible customers of higher education institutions. It has been further found that on the basis of two processes i.e. teaching- learning process and research process the main customers identified. For teaching-learning process the faculty (internal) & the students and employers (external) customers while for research faculty (internal) and society/government were (external) customers. Five conflicting views were found among different classes (group) of customers. These were, the student is to be considered as customer in the teaching activities in classrooms, the student's role in his own learning, the existent expectation about the student as product by future employers, the indicators of scientific productivity in the research and the double role of faculty members in teaching and research. The author's suggested that different ways have been recommended to reduce those conflicts through the search of a bigger efficiency in the objectives of higher education institutions.

Hemsley-Brown and Oplatka (2010) carried out a study to find out the various dimensions of IM orientation. The purpose was to discover the differences in the IM practices in two different national HEI's. For the purpose of the study, the data was gathered from 68 academicians. Out of these 68 academicians, 36 belonged to the HEI's of England and 32 to the HEI's of Israel. 38 of them were men and 30 were women. A 32 items scale was used for the purpose of the study. The study brought out three factors namely market orientation, competitor orientation and inter-functional coordination affecting IM in HEI's. The results of the study concluded that since the HEI's adopted a customer-

oriented approach and were more inclined towards satisfying the students, the academicians could achieve their goals only through their own task and performances.

Carlos and Rodrigues (2012) analyzed the relationship between internal marketing orientation and job satisfaction, organizational commitment, organizational citizenship behaviour and organizational performance. For the study, a sample of 37281 professors was selected from public and private higher education institutions. Using partial least squares regression, the results indicated a positive/direct relationship between internal marketing and job satisfaction; job satisfaction and organizational commitment; organizational commitment and organizational citizenship behavior & organizational citizenship behaviour and performance. As far as other variables are concerned, there exists an indirect relationship between internal marketing and organizational commitment; internal marketing and organizational citizenship behavior; organizational performance and job satisfaction; organizational citizenship behaviour and organizational performance; organizational commitment and organizational performance. The authors suggested that higher education institutions should invest in good communication, trading value between the management and the workers, continuous training, needs of employees. Organization must be oriented towards the internal marketing which would lead to an increase in the quality of services delivered to external customers.

Ghorbani and Sedeh (2014) conducted a research in order to determine the impact of internal marketing on organizational effectiveness. For this purpose, a sample of 120 respondents including 77.5% male & 22.5% female managers and employees belonging to the age group of 21 to 30 years from the four districts of Azad university of Esfahan were selected. A questionnaire consisting of 35 items and 3 constructs namely internal marketing, employees' capability and organizational effectiveness was used to collect the data. The data was analyzed using Structural Equation Modelling using LISREL Software. The results of the study brought out that internal marketing had an indirect impact on organizational effectiveness and a direct influence on employees' capabilities which consequently enhanced the organizational effectiveness. Thus, it was concluded that higher levels of organizational effectiveness can be achieved by increasing the potential of employees which is possible through the implementation of internal marketing concept. Gordillo-Benavente *et al.* (2015) conducted a research to develop a model of IM that would help achieve the commitment of the workers. The authors' objective was to find out the factors responsible for achieving loyalty and commitment among the employees. For the study, a sample of 196 internal customers comprising of accounts subject teachers, full time administrative staff and administrative support from the areas of economics and engineering belonging to the Polytechnic University of Tulancingo were selected using survey method. Various multivariate techniques along with structural equation model (SEM) were used to analyze the results of the study. The results of the study revealed that IM directly as well as positively affect the job satisfaction of internal customer, which consequently positively affects the commitment of the workers.

Chi *et al.* (2016) attempted to examine the influence of organizational commitment, job burnout and internal marketing on job satisfaction. The data was collected from 152 special education teachers in junior high and elementary schools in Yunlin County, Taiwan. Regression analysis was used to analyze the results. The results of the study revealed that organizational commitment significantly and positively influenced job satisfaction and internal marketing while internal marketing significantly and

positively influenced job satisfaction. On the other hand, job burnout significantly and negatively influenced job satisfaction and internal marketing mediated the relationship between organizational commitment and job satisfaction. Effiong (2016) conducted a research to find out the impact of IM variables on employee commitment and turnover intentions in Wilmington University (Delaware, the United States). For this study, a sample of 150 academicians and non-academicians was selected. The results of independent samples t-test, one way ANOVA and Multiple regression brought out significant differences were found in the employee commitment and turnover intentions across groups. The results of multiple regression portrayed that internal communication on the job could significantly influence affective commitment levels (i.e. affection for your job), incentives/rewards significantly influence continuous commitment (i.e. fear of losing the job) whereas normative commitment significantly affected the identification of employees as internal customers (i.e. sense of obligation to stay). The authors concluded that additional emphasis on the aforesaid factors is needed.

Lydia and Kosgei (2016) conducted a research to find out the impact of IM strategy on employee performance. For this purpose, a sample of 384 employees from the main campuses of universities in Nairobi was selected using stratified random sampling method. Sample consisted of both administrative and academic staff from public universities in Kenya. Various techniques including survey research were used to assess thoughts, opinions and feelings of the employees. The results of linear multiple regression and correlation revealed that as far as effect of IM strategy and employee commitment on employee performance is concerned IM strategy positively determines employee performance and commitment negatively affects the employee performance.

Nandi and Prasad (2017) conducted a study on 79 employees (faculty members consisting of employees namely teachers, professors and lecturers of all grades of educational institute) across India using an online questionnaire. A questionnaire consisting of 22 statements was constructed in order to find out the dimensions of IM. The application of Exploratory Factor Analysis brought out four factors related to management, communication training and development and remuneration affecting IM in an organization. Yildiz and Kara (2017) designed a questionnaire to measure the IM construct in the HEI's. For the purpose of the study, a sample of 240 full time academic staff (employees) working in the higher educational institutions of Turkey was selected. Exploratory and Confirmatory Factor Analysis portrayed gender differences in the preference towards certain issues. Women were of the view that greater attention needs to be paid to factors namely physical surroundings, basic needs, workload, motivation, training and growth and transparency of communication as compared to their male counterparts.

Muneeb *et al.* (2020) attempted to analyze the impact of IM orientations (IMOs) on the competitiveness of HEI's (HEIs) in the United Arab Emirates (UAE). The data was collected from 349 faculty members in 102 HIEs in the UAE. An online survey questionnaire was placed on Qualtrics online data collection platform. Smart PLS structural equation modeling (PLS-SEM) was used to analyze the collected data. The findings of the study portrayed that the dimensions of IM orientations namely information generation, information dissemination and information responsiveness are inexplicably linked to HEI's competitiveness and faculty performance. Information responsiveness proved to be a more significant predictor of competitiveness of HEI's as compared to information generation and information dissemination.

## 3. Objective of the Study

The main objective of the study is:

- To determine the various factors affecting IM practices in higher education institutes of India.

## 4. Research Methodology

The data was collected using a questionnaire. The questionnaire was designed on the basis of previous studies. Practitioners and academicians in the concerned field were also contacted and their suggestions were duly incorporated while framing the questionnaire. The questionnaire was divided into two parts. Part I of the questionnaire comprised of a list of 38 statements. The statements intended to gauge the various constituents of IM practices followed in HEI's The respondents were required to respond on a five-point scale where '1' was used to denote 'strongly disagree' and '5' 'strongly agree'. Part II of the questionnaire aimed at finding out the demographics of the respondents in terms of their gender, age, educational qualification, nature of employment, designation and experience.

The data was collected from the faculty members working in various HEI's in Punjab namely Panjab University, Chandigarh; Punjabi University, Patiala; Guru Nanak Dev University, Amritsar in the Public Sector and DAV University, Jalandhar; Guru Granth Sahib World University, Fatehgarh Sahib and Lovely Professional University, Phagwara, Punjab in the Private Sector. The sample was taken from the faculty working in these HEI's. The Universities offering courses in four major fields namely humanities, commerce, science and engineering were shortlisted with the intention of incorporating the responses of faculty belonging to different fields with regard to the IM practices followed in their Universities. Thereafter, the oldest universities amongst the shortlisted universities were selected, three each from both the public and private sector so as to be able to gather responses from the oldest and the most experience faculty members.

Purposive sampling technique was used for selecting the sample. To make the sample representative of the population, a list of Universities in Punjab was prepared. Thereafter, the list was divided into two parts i.e. the public sector and private sector universities. Further, due to time and cost restrictions, 3 universities each from the public sector as well as the private sector were chosen. The information regarding the IM practices followed in these universities was gathered by personally meeting the various faculty members. A pilot study on 100 respondents belonging to these universities was carried out. Thereafter, online questionnaires were also send to the respondents on their WhatsApp numbers as well as via email. A sample of 500 faculty members each from the public sector as well as private sector universities of Punjab was selected. 500 questionnaires were administered to the faculty members of these universities, out of which 374 responses from the public sector while 350 from the private sector universities were received after repeated reminders. Out of the questionnaires received, some questionnaires were not complete in one respect or another and so had to be dropped. Therefore 300 responses each from the public as well as private sector universities formed the sample for the study. The entire process of data collection was carried out online as well as offline during December, 2019 to December, 2020.

## 5. Data Analysis and Findings

### *5.1. Sample Characteristics*

The sampled respondents were the faculty members in HEI's and belonged to different backgrounds in terms of gender, age, educational qualification, nature of employment, designation and experience. Table 1 shows the demographics of the faculty members in HEI's of Punjab.

**Table 1: Demographic Profile of Respondents**

| *Demographic Variables* | | *Public Sector* | *Private Sector* |
|---|---|---|---|
| | | *No. of Respondents (%)* | *No. of Respondents (%)* |
| Gender | Male | 135(45) | 124(41.3) |
| | Female | 165(55) | 176(58.7) |
| | Total | 300(100) | 300 (100) |
| Age (Yrs) | 25-30 | 60(20) | 50(16.7) |
| | 30-40 | 86(28.7) | 75(25) |
| | More than 40 | 154(51.3) | 175(58.3) |
| | Total | 300(100) | 300 (100) |
| Qualification | Doctorate | 153(51) | 118 (39.3) |
| | Post Graduate | 141(47) | 175(58.3) |
| | Any other | 6(2) | 7(2.3) |
| | Total | 300 (100) | 300 (100) |
| Nature of Employment | Permanent | 42(14) | 35(11.7) |
| | Ad hoc | 185(61.7) | 200(66.7) |
| | Contractual | 73(16.5) | 65(21.6) |
| | Total | 300(100) | 300 (100) |
| Designation | Assistant Professor | 185(61.7) | 200(66.7) |
| | Associate Professor | 55(18.3) | 50(16.7) |
| | Professor | 42(14) | 30(10) |
| | Others | 18(6) | 20(6.7) |
| | Total | 300(100) | 300 (100) |
| Total Experience as a Faculty (Yrs) | Less than 5 Yrs | 85(28.3) | 105(35) |
| | 5-10 Yrs | 80(26.7) | 77(25.6) |
| | 10-15 Yrs | 82(27.3) | 60(20) |
| | More than 15 Yrs | 53(17.6) | 58(19.3) |
| | Total | 300(100) | 300 (100) |
| Experience as a faculty in the present institution (Yrs) | Less than 5 Yrs | 70(23.3) | 85(28.3) |
| | 5-10 Yrs | 75(25) | 70(23.3) |
| | More than 10Yrs | 155(51.6) | 145(48.3) |
| | Total | 300(100) | 300 (100) |

*Source:* Authors' Own Compilation

### 5.2. Formulation of Scale and Statements

A scale was formulated to find out the constituents of IM in HEI's. Items of the scale were formulated on the basis of the studies namely (Sargeant and Asif, 1998; Carvalho and Silva, 2003; Hemsley-Brown and Oplatka, 2010; Carlos and Rodrigues, 2012; Altarifi, 2014; Ghorbani and Sedeh, 2014; Gordillo-Benavente *et al.,* 2015; Effiong, 2016; Lydia and Kosgei, 2016; Yildiz, 2016; Nandi and Prasad, 2017; Yildiz and Kara, 2017 and Muneeb *et al.,* 2020). In all, 38 statements were formulated. Table 2 presents the list of 38 statements considered in order to find out the constituents of IM in HEI's.

**Table 2: Constituents of IM in Higher Educational Institutions**

| *Statements* | *Constituents of IM in Higher Educational Institutions* |
|---|---|
| S1 | Our institution communicates to us the importance of our service roles. |
| S2 | Our institution arranges regular meetings to listen to us as employees. |
| S3 | My supervisor communicates to me how my job tasks fit into the overall institutional effort. |
| S4 | Our institution announces new policies to us by holding meetings. |
| S5 | Information about government action affecting our institution is well communicated. |
| S6 | Our institution gathers employee feedback. |
| S7 | Our institution regularly seeks our suggestions. |
| S8 | Our institution collects data on our complaints. |
| S9 | Our institution does a lot of IM research. |
| S10 | Our institution seeks to identify issues that we may have. |
| S11 | Our institution surveys employees' at least once a year to assess the quality of employment. |
| S12 | Our institution educates new recruits. |
| S13 | Our institution frequently arranges Faculty Development Programs for our personal growth and development. |
| S14 | We are properly trained to perform our service roles. |
| S15 | Our institution teaches why we should do things. |
| S16 | Skill and knowledge development is an ongoing process in our institution. |
| S17 | Our institution views the development of our knowledge and skills as an investment rather than a cost. |
| S18 | I feel proud and respected while working in this institution. |
| S19 | We are self-motivated to represent our institution. |
| S20 | Our institution has the flexibility to accommodate our differing needs. |
| S21 | Our opinions matter and our voices are heard. |
| S22 | We are likely to do best on consistent basis. |
| S23 | Our salary is directly related to our performance. |
| S24 | We get extra incentives on giving extraordinary results. |
| S25 | There is an equal and fair treatment for all in our institution. |
| S26 | There is continuous recognition of our efforts and contributions. |

*contd. table 2*

| *Statements* | *Constituents of IM in Higher Educational Institutions* |
|---|---|
| S27 | Reward is systematic according to job evaluation. |
| S28 | I am allowed to use my own judgment. |
| S29 | I am given delegation of authority for solving problems. |
| S30 | I am always trusted by my supervisor. |
| S31 | I am generally given enough space and encouragement to initiate new plans on board. |
| S32 | We are closely connected to one another regardless of our designation |
| S33 | We have strong interpersonal relations with other faculty members. |
| S34 | I enjoy coming to work each day. |
| S35 | Our institution places considerable emphasis on communication between us as employees. |
| S36 | Our institution offers us a vision that we can believe in. |
| S37 | Our institution communicates us its vision well. |
| S38 | Our institution measures and rewards employee performance that contributes most to our institution's vision. |

*Note:* Exploratory Factor Analysis was used to find out the constituents of IM in HEI's.

*Source:* Authors' Own Compilation

### *5.3. Sample Adequacy and Factor Analysis*

**Table 3: KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .888 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 11876.334 |
| | Df | 703 |
| | Sig. | .000 |

*Source:* Authors' Own Compilation

Kaiser-Meyer-Oklin (KMO) measure of sample adequacy was found to be 0.888 (as shown in Table 3) which is greater that the acceptable value of 0.60. Bartlett test of sphericity was showed suitability of the data for factor analysis. The following are the factors that have been extracted as shown in Table 4.

**Table 4: Summary of Constituents of IM in Higher Educational Institutions**

| *S. No.* | *Factor Name (Variance Explained %)* | *Eigen Value* | *Cronbach Alpha* | *Loading* | *Statements Included in the Factor* |
|---|---|---|---|---|---|
| $F_1$ | *Internal Communication (10.329%)* | 8.519 | .876 | .821 | Our institution communicates to us the importance of our service roles. |

*contd. table 4*

| *S. No.* | *Factor Name (Variance Explained %)* | *Eigen Value* | *Cronbach Alpha* | *Loading* | *Statements Included in the Factor* |
|---|---|---|---|---|---|
| | | | | .794 | Our institution arranges regular meetings to listen to us as employees. |
| | | | | .769 | My supervisor communicates to me how my job tasks fit into the overall institutional effort. |
| | | | | .675 | Our institution announces new policies to us by holding meetings. |
| | | | | .662 | Information about government action affecting our institution is well communicated. |
| $F_2$ | *Internal Market Research (9.557%)* | 5.073 | .849 | .814 | Our institution gathers employee feedback. |
| | | | | .780 | Our institution regularly seeks our suggestions. |
| | | | | .755 | Our institution collects data on our complaints. |
| | | | | .740 | Our institution does a lot of IM research. |
| | | | | .643 | Our institution seeks to identify issues that we may have. |
| | | | | .550 | Our institution surveys employees' at least once a year to assess the quality of employment. |
| $F_3$ | *Training and Development (9.293%)* | 3.635 | .858 | .797 | Our institution educates new recruits. |
| | | | | .760 | Our institution frequently arranges Faculty Development Programs for our personal growth and development. |
| | | | | .674 | We are properly trained to perform our service roles. |
| | | | | .633 | Our institution teaches why we should do things. |
| | | | | .597 | Skill and knowledge development is an ongoing process in our institution. |

*contd. table 4*

| *S. No.* | *Factor Name (Variance Explained %)* | *Eigen Value* | *Cronbach Alpha* | *Loading* | *Statements Included in the Factor* |
|---|---|---|---|---|---|
| | | | | .534 | Our institution views the development of our knowledge and skills as an investment rather than a cost. |
| $F_4$ | *Psychological factors (7.866%)* | 1.866 | .801 | .784 | I feel proud and respected while working in this institution. |
| | | | | .754 | We are self motivated to represent our institution. |
| | | | | .710 | Our institution has the flexibility to accommodate our differing needs. |
| | | | | .706 | Our opinions matter and our voices are heard. |
| | | | | .701 | We are likely to do best on consistent basis. |
| $F_5$ | *HR and Rewards (7.833%)* | 1.732 | .827 | .797 | Our salary is directly related to our performance. |
| | | | | .726 | We get extra incentives on giving extraordinary results. |
| | | | | .706 | There is an equal and fair treatment for all in our institution. |
| | | | | .684 | There is continuous recognition of our efforts and contributions. |
| | | | | .635 | Reward is systematic according to job evaluation. |
| $F_6$ | *Empowerment (7.535%)* | 1.386 | .869 | .806 | I am allowed to use my own judgment. |
| | | | | .789 | I am given delegation of authority for solving problems. |
| | | | | .700 | I am always trusted by my supervisor. |
| | | | | .676 | I am generally given enough space and encouragement to initiate new plans on board. |
| $F_7$ | *Sociological Factors (7.354%)* | 1.362 | .811 | .760 | We are closely connected to one another regardless of our designation |
| | | | | .755 | We have strong interpersonal relations with other faculty members. |

*contd. table 4*

| S. No. | Factor Name (Variance Explained %) | Eigen Value | Cronbach Alpha | Loading | Statements Included in the Factor |
|---|---|---|---|---|---|
| | | | | .720 | I enjoy coming to work each day. |
| | | | | .604 | Our institution places considerable emphasis on communication between us as employees. |
| $F_8$ | *Vision (5.319%)* | 1.159 | .736 | .842 | Our institution offers us a vision that we can believe in. |
| | | | | .764 | Our institution communicates us its vision well. |
| | | | | .732 | Our institution measures and rewards employee performance that contributes most to our institution's vision. |

*Source:* Authors' Own Compilation

### Factor 1: Internal Communication

Internal Communication is the first and the most important constituent of IM in a higher education institution. The constituent explained 10.329% of the total variance explained. The dimension internal communication included statements namely "Our institution communicates to us the importance of our service roles (.821)", "Our institution arranges regular meetings to listen to us as employees (.794)", "My supervisor communicates to me how my job tasks fit into the overall institutional effort (.769), "Our institution announces new policies to us by holding meetings (.675) and "Information about government action affecting our institution is well communicated (.662)".These statements bring out the fact that the communication with the employees in higher education institution is the most useful means to inform, educate, develop and motivate the employees to accomplish the organizational objectives.

### Factor 2: Internal Market Research

Internal Market Research explaining 9.557% of the total variance was identified as the second most important constituent of IM in HEI's. The factor included statements such as "Our institution gathers employee feedback (.814)", "Our institution regularly seeks our suggestions (.780)", "Our institution collects data on our complaints (.755)", "Our institution does a lot of IM research (.740)", "Our institution seeks to identify issues that we may have. (.643)" and "Our institution surveys employees' at least once a year to assess the quality of employment (.550)". The dimension focuses on the fact that the involvement of the staff of higher educational institutions in the day to day working of the organization would help them to understand and achieve the organizational objectives in a better manner.

### Factor 3: Training and Development

Training and Development comprising of statement namely "Our institution educates new recruits (.797)", "Our institution frequently arranges Faculty Development Programs for our personal growth and development (.760)", "We are properly trained to perform our service roles (.674)", "Our institution teaches why we should do things (.633)", "Skill and knowledge development is an ongoing process in our institution (.597)" and "Our institution views the development of our knowledge and skills as an investment rather than a cost (.534)" was identified as the third most important dimension of IM practices in HEI's. the dimension explain 9.293% of the total variance and focused on the need of time to time training that need to be provided to the employees of HEI's .The skill and knowledge of the employees needs to be developed and they need to be well versed with the latest developments going on in and around them to be able to achieve the organizational objectives.

### Factor 4: Psychological factors

Psychological factors explaining 7.866% of the total variance have been identified as the fourth most important constituent of IM in HEI's. The dimension comprised of statements "I feel proud and respected while working in this institution (.784)", "We are self-motivated to represent our institution (.754)", "Our institution has the flexibility to accommodate our differing needs (.710)", "Our opinions matter and our voices are heard (.706)" and "We are likely to do best on consistent basis (.701)".The dimension focused on the fact that mental satisfaction of employees working in HEI's is very important to be able to perform better.

### Factor 5: HR and Rewards

HR and Rewards was identified as the fifth important constituent of IM in HEI's explaining 7.833% of the total variance. The factor contained statements namely "Our salary is directly related to our performance (.797)", "We get extra incentives on giving extraordinary results (.726)", "There is an equal and fair treatment for all in our institution (.706)", "There is continuous recognition of our efforts and contributions (.684)" and "Reward is systematic according to job evaluation (.635)".The dimensions stresses on the value that the organizations where the employees are respected and rewarded are able to achieve their goals better as compared to others.

### Factor 6: Empowerment

Empowerment was the sixth factor explaining 7.535% of the variance. The factor included statements such as "I am allowed to use my own judgment (.806)", "I am given delegation of authority for solving problems (.789)", "I am always trusted by my supervisor (.700)" and "I am generally given enough space and encouragement to initiate new plans on board (.676)".The factor highlighted the need of empowering the employees as a part of IM practices in HEI's.

### Factor 7: Sociological Factors

Sociological factors including statements namely "We are closely connected to one another regardless of our designation (.760)", "We have strong interpersonal relations with other faculty members (.755),

"I enjoy coming to work each day (.720) and "Our institution places considerable emphasis on communication between us as employees (.604)" and explaining 7.354% of the total variance was found to the seventh important constituent of IM in HEI's. The factor highlights the importance of peer group and interpersonal relationships in motivating the employees to work towards the achievement of organizational objectives.

### Factor 8: Vision

The dimension vision has been found to be the eight constituent explaining the IM practices in HEI's. The dimension included statements, "Our institution offers us a vision that we can believe in (.842)", "Our institution communicates us its vision well (.764)" and "Our institution measures and rewards employee performance that contributes most to our institution's vision (.732)" and explained 5.319% of the total variance. The dimension brought out that the objective for which an organization works needs to be communicated well to its employees.

## 6. Conclusion

Having realized the importance of IM practices in HEI's, an attempt has been made to develop a scale in order to identify the various constituents of IM in higher educational institutions. The results of factor analysis portrayed that internal communication, internal market research, training and development, psychological factors, HR and rewards, sociological factors, empowerment and vision as important factors as constituents of IM practices in HEI's in India.

It is recommended that the authorities in HEI's should pay additional emphasis on the aforesaid factors in order to boost faculties continued commitment levels. The study also recommends that the policy makers should create and communicate a comprehensible and practical job as well as organizational objectives.

The current study is based on HEI's in Punjab. Moreover, the data was gathered using a questionnaire and therefore scope of errors and biasness cannot be ruled out. Further, the present study is based upon the responses of 300 faculty members (each from public and private sector universities) only. The differences in internal marketing practices between public and private higher educational institutions can be explored in future. Along with this, the impact of the various factors affecting internal marketing practices on job satisfaction in higher educational institutions can also be examined. Also, the Universities offering courses in four major fields namely humanities, commerce, science and engineering formed the sample of the study. In future, studies can be carried out in institutions offering specific courses such as medical colleges, management and technology institutes etc.

## References

Altarifi, S. (2014). IM activities in higher education. *International Journal of Business and Management*, *9*(6), 126-138.

Arnett, D. B., Laverie, D. A. & McLane, C. (2002). Using job satisfaction and pride as internal-marketing tools. *Cornell hotel and restaurant administration quarterly*, *43*(2), 87-96.

Carvalho, P. M. A. & Silva,T. M. (2003). A key question for higher education: Who are the customers?.Annual Conference of the Production and Operations Management Society.

Carlos, V. S. & Rodrigues, R. G. (2012).Internal market orientation in higher education institutions–its inter-relations with other organisational variables. *Public policy and administration*, *11*(4), 690-702.

Chi, H., Yeh, H. & Liou, J. (2016).How Internal Marketing Mediates the Relationship between Teacher's Organizational Commitment and Job satisfaction. *Journal of Education & social policy*, *3*(1), 56-69.

Effiong, A. I. (2016). *Perceived Influence of Internal Marketing on Employee Commitment in a Private University Context*. Wilmington University (Delaware).

Foreman, S. K. & Money, A. H. (1995). Internal Marketing: concepts, measurement and application. *Journal of marketing management*, *11*(8), 755-768.

Ghorbani, H. & Sedeh, H. A. (2014). An empirical investigation on the impact of internal marketing on organizational effectiveness within human resource capabilities perspective (Case study: Islamic Azad University Branches in Region 4 of Isfahan Municipality). *International Journal of Academic Research in Business and Social Sciences*, *4*(1), 635.

Gordillo-Benavente, L. D. J., Domínguez-Valdez, B. M. & Vega-Sosa, L. M. (2015).Model of IM as a Trigger to Achieve the Commitment of Internal Customers at the Polytechnic University of Tulancingo in the State of Hidalgo, Mexico. *International Review of Management and Business Research*, *4*(4 Part 1), 945.

Hemsley Brown, J. & Oplatka, I. (2010).Market orientation in universities. *International journal of educational management*, *24*(3), 204-220.

Kotler, P. & Keller, K. L. (2006).Defining marketing for the 21st Century. *Kotler, Philip and Kevin Lane. Marketing Management 12e. Prentice Hall*, 3-31.

Lydia, M., Maru, L. & Kosgei, D. (2016).Internal Marketing strategy, employee performance, and organizational commitment in selected public universities in Nairobi County, Kenya.

Mosley, R. W. (2007). Customer experience, organisational culture and the employer brand. *Journal of brand management*, *15*(2), 123-134.

Muneeb, D., Tehseen, S., Amin, M., Kader, F. & Latif, K. F. (2020).Internal Marketing strategies in United Arab Emirates higher education. *Journal of Enterprise Information Management*.

Nandi, S. & Prasad, S. S (2017). Internal Marketing–An Essential Condition for Improving the Quality of Indian Higher Education? *International Research Journal of Management and Commerce, 4*(8), 154-183.

Sargeant, A. & Asif, S. (1998). The strategic application of Internal Marketing an investigation of UK banking. *International Journal of Bank Marketing*, *16*(2), 66-79.

Yildiz, S. M. & Kara, A. (2017). A unidimensional instrument for measuring Internal Marketing concept in the higher education sector. *Quality Assurance in Education*, *25*(3), 343-361.

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.08*

# Influence of Research Infrastructure, Teachers' Motivation and Career Opportunity on Students' Attitude towards Research

**Priyabrata Panda[1], Arjuna Kumar Maharana[2*] and Shaikh Azhar Iqbal[3]**
[1]*Assistant Professor, Gangadhar Meher University, Sambalpur, Odisha. E-mail: pandapriyabrata@rocketmail.com*
[2]*PhD Scholar, Gangadhar Meher University, Sambalpur, Odisha. E-mail: arjunakumarmaharana506@gmail.com*
[3]*Lecturer, Laxmi Narayan College, Jharsuguda, Odisha. E-mail:azhariqbal081@gmail.com*
** Corresponding Author*

**To cite this paper**

Panda, P., Maharana, A.K., & Iqbal, S.A. (2021). Influence of Research Infrastructure, Teachers' Motivation and Career Opportunity on Students' Attitude towards Research. *Orissa Journal of Commerce.* 42(4), 106-118.

**Keywords**

Research attitude, Teacher's motivation, Research infrastructure, Career opportunity

**JEL Classification**

I22, I23, I24, I28

**Abstract:** Research skill and temper not only helps in rational decision making but also facilitates positive change in every dimension of social life and such attitude must develop from the undergraduate level. In the light of this, the present research work tried to assess the factors which stimulate students' temper towards research. The influence of teacher's motivation and research infrastructure on students' attitude towards research is studied along with the mediation effect of career opportunity. Data are collected through scheduled questionnaire method from B. Com and M. Com final semester students from different colleges of western Odisha. Structural equation model is applied to study such effect. It is found that teacher's motivation and research infrastructure have no direct effect but has mediated effect on student's attitude. So, the policy makers should focus providing career opportunity to the students in research to ignite research attitude among them from the graduate level.

## 1. Introduction

Research skill and knowledge has become indispensable in every field nowadays and students being the future are in need to develop rational attitude towards it. Research experience has prodigious value in students' life and helps them in various fields (Petrella and Jung, 2008). But it has been witnessed that many students at graduate and post-graduate level assume that research is unnecessary and they somehow complete their project papers. Most of them prepare projects but only few of these go for publication (Saini *et al.*, 2020).Their attitude can be turned positively towards research by assigning research homework which is interesting and related to their practical life (Emsen *et al.*, 2011).

Moreover, students should be provided with grants to get motivated to participate in more numbers and more seriously (Ünver *et al.*, 2018; Purani, 2014). Teachers also have an important role in shaping and motivating students attitude towards research (Okyere, 2013). It is also a fact that peer groups have a significant impact on the attitude of the young students (Guimond, 1999). Though some studies

opined that gender has a role in affecting the research attitude (Memarpour *et al.*, 2015; Saleem, 2015), some others differed in their opinions (Hussain *et al.,* 2016).

Studying the attitude is a difficult job mainly due to the involvement of psychological factors. Family background of the students also affect their attitude to a great extent(Jena, 2020). Considering all these factors, the current study attempts to study the impact of research infrastructure and teachers' motivation on research attitude of the students mediating career opportunity.

## 2. Review of Literature

### *2.1. Teacher's Motivation and Student's Attitude*

Kurniawan *et al.* (2019) investigated the students' attitude towards natural science and found that teachers should ensure creativity and dynamism to influence the attitude of the students. Shaukat *et al.* (2014) analysed the postgraduate students' attitude towards research and stated that the teacher's educational programs must be improved to develop positive attitudes in the students towards research. Ramsay *et al.* (2020)studied the impact of teaching courses on attitude of the students and found that there is no significant impact of such course but a better version of teaching may lead to a better attitude in future. Siemens *et al.* (2010) found that participation of the students in research can be increased by removing barriers like short time period and unavailability of good mentors. Garancho *et al.* (2019) found that teachers' motivation plays a major role in developing a positive attitude in students towards research. Butt (2013) stated that low student-teacher attitude leads to a negative attitude in students for research and preparation of teachers through various programs will be helpful in developing right attitude in students for research.

### *2.2. Research Infrastructure and Students' Attitude*

Ismail *et al.* (2014) made a comparative study on students' attitude of two universities towards research activity and found that there were no such differences but there were certain barriers like time, training and presence of the supervisors in research interest which demotivate students. Kaur (2016) studied the attitude of students towards research and discovered that research courses improve the confidence level in students and influence their attitude positively. Memarpour *et al.* (2015) found that proper input on theory and practical in institutional level can help the students dive deep into the research process. Borden *et al.* (2008) studied the impact of seminars on students' attitude and behaviour and found it to be positive. Nusrath *et al.* (2020) also substantiated that the orientation program helps to motivate students for conducting research activities. Kakupa and Xue (2019) found that the relationship between the research course and anxiety level is significant and taking more research courses reduces the anxiety level.

### *2.3. Career Opportunity*

Chandramohan and Ramesh (2019) studied the attitude of doctoral students and found that most of them are aiming a good career option but they need proper training for that. Bridle *et al.* (2013) found that a better funding scheme and a better network can lead to a better early research career. Bhalerao

and Prasad (2016) studied the interns' attitude towards research as a career and discovered that nobody had research as his/her first professional choice. Browning *et al.*(2017) observed the journey of researchers and found that researchers must be passionate towards research to have a good and consistent career. Patel (2019) found that many students are interested in research as it provides good career opportunities and wants research as a subject in their course curriculum but there are also a number of students who are not aware of the opportunities.

### *2.4. Students' Attitude towards Research*

Abun *et al.* (2019) found that the attitude of students affects their intention to carry out research in future. Oguan *et al.* (2014) studied the attitude and anxiety of students towards research and discovered that students having a good academic achievement have low anxiety in research and vice versa. He also found that students' attitude is positively related to academic achievement. Aziz *et al.* (2018) made a study on the perception of students and found that students at undergraduate level feel the necessity of research but they cannot excel in this field because of some barriers like work pressure and lack of time. Chandramohan and Ramesh (2019) found that many students chose research because they were very much interested for it. Emsen *et al.,* (2011) found that research can be made more interesting for students if they are given some research assignment concerned with their real life and this way their attitude can be more positive.

Many studies in the past have been undertaken in the concerned area but a little attention has been extended towards the research attitude of students from career perspective. Though attempts have been made to study the students' attitude through various factors, only a few researchers have pointed the mediating impact. So far as methodological gap is concerned, a smaller number of researchers applied structural equation modelling with a mediating factor which would have resulted a robust result. The present study explores the impact of research infrastructure and teachers' motivation on the students' attitude towards research with the mediation impact of career opportunity which is a lack in the reviewed literatures.

## 3. Objectives and Hypotheses of the Study

### *3.1. Objectives of the Study*

The research is carried on with the following objectives:

- To assess the influence of research infrastructure on student's attitude towards research.
- To measure the influence of teacher's motivation on student's attitude towards research.
- To trace the mediation impact of career opportunity on student's attitude towards research through research infrastructure and teacher's motivation.

### *3.2. Hypotheses of the Study*

Following hypotheses are formulated based on objectives and after reviewing the existing literatures:

$H_{01}$: There is no influence of research infrastructure on students' attitude towards research.

$H_{02}$: There is no influence of teachers' motivation on students' attitude towards research.

$H_{03}$: There is no mediation impact of career opportunity on students' attitude towards research through research infrastructure and teachers' motivation.

## 4. Research Methodology

### *4.1. Sampling and Data Collection*

The target population for the present study is the undergraduate and post graduate final year commerce students of western Odisha. All the authors of this research work belong to western part of Odisha which enables them for easy collection of data from the concerned students through google forms during the pandemic. Thus, the scope of the study is confined to western part of Odisha only. Probability sampling method is used for the selection of samples from the population. A scheduled questionnaire was formed through google forms and its link was sent to the groups formed on WhatsApp Messaging Application for online classes of different colleges. A total of 482 responses were received. After checking unengaged responses, 445 responses were finalised. These sample units correspond both the criteria advocated by Kline (2011) & Weston and Gore (2006). Kline (2011) argued that there may be 10 to 20 units required for per estimator. Weston and Gore (2006) proposed that sample size must be at least 200 for structural equation modelling.

The first part of the questionnaire replicates demographic information. The second part assembles Research Infrastructure (RI) with three variables, the third part collects information regarding Teachers' Motivation (TM) with three variables, the fourth and the fifth parts include Career Opportunity (CO) and Student Attitude (SA) with four observed variables each. Variables are rated with 5-point Likert Scale with 1 (Strongly Disagree) and 5 (Strongly Agree). SPSS 23 and AMOS 20 are used for data analysis.

### *4.2. Reliability and Validity Estimates*

For reliability and validity estimates, following threshold values are considered.

Reliability

Cronbach's Alpha > .70 (Cronbach, 1951; Nunnally, 1978; Cortina 1993)

Composite Reliability > .70 (Bagozzi and Yi, 1988, Dragan and Topolsek, 2014, Razak *et al.*, 2019)

Convergent Validity: Average Variance Extracted (AVE) > 0.50 (Hair *et al.,* 2017)

Discriminant Validity: HTMT Score <.90 (Henseler *et al.*, 2015; Alarcon and Sacchez, 2015)

**Table 1: Reliability and Validity Estimate**

| *Constructs* | *Cronbach's Alpha* | *Composite Reliability (CR)* | *Average Variance Extracted (AVE)* |
|---|---|---|---|
| RI | 0.80 | 0.79 | 0.57 |
| TM | 0.82 | 0.82 | 0.61 |
| CO | 0.85 | 0.80 | 0.62 |
| SA | 0.86 | 0.86 | 0.61 |

*Source:* Authors' Own Compilation

Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) are corresponding with the above criteria.

**Table 2: Discriminant Validity with HTMT Score**

| | *RI* | *TM* | *CO* |
|---|---|---|---|
| RI | | | |
| TM | .86 | | |
| CO | .76 | .59 | |
| SA | .59 | .58 | .73 |

*Source:* Authors' Own Compilation

Above table replicates discriminant validity with Heterotrait-Monotrait(HTMT) Ratio of Correlations advocated by Henseler *et al.* (2015) by disapproving Fornell and Larcker (1981) criteria which is applicable when sample size is more than 500.The estimates HTMT score is within the threshold value. Hence, the reliability and validity criteria of the proposed model is said to be satisfied.

**Table 3: Model Fit Indices**

| *Model Fit Indices* | *Recommended Value* | *Obtained Value* |
|---|---|---|
| Chi-square/df (Hinkin,1995) | < 3.00 | 2.428 |
| GFI (Hooper *et al.,* 2008; Bagozzi & Yi, 1988) | >0.90 | .946 |
| AGFI (Muenjohn & Armstrong, 2008) | >0.80 | .920 |
| RMSEA (Bollen, 1989; Browne and Cudeck, 1992) | <0.10 | .057 |
| CFI (Byrne, 2016) | >0.80 | .971 |
| TLI (Browne and Cudeck, 1992; Byrne, 2016) | >0.95 | .963 |

*Source:* Authors' Own Compilation

*Note:* GFI : Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; CFI: Comparative Fit Index; RMSEA: Root Mean Square Error of Approximation; TLI: Tucker Lewis Index.

The model fit criteria are corresponding with the obtained values. Thus, the estimated model is termed as a fit model.

A greater number of male respondents have participated in the research process as compare to female respondents. Similarly, a greater number of B. Com students than M. Com students have responded. The demographic profile infers that a greater number of students are male and belong to urban area and from business family.

**Table 4: Profile of Respondents**

| *Variables* | *Frequency* | *Percentages* |
|---|---|---|
| Gender | | |
| Male | 240 | 54 |
| Female | 205 | 46 |
| Class | | |
| B. Com | 265 | 60 |
| M. Com | 180 | 40 |
| Father's Occupation | | |
| Business | 165 | 37 |
| Service | 147 | 33 |
| Farming | 79 | 18 |
| Profession | 54 | 12 |
| Residential Area | | |
| Rural | 147 | 33 |
| Urban | 192 | 43 |
| Semi-Urban | 106 | 24 |

*Source*: Authors' Own Compilation

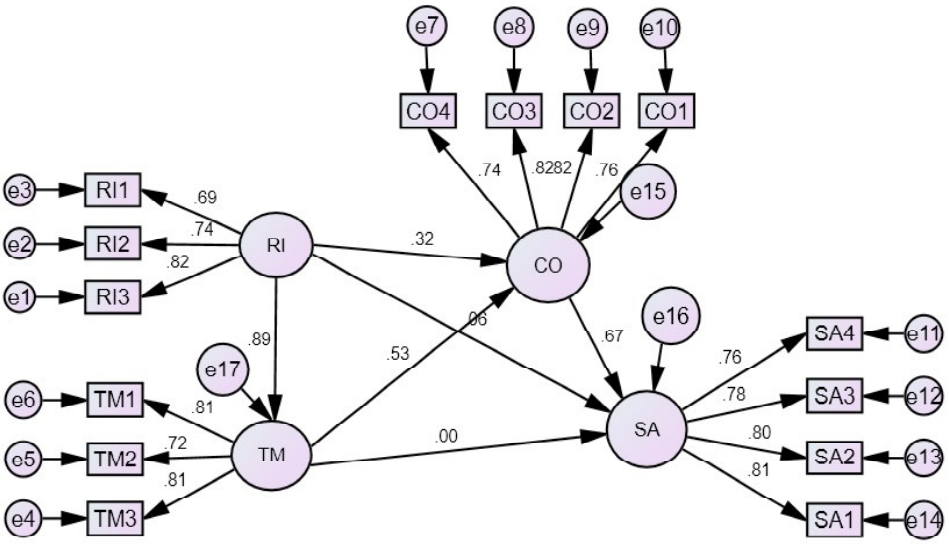


**Figure 1: Path Analysis of the Model**

*Source :* Authors' Own Compilation

**Table 5: Structural Parameters**

| Hypothesis | | | Estimate | S.E. | C.R. | P | Remark |
|---|---|---|---|---|---|---|---|
| TM | <—- | RI | .888 | .052 | 15.488 | *** | Supported |
| CO | <—- | TM | .533 | .117 | 3.954 | *** | Supported |
| CO | <—- | RI | .318 | .106 | 2.389 | .017 | Supported |
| SA | <—- | CO | .672 | .110 | 6.584 | *** | Supported |
| SA | <—- | TM | .002 | .147 | .014 | .989 | Not Supported |
| SA | <—- | RI | .062 | .127 | .417 | .677 | Not Supported |

*Source:* Authors' Own Compilation

## 5. Model and Discussion

It is found in the above figure and table that research infrastructure or facility has no direct impact on student's research attitude. But it has indirect impact through career opportunity on student's attitude which was supported by Ismail *et al.* (2014) & Vairamani and Akoijam (2018) but Kaur (2016) propped a different opinion that availability of research course can motivate students. Similarly, teacher's motivation does not directly influence students to pursue research. But it has indirect impact through career opportunity. Thus, the model is termed as a full mediation model. In addition, research infrastructure has significant impact on teacher's motivation. But some studies found contrast result i.e. teachers' motivation is directly related to students' motivation and attitude(Pawar, 2019).

**Table 6: Sobel Test for Significance of Mediation**

| DV-MV-IV* | Sobel Statistics | P Value |
|---|---|---|
| RI-CO-SA | 2.60 | 0.004 |
| TM-CO-SA | 3.51 | 0.000 |

*Source:* Authors' Own Compilation

*Dependent Variable-Mediation Variable-Independent Variable.

Above table reflects significance of mediation by Sobel test. Both the critical paths with the common mediation variable are significant at 1% level (Sobel, 1987; Baron *et al.,* 1986). Thus, mediation is said to be significant. In addition, the difference between standardised regression weights before and after addition of common latent factor is less than .02 which infers that the model is free from common method bias (MacKenzie and Podsakoff, 2012).

## 6. Policy Implication

It is evident from the model that availability of research infrastructure like availability of ICT facility viz. free internet, computer, statistical software, access to data base and organising seminars,

workshops etc. It cannot ignite student temper towards research. Moreover, it is seen that the state universities of the geographical region under study fail to provide sufficient infrastructure required for research. Students are not getting proper access to database like Bloomberg or CMIE. However, they are getting INFLIBNET access which is not sufficient. So, this problem should be considered.

Similarly, the model also suggests that teacher's motivation also does not have direct impact on research attitude of a student. But a teacher can motivate a student towards research when many career options are available or when a student can realise that research skill will develop an analytical power which will be helpful in problem solving and decision making at professional level. It is the teacher or guide who has a significant impact on the research activity of the student. If the teacher is an expert in the research field and he has a high motivating ability, this will definitely accelerate the research work of the student. And when the teacher is more aware about the career opportunities available in the research field and is capable of informing and guiding his students towards the availability of a good career by developing problem solving and decision-making ability in them, it will have a robust impact. Because It has been seen that many students have good attitude towards research but they do not show much interest in choosing research as career (Park *et al.,* 2010)**.** So, teacher's motivation and availability of research infrastructure can influence student's attitude towards research when many career options are available. This is in line with (Pawar, 2019) findings. Ismail *et al.* (2014) also argued that lack of interest of the supervisor towards research can demotivate students' attitude towards research. So, improving all the said areas will lead to better satisfaction of the students and they can enjoy research in more fruitful manner.

## 7. Conclusion

Research is a concept of universal applicability and positive attitude of the students with improved infrastructure can yield robust result. Though some studies concluded that the students have negative attitude towards research (Saini *et al.,* 2020), teachers should try to remodel their teaching process to ensure a more positive environment (Kurniawan *et al.,* 2019). This is due to various factors like lack of proper guidance, unavailability of research facilities; wrong perception etc. So, a student must have been continuously motivated to acquire research skill as it is helpful in their professional life to make rational judgement apart from the contribution towards country's scientific development. As the findings of the study focus on the career opportunity, this should be used by the teachers as a major tool to motivate students for research. Moreover, Browning *et al.,* (2017) has added that universities and colleges need to nurture and invest on their researchers from very early in their career. So better career opportunity should be ensured and communicated to students during under graduation and post-graduation studies.

This study is limited to the western part of Odisha with a smaller number of colleges. So, studying a larger region will give a clearer view of the proposed model. Apart from this factors other than research infrastructure, teachers' motivation and career can be taken into consideration to study their impact on students' attitude towards research with nomological validity testing, F and Q square statistics which can make the outcome more robust.

## References


Abun, D., Magallanes, T., Encarnacion, M. J., Lalaine, S., & The, F. (2019). The Attitude of Graduate students toward Research and their Intention to Conduct Research in the Future. *International Journal of Modern Research in Engineering & Management (IJMREM)*, *2*(11), 74–87.

Alarcón, D. & Sacchez, J. A. (2015).Assessing convergent and discriminant validity in the ADHD-R IV rating scale: User-written commands for Average Variance Extracted (AVE), Composite Reliability (CR), and Heterotrait-Monotrait ratio of correlations (HTMT), *Spanish STATA Meeting*.

Aziz, K., Shahid, G., & Shiekh, A. (2018).Perception towards research among undergraduate physical therapy students. *Biometrics & Biostatistics International Journal Research*, *7*(3), 171–175.

Bagozzi, R., P. & Yi, Y. (1988).On the evaluation of structural equation models, *Journal of the Academy of Marketing Science*, *16*(1). 74–94.

Baron, R., M., & Kenny, D., A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.

Bhalerao, S., & Prasad, B. S. (2016).Journal of Ayurveda and Integrative Medicine Attitude of interns towards research as a career option. *Journal of Ayurveda and Integrative Medicine*, *7*(2), 76–77.

Bollen, K. A. (1989). Structural equations with latent variables. *John Wiley & Sons*.

Borden, L. M., Joyce, S. L., & Dawn, S. (2008). Changing College Students' Financial Knowledge,Attitudes, and Behavior through Seminar Participation. *J Fam Econ Iss*, 29, 23–40.

Bridle, H., Vrieling, A., Cardillo, M., Araya, Y., & Hinojosa, L. (2013).Preparing for an interdisciplinary future: A perspective from.*Futures*, *53*, 22–32.

Browne, M. W., & Cudeck, R. (1992).Alternative Ways of Assessing Model Fit.*Sociological Methods & Research*, *21*(2), 230–258.

Browning, L., Thompson, K., Dawson, D., & Browning, L. (2017). From early career researcher to research leader: survival of the fittest? *Journal of Higher Education Policy and Management*, *39*(4), 1–17.

Butt, I. H. (2013). Master in Education Student Attitudes towards Research: A Comparison between two Public Sector. *A Research Journal of South Asian Studies*, *28*(1), 97–105.

Byrne, B. M. (2016).*Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*.

Chandramohan, S., & Ramesh, P. (2019). A Study on Attitude towards Research among the Doctoral. *International Journal of Civil Engineering and Technology*, *8*(11), 811–823.

Cortina, J, M. (1993). What is coefficient alpha? An examination of theory and applications.*Journal of Applied Psychology*, *78*(1), 98–104.

Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests, *Psychometrika*, *16*(3) 297–334.

Dragan, D. & Topolsek, D. (2014) Introduction to Structural Equation Modeling: Review, Methodology and Practical Applications, *The 11th International Conference on Logistics,* 1-27.

Emsen, P., Sultan, D., Õoõ, K., &Soran, H. (2011).An examination of the attitudes of secondary school students towards research homeworks according to different variants.*Procedia Social and Behavioral Sciences*, *15*, 2574–2577.

Fornell, C., &Larcker, D. F. (1981).Evaluating Structural Equation Models with Unobservable Variables and Measurement Error.*Journal of Marketing Research*, *18*(1), 39–50.

Garancho, G. A. G., & Marpa, E. P. (2019). Teacher Education Students ' Attitude towards Research Studies: A Case Study. *Rangsit Journal of Educational Studies*, *6*(1), 12–25.

Guimond, S. (1999). Attitude Change During College: Normative or Informational Social Influence? *Social Psychology of Education*, *2*, 237–261.

Hair, J., Hult, G., T., M., Ringle, C. M., Sarstedt, M., Thiele, K., O., (2017). Mirror, Mirror on the Wall: A Comparative Evaluation of Composite-based Structural Equation Modeling Methods. *Journal of the Academy of Marketing Science*, *45*(5), 616–632.

Henseler, J., *Ringle, C., M., &Sarstedt (2015).*A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling.*Journal of the Academy of Marketing Science*, *43*(1), 115–35.

Hinkin, T., R. (1995).A Review of Scale Development Practices in the Study of Organizations. *Journal of Management*, *21*(5), 967–988.

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural Equation Modeling: Guidelines for Determining Model Fit. *The Electronic Journal of Business Research Methods,6*(1), 53-60.

Hussain, T., Qayyum, A., &Mumtaz, C. (2016).A Study on Attitude towards Research among Technology Education Students in Pakistan. *Bulletin of Education and Research*, 38(2), 113–122.

Ismail, I. M., Bazli, M. Y., & Flynn, S. O. (2014). Study on medical student's attitude towards research activities between University College Cork and UniversitiSains Malaysia. *Procedia - Social and Behavioral Sciences*, *116*(2013), 2645–2649.

Jena, R. K. (2020). Computers in Human Behavior Measuring the impact of business management Student's attitude towards entrepreneurship education on entrepreneurial intention: A case study. *Computers in Human Behavior*, *107*(December 2018), 106275.

Kakupa, P., & Xue, H. (2019).Students' Attitudes towards Research: A Study of Graduate Education Students at a Chinese Normal University. *Educational Process International Journal*, *8*(2), 97–110.

Kaur, A. (2016). Attitude of Students towards Research. *Scholarly Research Journal for Interdisciplinary Studies*, *3*(23), 1716–1720.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling*.Guilford Press.

Kurniawan, D. A., Astalini, A., Darmaji, D., &Melsayanti, R. (2019). Students' attitude towards natural sciences. *International Journal of Evaluation and Research in Education*, *8*(3), 455–460.

Kuwaiti, A. A. Al. (2014). Health science students' attitude towards research training programs in the Kingdom of Saudi Arabia: Reliability and validity of the questionnaire instrument. *Journal of Family and Community Medicine*, *21*(2), 134–139.

MacKenzie, S., B., & Podsakoff, P. M. (2012). Common Method Bias in Marketing: Causes, Mechanisms, And Procedural Remedies. *Journal of Retailing*, *88*(4), 542–555.

Memarpour, M., Fard, A. P., & Ghasemi, R. (2015).Evaluation of attitude to, knowledge of and barriers toward research among medical science students.*Asia Pacific Family Medicine*, *14*(1).

Muenjohn, N., & Armstrong, A. (2008). Evaluating the Structural Validity of the Multifactor Leadership Questionnaire (MLQ), Capturing the Leadership Factors of Transformational-Transactional Leadership, *Contemporary Management Research*, *4*(1), 3–14.

Nunnally, J. C. (1978). *Psychometric Theory*. New York: McGraw-Hill Publishing.

Nusrath, A., Dhanalakshmi, T. A., & Amita, K. (2020).Effectiveness of an Orientation Program on Attitude of Undergraduate Medical Students toward Undertaking of Indian Council of Medical Research – Short Term Studentship Programme.*Journal of Medical Sciences and Health*, *6*(3), 1–6.

Oguan, Jr, F. E., Bernal, M. M., &Pinca, M. C. D. (2014).Attitude and Anxiety towards Research, Its Influence on the Students' Achievement in the Course.*Asian Journal of Management Sciences & Education*, *3*(October), 165–172.

Okyere, M. (2013). Student attitude towards Mathematics and Performance: Does the teacher attitude matter?*Journal of Education and Practice*, 4(3), 132–139.

Papanastasiou, E. C. (2005). Factor Structure of the "Attitudes Toward Research" Scale. *Statistics Education Research Journal*, *4*(1), 16–26.

Park, S. J. K., Mcghee, C. N. J., & Sherwin, T. (2010). Medical students' attitudes towards research and a career in research: an Auckland, New Zealand study Serena. *Journal of the New Zealand Medical Association*, *123*(1323), 34–42.

Patel, N. A. (2019). Do our medical undergraduates need to develop research skills? Assessing perceptions, attitudes and skills of medical undergraduates.*International Journal of Community Medicine and Public Health*, *6*(5), 1908–1912.

Pawar, P. R. (2019). Impact of Teachers' Attitude on Motivation of the Students.*Adalya Journal*, *8*(1), 1–2.

Petrella, J. K., & Jung, A. P. (2008). Undergraduate Research: Importance, Benefits, and Challenges. *International Journal of Exercise Science*, *1*(3), 91–95.

Purani, J. P. (2014). A Study of The Attitude of P. G. Students Towards Research. *International Journal of Multidisciplinary Research*, *May*, 36–40.

Ramsay, A., Wicking, K., & Yates, K. (2020). Nurse Education in Practice In what ways does online teaching create a positive attitude towards research in nursing students studying a first-year evidence-based practice undergraduate subject online?*Nurse Education in Practice*, *44*(February), 102744.

Razak, N., Themba, O. S., &Sjahruddin, H. (2019). Brand awareness as predictors of repurchase intention: Brand attitude as a moderator. *Advances in Social Sciences Research Journal,* 6(2) 541-554.

Saini, M., Kumar, A., Kaur, G., & Saini, M. (2020). Research Perception, Motivation and Attitude among undergraduate Students: A Factor and Analysis Approach Undergraduate Students: A Factor Analysis Approach. *Procedia Computer Science*, *167*(2019), 185–192.

Saleem, K. (2015). Gender Differences in Research Attitudes: Comparison of Public and Private s Sector Postgraduate Students' Attitude towards Research. *Pakistan Journal of Social Sciences*, *35*(2), 669–679.

Saud, S., Furaikh, A., Erbaie, B., Omairi, A., & Ganapathy, T. (2017). A Cross † sectional Survey on Nursing Students' Attitude towards Research.*Journal of Health Specialties*, *5*(4), 185–191.

Shaukat, S., Siddiquah, A., &Abiodullah, M. (2014).Postgraduate Students' Attitudes towards Research.*Bulletin of Education and Research*, *36*(1), 111–122.

Siemens, D. R., Punnen, S., Wong, J., & Kanji, N. (2010).A survey on the attitudes towards research in medical school.*BMC Medical Education*, *10*(4).1-7.

Sobel, E. (1987). Direct and Indirect Effects in Linear Structural Equation Models. *Sociological Methods & Research*, *16*(1), 155–176.

Ünver, S., Semerci, R., Özkan, Z. K., &Avciba°i, I. (2018). Attitude of Nursing Students Toward Scientific Research: A Cross-Sectional Study in Turkey. *Journal of Nursing Research*, *26*(5), 356–361.

Vairamani, C. R., & Akoijam, B. S. (2018).Knowledge, attitude and perceived barriers towards conducting research among students in a medical college, India.*International Journal of Community Medicine and Public Health*, *5*(June), 806–810.

Weston, R, and Paul A. G. (2006). A brief guide to structural equation modelling, *The Counselling Psychologist*, 34 (5), 719–751.

## Appendix

### Appendix 1: Factors and Variables

| *Factors* | *Label* | *Variables* |
|---|---|---|
| Research Infrastructure (RI) (Kuwaiti, 2014) | RI1 | ICT facility is required for research |
| | RI2 | Access to database is essential |
| | RI3 | Organizing symposium, seminars, workshops and conferences motivates research |
| Teacher's Motivation (TM) | TM1 | Faculties should have adequate research knowledge (Kuwaiti, 2014) |
| | TM2 | Degree of involvement of the teacher should be more (Kuwaiti, 2014) |
| | TM3 | Faculty members should be motivating towards research |
| Career Opportunity (CO) | CO1 | Research helps in professional life problem solving |
| | CO2 | Research helps in professional decision making |
| | CO3 | Research leads to better management |
| | CO4 | Research leads to better career option (Saud *et al.,* 2017; Park *et al.,* 2010) |
| Student's Attitude towards research (SA) (Aziz *et al.,* 2018; Vairamani & Akoijam, 2018) | SA1 | I am interested in research (Papanastasiou, 2005) |
| | SA2 | Research gives me personal satisfaction |
| | SA3 | Research helps in developing my analytical skill |
| | SA4 | I enjoy research(Papanastasiou, 2005) |

*Source:* Authors' Own Compilation

### Appendix 2: Factor Loadings

| | *CO* | *RI* | *SA* | *TM* |
|---|---|---|---|---|
| CO1 | 0.75 | | | |
| CO2 | 0.76 | | | |
| CO3 | 0.83 | | | |
| CO4 | 0.74 | | | |
| RI1 | | 0.69 | | |
| RI2 | | 0.74 | | |

*contd. appendix 2*

| | *CO* | *RI* | *SA* | *TM* |
|---|---|---|---|---|
| RI3 | | 0.82 | | |
| SA1 | | | 0.81 | |
| SA2 | | | 0.80 | |
| SA3 | | | 0.78 | |
| SA4 | | | 0.76 | |
| TM1 | | | | 0.81 |
| TM2 | | | | 0.72 |
| TM3 | | | | 0.81 |

*Source:* Authors' Own Compilation

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.09*

# Pattern of Employee Cost in Select Corporate Sectors of India: An Empirical Analysis

**Neelam Yadav[1*] and Shurveer S. Bhanawat[2]**
*[1]Research Fellow, Department of Accountancy and Business Statistics, Mohanlal Sukhadia University, Udaipur, Rajasthan.*
*E-mail: neelamyadav071993@gmail.com*
*[2]Professor & Head, Department of Accountancy and Business Statistics, Mohanlal Sukhadia University, Udaipur, Rajasthan.*
*E-mail: shurveer@gmail.com*
** Corresponding Author*

**To cite this paper**

Yadav, N., & Bhanawat, S. S. (2021). Pattern of Employee Cost in Select Corporate Sectors of India: An Empirical Analysis. *Orissa Journal of Commerce.* 42(4), 119-129.

**Keywords**

Employee cost, Indian corporates, Net sales, Total expenditure

**JEL Classification**

C1, C81, M41, L65, L96, L86

**Abstract:** This paper paper is an attempt to identify the pattern of employee cost in the Indian corporate sector during the last 15 years from 2005 to 2019. In order to achieve the objective, data from 9 sectors have been selected. For testing the hypotheses, the ANOVA test has been applied. The study concludes that the Indian corporates have not yet adopted any consistent wage policy. Further, it is also attempted to provide insightful information for policymakers to lessen the attrition rate in the corporates by analyzing the employee cost component in cost structure; it will also give room to the companies to determine up to what extent the employee cost will be increased. From the point of view of employment, the IT sector is an alluring sector that consistently providing the highest wages to the employees over the selected years of study.

## 1. Introduction

Optimal cost management becomes a central point to maintain the profitability due to sudden changes in technologies and tough global and domestic competition, moreover due to the Covid- 19 entire corporate sector through out the globe is under pressure to maintain the optimal cost of the product. In this sequence, most companies focused on reducing employee cost by adopting various modes like salary cut, retrenchment, and restricted the perquisites. Companies like Tata Consultancy Service, Wipro Ltd., Price Water House Coopers (PWC) Ltd., Infosys Ltd., etc. have decided to give a deferred hike in salary. Reliance Industries Ltd., Kazaria Ceramics, TVS Motor Company all have reduced employees' salaries due to Covid-19, but these companies have not retrenched employees from companies. Swiggy, Ola Cabes, Uber Techonologies Inc., Zomato, International Business Machines Corporation (IBM), etc. have retrenched several employees for reducing production costs. According to the study of CMIE (Centre for Monitoring Indian Economy), 122 Million (12.20 Crore) people have lost their jobs since the 25th of March, 2020, due to the Covid-19 pressure. However, Hindustan Unilever Ltd., Asian

Paints, Johnsen & Johnsen, Flipkart, Hindusthan Coca Cola Beverages Private Ltd. (HCCB), Bhartpe, Inflexion Point Venture (IPV), and BHS Home Appliance has givenhike in salaries to their employees to face pandemic Covid-19 situation more serenely.

In India, the unemployment rate increased rapidly due to the pandemic effect. In the first five months of 2020, the unemployment rate was January -7.22 %, February – 7.76%, March– 8.75%, April – 23.52%, and May – 23.48%. This data explains that many employees have lost their jobs because of the companies' economic and financial crises due to the global pandemic Covid-19. A large number of companies had retrenched their employees all over the world. So, here the question arises that if employee cost is so crucial, then why the organized sector could not bear this cost without production hardly even for two or three months during the pandemic situation. In the corporate sector, employee cost is an essential part of the cost of production. Therefor this study has been conducted to examine the significance of employee cost in Indian corporate sectors in terms of sales and total expenditure.

This research mainly focuses on the cost component i.e. employee cost in cost structure, we didn't focus on factors affecting the employee cost. No doubt several factors are affecting the employee cost and these factors vary from industry to industry. But this study will mainly focus on the pattern of employee cost in the Indian corporate sector.

## 2. Review of Literature

A very few studies were conducted on individual components of total cost, i.e., employee cost. The present research work entirely depends on the analysis of employee cost. In the sequence of literature review the following Kathuria *et al.* (2019), Pudi (2018) and Rajasekhar (2017), have investigated financial performance of different sectors of Indian corporate sectors. In the way of literature review, Anand *et al.* (2005) highlighted developments in cost management practices in the Indian corporate sector. The results suggest that firms have better insights for benchmarking and budgeting with activity based costing cost system. Yet, the consistency in their priority of budget goals is lacking, unlike firms using traditional costing systems. In contrast, Kumar and Sreeramulu (2007) compare employee productivity and employee cost ratios between traditional and modern banks from 1997 to 2008. The study concludes that modern banks (foreign and new private sector banks) were superior to traditional banks (public sector and old private sector banks). The study of Nurlina (2020) shows that the work environment does not affect employees' performance, leadership style, and intrinsic motivation on the employee's account. Leadership styles and the variable that the dominant influence on the dependent variable. The study by Pratt *et al.* (2021) is to create an algorithm to predict the behavior of employees. Data of 102 respondents were used for the study. An algorithm was designed to help employers discover in which areas and ways the company should improve their work. The algorithm can predict which employees are likely to leave the company and for which reasons. At the same time, it can be used as a guide for technology developers to improve the quality of their communication technologies. Furthermore, Rao *et al.* (2015) explore cost and management accounting practices used by manufacturing companies operating in Andhra Pradesh, India. The study's significant findings, i.e., the most widely used product costing method, are job costing. The three most widely used overhead bases are prime costs, units produced, and direct

labour cost; pricing decisions are the most crucial area where cost information is used. The findings also indicate that companies perceive traditional management accounting tools as still essential. Another study conducted by Srivastava and Nair (2018) represents a framework for predicting employee attrition concerning voluntary termination employing predictive analytics. Workforce analytics can be applied to reduce the overall business risk by predicting the employee churn. Predictive analytics in the field of study uses statistical analysis, data mining techniques, and machine learning to predict future events accurately based on past and current situations. Tomic *et al.* (2018) examined the relationships among employee loyalty, service quality, cost reduction, and company performance. Different statistical analyses (the Kolmogorov-Smirnovljev statistic, Path analysis, AMOS statistic , and lavaan ) have been used for the study. The study concluded that employee loyalty is significantly related and has a significant positive influence on company performance. After an intensive review of the literature the following questions arises in order to fulfill the research gap:

- How much percentage of employee cost to sales in the structure of cost are being paid?
- Is there any difference available in different sectors regarding the pattern of employee cost?
- Which sectors do constitute the highest employee cost in their cost statement?

As far as review of literature is concerned, no study was found which is fully devoted to employee cost analysis of Indian corporate sectors. Incidentally, above literature is showing that no research is done in order to identify the specific component of cost i.e. employee cost with special reference to Indian corporate sectors, in this way present study fulfills the research gap.

## 3. Objective and Hypotheses of the Study

### *3.1. Objective of the Study*

The main objective of the study is:

- To identify the pattern of employee cost in the Indian corporate sector.

### *3.2. Hypotheses of the Study*

In the present research work, employee cost has been calculated in terms of percentage of sales and the percentage of total expenditure for the corporate sector in India. The entire calculation of sample units of different Indian corporate industries are divided into two parts: employee cost as a percentage of sales and employee cost as a percentage of total expenditure. In order to identify the difference in ratios of these different sectors simultaneously, their blocks of 5 years (2005-2009, 2010-2014, 2015-2019) have been created. In order to identify the significance of these ratios the following hypotheses have been developed.

$H_{01}$: There is no significant difference among different sectors of the Indian corporates and block of 5 years as regarded to employee cost to sales ratio.

$H_{02}$: There is no significant difference among different sectors of Indian corporates and block of 5 years as regarded to employee cost to total expenditure ratio.

## 4. Research Methodology

### 4.1. Statistical Tools and Techniques

To identify the pattern of employee cost in terms of percentage of sales and the percentage of total expenditure in the Indian corporate sector, descriptive statistics has been used. For the testing of hypotheses, the ANOVA test has been applied.

### 4.2. Period of Study

The period of the study for the present research work has been taken from 2005-2006 to 2018-19. The data of 15 years have been considered for the study. Generally, economic conditions are changed within a period of 5 years. To keep this fact in mind, data have been analyzed in their segment period i.e., 2005 to 2009, 2010 to 2014 and 2015 to 2019.

### 4.3. Source of Data

This study is based on secondary data sources that have been taken from the ACE knowledge portal (ACEKP) database available in MLS University central library Udaipur.

### 4.4. Sample Design

After an intensive examination of 900 companies on the ACEKP portal, only 750 companies have complete data set of 15 years. Consequently, only these companies are taken into account for the study. These companies are then classified on the basis of sectors. Later on for this study only nine sectors are selected from different sectors using random sampling technique. After selecting the sectors, all companies from nine sectors till 2019 have been selected for the sample for the present research work.

**Table 1: Sectors Composition of the Sample**

| *S. No.* | *Sector* | *Sample* | | |
|---|---|---|---|---|
| | | *Size* | *Proportion of total companies* | *Final sample Size* |
| 1. | Chemical | 37 | 30% | 35 |
| 2. | Consumer Food | 26 | 30% | 26 |
| 3. | Electronic Equipment | 15 | 30% | 14 |
| 4. | Hotel | 15 | 30% | 13 |
| 5. | Household | 07 | 30% | 06 |
| 6. | IT | 36 | 30% | 29 |
| 7. | Pharma | 40 | 30% | 38 |
| 8. | Telecom | 04 | 30% | 04 |
| 9. | Textile | 45 | 30% | 40 |
| | Total | 225 | | 205 |

*Source:* Authors' Own Compilation

The value of sample units is obtained from the formula of Z. The percentage of sample units was calculated (which came from the formula) to total companies in all sectors. Based on this percentage value of all the sample companies of individual sectors have been selected based on the random sampling method. The 9 sectors selected for this research purpose are: Chemical, Consumer Food, Electronic Equipment, Hotel, Household, IT, Pharma, Telecom and Textile. In the process of data sanitization few companies were eliminated.

Looking at the table out of all 225 sample companies, only 205 companies have been selected for the present research work on different grounds like the financial year ending of few companies were not the same, some had not prepared the financial statements till March and other has not prepared financial statement for complete 12 months. Therefore 20 companies were removed from the sample units to maintain uniformity in the companies.

## 5. Data Analysis and Discussion

To identifying the pattern of employee cost in terms of percentage of sales and percentage of total expenditure in Indian corporate sector, Average and Coefficient of Variation (CV) have been calculated. Table 2 gives an idea about the employees' costs of all sectors in terms of percentage of sales and the percentage of total expenditure in the Indian corporate sector. For checking consistency in the variation of employee cost, CV for all sectors has been calculated.

**Table 2: Employee Cost of Indian Corporate Sector**

| *Sector* | *Employee Cost to Sales* | | *Employee Cost to Total Expenditure* | |
|---|---|---|---|---|
| | *%* | *C. V. (%)* | *%* | *C. V. (%)* |
| Chemical | 10.02 | 31.10 | 9.09 | 15.16 |
| Consumer Food | 9.43 | 38.53 | 7.31 | 17.89 |
| Electric Equipment | 8.45 | 20.38 | 8.69 | 12.49 |
| Hotel | 20.29 | 18.76 | 25.70 | 12.24 |
| Household | 12.26 | 29.19 | 12.38 | 29.00 |
| IT | 46.20 | 11.78 | 45.15 | 7.38 |
| Pharma | 13.84 | 29.62 | 12.79 | 22.66 |
| Telecom | 11.58 | 29.73 | 12.33 | 26.85 |
| Textile | 15.96 | 29.82 | 10.98 | 19.75 |
| Average | 16.45 | | 16.05 | |

*Note:* All values are derived on the basis of 15 years data (2005 to 2019)
*Source:* Authors' Own Computation through MS – EXCEL 2013

Table 2 shows the average and CV of employee cost to sales ratio and employee cost to total expenditure ratio for all selected corpoarate sectors in the India. It has been observed that the IT sector has reported the highest employee cost to sales ratio i.e., 46.20%. It indicates that among all

selected sectors IT sector is the highest salaries and wages paying sector. As far as consistency is concerned, the IT sector has also shown consistency in paying wages and salaries. As the CV of this sector has reported to be the lowest (11.78%) when compared to all other selected sectors which clearly indicates that there is a less variation in data of IT sector during the last 15 years. The lowest employee cost to sales ratio is reported by the Electric Equipment sector i.e., 8.45% which indicates that the Electric Equipment sector is the lowest salaries and wages paying sector among all other selected sectors. As far as consistency is concerned, the CV of this sector has been reported as 20.38% indicating less consistency in paying wages and salaries as compared to IT Sector.

Table 2 shows that the entire corporate sector's employee cost to sales ratio is reported 16.45%. But the IT sector's employee cost is reported 46.2%, which means the IT sector is paying wages and salaries approximately, three times the average of the entire Indian corporate sector consistently throughout 15 years. Table 2 also revealed a very thin line between the employee cost to sales ratio (16.45) and employee cost to total expenditure ratio (16.05) of the Indian corporate sector. It is a clear indication of very less profit margin by the Indian corporate sector .

Table 2 also revealed that the average and CV of employee cost to total expenditure ratio for all selected sectors in the Indian corporate sector. It has been observed that the IT sector has reported the highest employee cost to total expenditure ratio i.e., 45.15%. It indicates that the IT sector is the highest salaries and wages paying sector among all other selected sectors. As far as consistency is concerned, the IT sector has shown consistency in paying wages and salaries as the CV of this sector has reported the lowest (7.38%) compared to other selectedsectors. It also indicates that there is less variation in data of IT sector for the last 15 years. The lowest employee cost to total expenditure ratio is reported by the Consumer Food sector, i.e., 7.31% which indicates that the Consumer Food sector is the lowest salaries and wages paying sector among all other selectedsectors. As far as consistency is concerned, the Consumer Food sector has shown less consistency in paying wages and salaries as compared to IT sector as the CV of this sector has reported (17.89%) is comparatively high. Table 3 shows a summary of the employee cost to sales ratio and total expenditure ratio highest and lowest values of average and CV.

**Table 3: Lowest and Highest Values at a Glance**

| | *Average* | | *C.V.* | |
|---|---|---|---|---|
| | *Employee Cost to Sales Ratio (%)* | *Employee Cost to Total Expenditure Ratio (%)* | *Employee Cost to Sales (%)* | *Employee Cost to Total Expenditure (%)* |
| Highest | IT (46.20) | IT (45.15) | Consumer Food (38.53) | Household (29) |
| Lowest | Electric Equipment (8.45) | Consumer Food (7.31) | IT (11.78) | IT (7.38) |

*Source:* Authors' Own Computation through MS – EXCEL 2013

### *5.1. Five-year Block-wise Analysis*

The table 4 & 5 explain five years of block-wise analysis, which is created by dividing 15 years into three blocks, each includes 5 years. This block-wise analysis is including employee cost to sales ratio and employee cost to total expenditure ratio.

**Table 4: Employee Cost to Sales Ratio (5 Years Average wise)**

| *Sector* | *2005 to 2009 Average* | *2010 to 2014 Average* | *2015 to 2019 Average* | *2005 to 2019 Average* |
|---|---|---|---|---|
| Chemical | 9.78 | 7.59 | 12.69 | 10.02 |
| Consumer Food | 8.76 | 8.96 | 10.56 | 9.43 |
| Electric Equipment | 7.04 | 7.96 | 10.34 | 8.45 |
| Hotel | 16.32 | 20.29 | 24.27 | 20.29 |
| Household | 8.59 | 12.02 | 16.16 | 12.26 |
| IT | 42.44 | 46.97 | 49.19 | 46.20 |
| Pharma | 9.24 | 14.60 | 17.67 | 13.84 |
| Telecom | 8.07 | 13.86 | 12.81 | 11.58 |
| Textile | 13.88 | 13.35 | 20.66 | 15.96 |

ANOVA

| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
|---|---|---|---|---|---|---|
| Rows | 4412.148 | 8 | 551.5185 | 252.8709 | 2.97E-21 | 2.355081 |
| Columns | 141.1471 | 3 | 47.04905 | 21.57196 | 5.36E-07 | 3.008787 |
| Error | 52.34467 | 24 | 2.181028 | | | |
| Total | 4605.64 | 35 | | | | |

*Source:* Authors' Own Computation

Table 4 shows five years block of employee cost to sales for all selected sectors in the Indian corporate industry. An ANOVA test has been applied for testing of the hypothesis, "There is no significant difference among different sectors of Indian Corporate industries and block of 5 years as regarded to employee cost to sales ratio". It is observed from Table 4 that the calculated F-value at 8 degree of freedom for sectors (252.8709) and F-value at 3 degree of freedom for the block of 5 years (21.57196). Both calculated values are very high than the tabulated value at 5% significance level and P-value is less than 0.05 for both sectors and block of years hence, $H_{01}$ is rejected. It indicates a significant difference among different sectors of Indian corporate industries and block of 5 years as regarded to employee cost to sales ratio. It is revealed from our statistical analysis that employee cost to sales ratio are not the same each sector and for every block of 5 years. The figure 1 represents a graphical presentation of the 5-year block-wise analysis of employee cost to sales ratio.

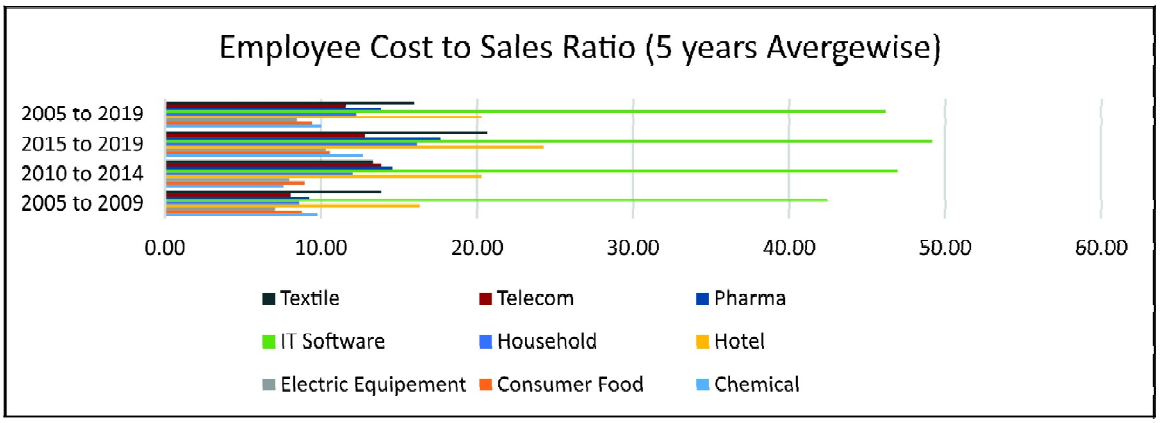


**Figure 1: Employee Cost to Sales Ratio (5 years Avergewise)**

*Source:* Authors' Own Compilation

**Table 5: Employee Cost to Total Expenditure Ratio (5 Years Average wise)**

| *Sector* | *2005 to 2009 Average* | *2010 to 2014 Average* | *2015 to 2019 Average* | *2005 to 2019 Average* |
|---|---|---|---|---|
| Chemical | 8.41 | 8.12 | 10.74 | 9.09 |
| Consumer Food | 6.42 | 7.08 | 8.44 | 7.31 |
| Electric Equipment | 7.89 | 8.58 | 9.62 | 8.69 |
| Hotel | 22.14 | 26.14 | 28.82 | 25.70 |
| Household | 8.94 | 11.92 | 16.30 | 12.38 |
| IT | 46.07 | 46.38 | 43.00 | 45.15 |
| Pharma | 9.86 | 12.36 | 16.16 | 12.79 |
| Telecom | 8.98 | 14.79 | 13.22 | 12.33 |
| Textile | 8.81 | 10.54 | 13.58 | 10.98 |

ANOVA

| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
|---|---|---|---|---|---|---|
| Rows | 4730.038 | 8 | 591.2548 | 253.119 | 2.94E-21 | 2.355081 |
| Columns | 58.62106 | 3 | 19.54035 | 8.365318 | 0.000556 | 3.008787 |
| Error | 56.06105 | 24 | 2.335877 | | | |
| Total | 4844.72 | 35 | | | | |

*Source:* Authors' Own Computation

Table 5 shows five years block of employee cost to total expenditure for all selected sectors in the Indian corporate industry. For testing of the hypothesis "There is no significant difference among

different sectors of Indian corporate industries and block of 5 years as regarded to employee cost to total expenditure ratio", ANOVA test has been applied. It is observed from Table 5 that the calculated F-value at 8 degree of freedom for sectors (253.119) and calculated F-value at 3 degree of freedom for the block of 5 years (8.365). Both calculated values are very high than the tabulated value at 5% significance level and P-value is less than 0.05 for both sectors and block of years, hence $H_{02}$ is rejected. It indicates a significant difference among different sectors of Indian corporate sector and block of 5 years with respect to employee cost to total expenditure ratio. It is also revealed through our statistical analysis that each sector and every block of 5 years of employee cost to total expenditure ratio are not the same and the difference is significant. The figure 2 represents a graphical presentation of the 5-year block-wise analysis of employee cost to total expenditure ratio.

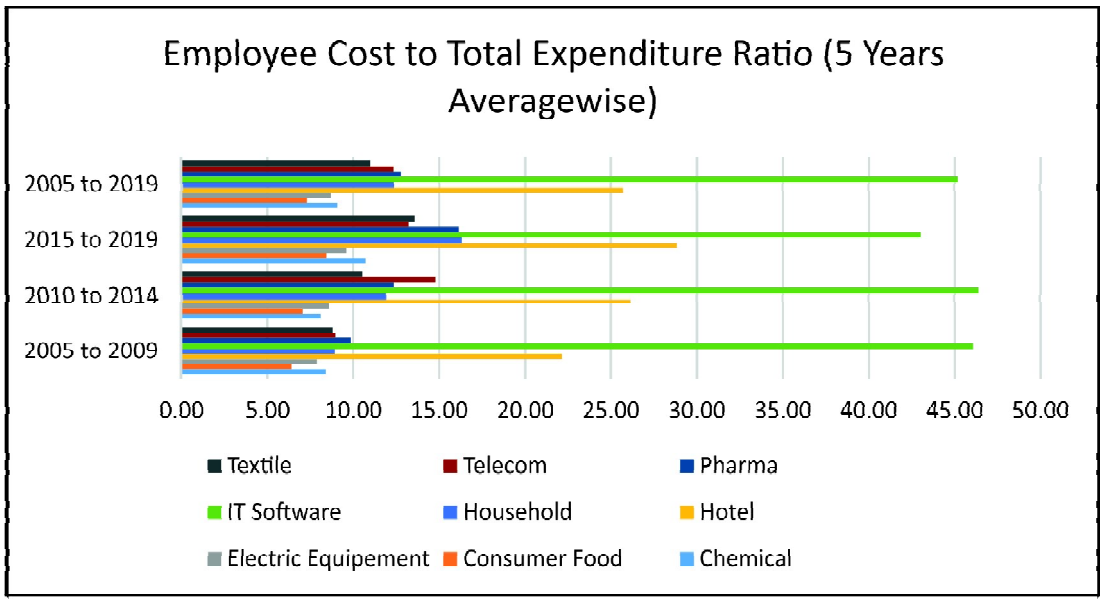


**Figure 2: Employee Cost to Sales Ratio (5 years Averagewise)**

*Source:* Authors' Own Compilation

## 6. Findings

The IT sector has reported the highest employee cost to sales ratio i.e., 46.20%. It indicates that the IT sector is the highest salaries and wages paying sector among all other selected sectors. As far as consistency is concerned, the IT sector has shown consistency in paying wages and salaries. As the CV of this industry has reported the lowest (11.78%) when compared to other selectedsectors. It also indicates that there is less variation in data of IT sector during the last 15 years.

The lowest employee cost to sales ratio is reported by the Electric Equipment sector i.e., 8.45% which point out that the Electric Equipment sector is the lowest salaries and wages paying sector

among all other selected sectors. As far as consistency is concerned,the CV value of Electric Equipment sector has reported (20.38%) which explains the less consistency in paying wages and salaries as compared to IT Sector.

It has been observed that the IT sector has reported the highest employee cost to total expenditure ratio i.e., 45.15% which signify that the IT sector is the highest salaries and wages paying sector among all other selected sectors. As far as consistency is concerned, the IT sector has shown consistency in paying wages and salaries. As the CV of this sector has reported the lowest (7.38%) when compared to other selected sectors. It also indicates that there is less variation in data of IT sector for the last 15 years.

The lowest employee cost to total expenditure ratio is reported by the Consumer Food sector i.e., 7.31% which portrays that the Consumer Food sector is the lowest salaries and wages paying sector among all other selectedsectors. As far as consistency is concerned, the CV of the Consumer Food sector has reported (17.89%) which elucidate less consistency in paying wages and salaries as compared to IT Sector.

The entire corporate sector's employee cost to sales ratio is reported at16.45%. But the IT sector's employee cost is reported 46.2%, which means that IT sector is paying wages and salaries approximately, three times the average of the Indian corporate sector consistently throughout the 15 years.

Results of statistical analysis shows that both hypotheses are rejected i.e., "There is no significant difference among different sectors of Indian corporate industries and block of 5 years as regarded to Employee Cost to Sales Ratio and Total Expenditure Ratio." In other words there is a significant difference among different Indian corporate industries and a block of 5 years as regarded to Employee Cost to Sales Ratio and Total Expenditure Ratio.

## 7. Conclusion

Employees are the backbone of any company. Employees plays a significant role in the growth of the business. Due to pandemic Covid- 19, entire corporate sector across the globe is under pressure to maintain the product's optimal cost. In this sequence, most of the companies are focused on reducing employee cost by cutting their salary, retrenchment, and restricted the perquisites. The objective of this present study is to identify the pattern of employee cost in the Indian corporate sector. For achieving this objective, descriptive statistics and ANOVA test has been used. The results of this study is clearly indicating that the IT sector is paying the highest and consistent wages and salaries among all sector during the last 15 years. The results also find that the entire corporate sector employee cost to sales ratio average is 16.45%. The IT sector's employee cost is shown 46.2%, which means the IT sector pays wages and salaries approximately three times the average of Indian corporate industry's throughout the 15 years. Statistical results paves the way to conclude that there is a significant difference among different sectors of Indian corporate industries in terms of paying wages & salaries. Also, there is a significant difference between a block of 5 years with respect to employee cost to sales ratio and total expenditure ratio.The present research will provide insightful information for policymakers to lessen the attrition rate by analyzing the employee cost component in cost structure, italso gives room to companies to decide upto what extent of employee cost can be increased. From an employment

point of view, the IT sector is an attractive sector which provides the highest wages consistently over the selected years.

## References

Anand, M., Sahay, B. S., & Saha, S. (2005). Cost Management Practices in India: An Empirical Study. *ASCI Journal of Management, 33*(1 & 2), 1 - 15.

Kathuria, R., Kedia, M., & Sekhani, R. (2019). A Study of the Financial Health of the Telecom Sector. *Indian Council for Research on International Economic Relations*, 1 - 40.

Kumar, S., & Sreeramulu, M. (2007). Employees' Productivity and Cost – A Comparative Study of Banks in India During 1997 to 2008. *Reserve Bank of India Occasional Papers, 28*(3), 35-50.

Nurlina, N. (2020). Implications of Internal Company Factors and Intrinsic Motivation on Employee Performance. *Journal Management Business*, *8*(1), 33 - 46.

Pratt, M., Boudhane, M., & Cakula, S. (2021). Predictive data analysis model for employee satisfaction using ML algorithms. *Advances on Smart and Soft Computing,* pp. 143-152.

Pudi, P. (2018). A study on financial analysis through comparative statements - with special reference to HPCL. *International Journal of Commerce and Management Research, 4*(2), 49-55.

Rajasekhar, R. (2017). Financial Performance Evaluation of Construction Industries. *International Journal of Scientific and Research Publications, 7*(1), 158-174.

Rao, Y. V., Basheer A. & Beg A., (2015). Cost and Management Accounting Practices: A Survey of Manufacturing Companies in India. *International Journal of Research and Development - A Management Review (IJRDMR), 4*(4).

Srivastava, D.K., & Nair P. (2018) Employee Attrition Analysis Using Predictive Techniques. *Information and Communication Technology for Intelligent Systems* (ICTIS 2017) - Volume 1. ICTIS 2017.

Tomic, I., Tesic Z., Kuzmanovic B. & Tomic M. (2018) An empirical study of employee loyalty, service quality, cost reduction and company performance, *Economic Research-EkonomskaIstraživanja*, 31(1), 827-846.

Promoting Research

**Orissa Journal of Commerce**
Vol. 42, Issue 4, October-December 2021
ISSN: 0974-8482

*URL: www.ojcoca.org*
*DOI: https://doi.org/10.54063/ojc.2021.v42i04.10*

# Study on the Growth of Indian Telecom Sector: Evidence from Post-Liberalization Period

**Ashima Mangla[1*] and Manjinder Singh[2]**
[1]*Associate Professor, Post Graduate Department of Economics, Sri Guru Gobind Singh College, Chandigarh, Punjab.*
*E-mail: ashima.mangla@yahoo.in*
[2]*Associate Professor, Post Graduate Department of Commerce, Sri Guru Gobind Singh College, Chandigarh, Punjab.*
*E-mail: mssaini77@yahoo.co.in*
[*]*Corresponding Author*

**To cite this paper**

Mangla, A., & Singh, M. (2021). Study on the Growth of Indian Telecom Sector: Evidence from Post-Liberalization Period. *Orissa Journal of Commerce*. 42(4), 130-145.

**Keywords**

Indian telecom sector, Privatization, Telecom revolution, Subscribers, Teledensity, Service providers

**JEL Classification**

L51, L52, L86, L88, L96

**Abstract:** The Indian government has taken major steps towards privatization and liberalization of the telecom sector since 1991. As a result, this sector has made tremendous progress by adopting advanced technology and allowing the participation of private telecom operators. The present study highlights the current scenario of Indian telecom sector and examines its growth in the last three decades from 1991 to 2020. For the study, secondary data is used from various sources and descriptive statistical tools are used for the analysis- annual growth rates, compound annual growth rates and percentage shares. The study concludes that there has been a continuous increase in the subscriber base, overall teledensity in both rural and urban areas, number of broadband subscribers and internet subscribers. The share of the public sector has come down, while the share of the private sector has increased remarkably. It is recommended that the Indian government should make the regulatory and policy framework more adaptable to the fast-changing needs of the telecom sector.

## 1. Introduction

The Indian telecom industry is called as "sunrise industry". It has contributed 6.5% of India's GDP and provided 2.2 million direct jobs and 1.8 million indirect jobs to the people across both organized and unorganized sectors (GSMA 2016). The Indian telecom market has the second-largest subscriber base and has the second-highest number of internet users in the world after China. This spectacular growth of the Indian telecom sector is due to many factors such as affordable tariffs, wider service availability, roll out of new services such as Mobile Number Portability (MNP), 3G and 4G services, evolving consumption patterns of subscribers and conducive regulatory environment (TRAI).

Today telecom tariff in India is one of the lowest in the world, which has immensely benefited Indian customers. In the modern era, services like banking, health, education, governance, infotainment, etc. are becoming increasingly linked through mobile phones. The digital payments ecosystem is also

growing as India is becoming a digital economy. Social networking (such as WhatsApp and Facebook) and e-commerce services are gaining popularity. With upcoming advancements in technology to 4G mobile data services, the average data consumption per user per month has increased from 239 MB in 2016 to 11 GB in 2020 (TRAI 2020).

Since independence, the Indian telecom sector was a regulated sector and until 1990, the government was reluctant to allow private investment in it. In 1990s, the Indian telecom market was perceived as a promising market, so the government decided to open the value-added services such as cellular, paging, e-mail, video conferencing and data communication services etc. to private sector participation and provided easy market access for telecom equipment and a fair regulatory framework for offering telecom services. Subsequently, foreign direct investment was also liberalized considerably and even the basic telecom services were opened to foreign companies. In 2005, the government allowed 74% FDI into the telecom sector. In 2013, the government further allowed 100% foreign investment. Thus, liberalization and privatization of the Indian telecom market have resulted in huge inflows of FDI and increased competition with the participation of international telecom operators. The present study investigates the impact of liberalization and privatization on the growth and structure of the Indian telecom sector.

## 2. Review of Literature

Clark and Petrazzini (1996) observe that both deregulation and privatization policies adopted by 26 developing countries in their telecom sector have brought marked improvements in the level and growth of teledensity and increased employment opportunities. Vittal (1997) describes that in India, there is a paradigm shift in the financing of telecom infrastructure from the public sector to private and foreign sectors, from a culture of state monopoly and scarce telecommunication services to a culture of competition and plenty of telecommunication services. Fink *et al.* (2001) examine the liberalization of the telecom sector in 12 developing Asian countries over the period 1985-1999. The econometric analysis carried out in the study supports the positive contribution of liberal policy to the performance of telecommunication services in developing Asian countries. Gupta (2002) discusses that the overall liberalisation trend of the telecom sector shows the changed mind-set of the government from a closed regime to a pro-competitive regime. Kathuria (2004) observes that the introduction of competition along with the new forms of institutional and regulatory policy design has brought significant improvement in the telecom services in India. Ramachandran (2005)analyses that several socio-demographic factors are responsible for the exponential growth of Indian telecom sector such as high GDP growth, booming knowledge sector, increasing income levels and growing urbanization. Shanthi (2005) highlights that the various initiatives taken by the government namely liberalization, privatization and de-monopolization have intensified the competition among the various telecom players. Arindham (2006) examines the rising interest of foreigners for investment in the Indian telecom industry by conducting several case studies like Vodafone, Maxis, Telekom Malaysia, Tata tele etc.

According to Chhiber (2008), the mobile telephony is rapidly evolving in the world as more and more people demand mobile services with longer bandwidth and innovative services with features like T.V., multimedia, interoperability, and seamless connectivity with all types of protocols and standards. Preetha (2011) observes that liberal policies of the government, transparent regulatory framework and

participation of both public and private sectors have encouraged FDI inflows in the Indian telecom sector and this sector is growing at the rate of 45% in the recent years. Fathima *et al.* (2013) reveal that the telecom operators, academic institutes, and the Government of India are making continuous efforts by setting the Telecom Centres of Excellence (COE) to strengthen R&D in telecom infrastructure and bridge the digital divide between urban and rural areas of the country. Muthusamy *et al.* (2015) observe that the Indian telecom industry is growing at a rapid rate due to the adoption of liberalization policies and consequently increased participation of the private sector since 1991. Gourav (2017) observes that due to favourable regulatory policies adopted by the government and 4G services hitting the market, the Indian telecom sector is expected to transform from being an import-centric industry to a global telecom equipment manufacturing hub in the next few years.

## 3. Objectives of the Study

This study has the following objectives:

- To study the current status of Indian telecom sector.
- To examine the growth and structure of telecom sector in India on various aspects such as subscriber base, teledensity, broadband & internet subscribers, public & private service providers in both wireline and wireless segments from 1991 to 2020.

## 4. Research Methodology

### *4.1. Data Sources*

For the study, secondary data is collected from the annual reports of Department of Telecommunication, Telecom Regulatory Authority of India (TRAI), Cellular Operators Association of India (COAI), International Telecommunication Union (ITU), Ministry of Statistics and Programme Implementation.

### *4.2. Methodology*

To study the specified objectives, tabular analysis is done and descriptive statistical tools have been used such as year-wise annual growth rates, compound annual growth rates and percentage shares.

The Annual Growth Rate is computed by using the following formula:

$$AGR = [(X_2 - X_1)/ X_1] *100$$

Where $X_1$ = first value of variable X and $X_2$ = second value of variable X

Compound Annual Growth Rate is computed by using the following formula:

$$CAGR = [\{(V_n/V_0)^{1/n}\}-1] *100$$

Where $V_0$: start value;$V_n$: end value; n: number of years.

The Percentage formula is given as:

$$Percentage = (Value/ Total\ Value) *100$$

## 5. Data Analysis and Interpretation

This research study gives an insight into the present status of the Indian telecom industry and examines its growth in the last three decades on following aspects-

### *5.1. Subscriber Base*

The telecom services opted by customers constitute the subscriber base. There are two main types of telecom services in India - Wireline/ Fixed-line Telephone Services and Wireless/ Cellular Telephone Services. Wireline communication uses a metal wire or optical fibre for the transmission of information, whereas wireless communication technologies use radio waves for transmission of information Over-the-Air (OTA). Table 1 depicts the telephone network and its growth in India for the period 1991-2020.

**Table 1: Telephone Network in India (In millions)**

| *Year* | *Wireline Subscribers* | *Annual growth rate of Wireline Subscribers (%)* | *Wireless Subscribers* | *Annual growth rate of Wireless Subscribers (%)* | *Total Subscribers* | *Annual growth rate of Total Subscribers (%)* | *Percentage share of Wireline Subscribers (%)* | *Percentage share of Wireless Subscribers (%)* |
|---|---|---|---|---|---|---|---|---|
| 1991 | 5.07 | - | 0 | - | 5.07 | - | 100 | 0 |
| 1992 | 5.81 | 14.60 | 0 | - | 5.81 | 14.60 | 100 | 0 |
| 1993 | 6.80 | 17.04 | 0 | - | 6.80 | 17.04 | 100 | 0 |
| 1994 | 8.03 | 18.09 | 0 | - | 8.03 | 18.09 | 100 | 0 |
| 1995 | 9.80 | 22.04 | 0 | - | 9.80 | 22.04 | 100 | 0 |
| 1996 | 11.98 | 22.24 | 0.08 | - | 12.06 | 23.06 | 99.34 | 0.66 |
| 1997 | 14.54 | 21.37 | 0.34 | 325.00 | 14.88 | 23.38 | 97.72 | 2.28 |
| 1998 | 17.80 | 22.42 | 0.88 | 158.82 | 18.68 | 25.54 | 95.29 | 4.71 |
| 1999 | 21.59 | 21.29 | 1.20 | 36.36 | 22.79 | 22.00 | 94.73 | 5.27 |
| 2000 | 26.51 | 22.79 | 1.88 | 56.67 | 28.39 | 24.57 | 93.38 | 6.62 |
| 2001 | 32.45 | 22.41 | 3.58 | 90.43 | 36.03 | 26.91 | 90.06 | 9.94 |
| 2002 | 38.54 | 18.77 | 6.68 | 86.59 | 45.22 | 25.51 | 85.23 | 14.77 |
| 2003 | 41.33 | 7.24 | 13.30 | 99.10 | 54.63 | 20.81 | 75.65 | 24.35 |
| 2004 | 40.09 | -3.00 | 33.69 | 153.31 | 73.78 | 35.05 | 54.34 | 45.66 |
| 2005 | 41.42 | 3.32 | 52.22 | 55.00 | 93.64 | 26.92 | 44.23 | 55.77 |
| 2006 | 41.54 | 0.29 | 90.14 | 72.62 | 131.68 | 40.62 | 31.55 | 68.45 |
| 2007 | 40.77 | -1.85 | 165.11 | 83.17 | 205.88 | 56.35 | 19.80 | 80.20 |
| 2008 | 39.41 | -3.34 | 261.08 | 58.12 | 300.49 | 45.95 | 13.12 | 86.88 |
| 2009 | 37.97 | -3.65 | 391.76 | 50.05 | 429.73 | 43.01 | 8.84 | 91.16 |
| 2010 | 36.96 | -2.66 | 584.32 | 49.15 | 621.28 | 44.57 | 5.95 | 94.05 |
| 2011 | 34.73 | -6.03 | 811.59 | 38.89 | 846.32 | 36.22 | 4.10 | 95.90 |
| 2012 | 32.17 | -7.37 | 919.17 | 13.26 | 951.34 | 12.41 | 3.38 | 96.62 |

*contd. table 1*

| Year | Wireline Subscribers | Annual growth rate of Wireline Subscribers (%) | Wireless Subscribers | Annual growth rate of Wireless Subscribers (%) | Total Subscribers | Annual growth rate of Total Subscribers (%) | Percentage share of Wireline Subscribers (%) | Percentage share of Wireless Subscribers (%) |
|---|---|---|---|---|---|---|---|---|
| 2013 | 30.21 | -6.09 | 867.81 | -5.59 | 898.02 | -5.60 | 3.36 | 96.64 |
| 2014 | 28.50 | -5.66 | 904.52 | 4.23 | 933.02 | 3.90 | 3.05 | 96.95 |
| 2015 | 26.60 | -6.67 | 969.89 | 7.23 | 996.49 | 6.80 | 2.67 | 97.33 |
| 2016 | 25.22 | -5.19 | 1033.63 | 6.57 | 1058.85 | 6.26 | 2.38 | 97.62 |
| 2017 | 24.40 | -3.25 | 1170.18 | 13.21 | 1194.58 | 12.82 | 2.04 | 97.96 |
| 2018 | 22.81 | -6.52 | 1183.41 | 1.13 | 1206.22 | 0.97 | 1.89 | 98.11 |
| 2019 | 21.70 | -4.87 | 1161.71 | -1.83 | 1183.41 | -1.89 | 1.83 | 98.17 |
| 2020 | 20.22 | -6.82 | 1157.75 | -0.34 | 1177.97 | -0.46 | 1.72 | 98.28 |
| | **CAGR** | **4.72%** | | **46.70%** | | **19.91%** | | |

*Source:* Authors' Own Compilation.

The total subscriber base in India grew from 5.07 million in 1991 to 1177.97 million in 2020, registering a Compound Annual Growth Rate (CAGR) of 19.91%. The annual growth rate of total subscribers over previous years is always positive, except for the year 2012-13, when the growth rate was -5.6% due to the removal of inactive mobile telephone connections by the service providers on the guidelines issued by TRAI. "Such a phenomenal growth can be attributed primarily to the country's large population, high economic growth, reduced tariffs, affordable handsets, infrastructure sharing among the service providers and the introduction of regulatory reforms by the Indian Government" **(**DoT). The marginal decline in the number of total subscribers is also reported in the recent years 2019 and 2020.

### *5.1.1. Wireline Telephone Subscribers*

The wireline subscriber base has increased from 5.07 million in 1991 to 41.54 million in 2006 but thereafter started declining and reached 20.22 million in 2020. The annual growth rate of wireline subscribers was positive from 1991-2006, but 2007 onwards it became negative showing declining preferences of the people for fixed-line telephones. The CAGR of the wireline subscribers for the period 1991-2020 is 4.72%.

### *5.1.2. Wireless Telephone Subscribers*

Wireless telephone segment has been the key contributor to spectacular growth in the telephone network in India. The number of wireless subscribers has increased from 0.08 million in 1996 to 1157.75 million in 2020, thereby making India the second-largest wireless telecom market in the entire world after China. The highest growth rate has been observed as 325% in 1996-97 and the lowest growth rate as -5.59% in 2012-13 due to the reasons already cited earlier. The CAGR of the wireless subscribers

for the period 1996-2020 is 46.70%. In the present era, wireless telephones are preferred over wireline telephones due to the portability and convenience of wireless telephones.

The percentage share of wireless telephones has grown from 0% in 1991 to 98.28% in 2020, while the share of wireline phones has declined from 100% in 1991 to just 1.72% in 2020. Thus, the dominance of wireline technology in 1991 has been taken over by wireless technology in 2020.

### *5.2. Teledensity*

Teledensity represents the number of telephone connections per hundred individuals living within an area. The analysis of rural teledensity, urban teledensity and overall teledensity of India is depicted in Table 2.

**Table 2: Teledensity in India (In percentage)**

| *Year* | *Rural Teledensity* | *Annual growth rate of Rural Teledensity* | *Urban Teledensity* | *Annual growth rate of Urban Teledensity* | *Overall Teledensity* | *Annual growth rate of Overall Teledensity* |
|---|---|---|---|---|---|---|
| 1991 | NA | - | NA | - | 0.6 | - |
| 1992 | NA | - | NA | - | 0.67 | 11.67 |
| 1993 | NA | - | NA | - | 0.77 | 14.93 |
| 1994 | NA | - | NA | - | 0.89 | 15.58 |
| 1995 | NA | - | NA | - | 1.07 | 20.22 |
| 1996 | 0.29 | - | 3.95 | - | 1.28 | 19.63 |
| 1997 | 0.34 | 17.24 | 4.76 | 20.51 | 1.56 | 21.88 |
| 1998 | 0.43 | 26.47 | 5.78 | 21.43 | 1.94 | 24.36 |
| 1999 | 0.52 | 20.93 | 6.87 | 18.86 | 2.33 | 20.1 |
| 2000 | 0.68 | 30.77 | 8.23 | 19.8 | 2.86 | 22.75 |
| 2001 | 0.93 | 36.76 | 10.37 | 26 | 3.58 | 25.17 |
| 2002 | 1.21 | 30.11 | 12.2 | 17.65 | 4.29 | 19.83 |
| 2003 | 1.49 | 23.14 | 14.32 | 17.38 | 5.11 | 19.11 |
| 2004 | 1.55 | 4.03 | 20.79 | 45.18 | 7.02 | 37.38 |
| 2005 | 1.73 | 11.61 | 26.88 | 29.29 | 8.95 | 27.49 |
| 2006 | 2.34 | 35.26 | 38.28 | 42.41 | 12.74 | 42.35 |
| 2007 | 5.89 | 151.71 | 48.1 | 25.65 | 18.22 | 43.01 |
| 2008 | 9.46 | 60.61 | 66.39 | 38.02 | 26.22 | 43.91 |
| 2009 | 15.11 | 59.73 | 88.84 | 33.82 | 36.98 | 41.04 |
| 2010 | 24.31 | 60.89 | 119.45 | 34.46 | 52.74 | 42.62 |
| 2011 | 33.83 | 39.16 | 156.94 | 31.39 | 70.89 | 34.41 |
| 2012 | 39.26 | 16.05 | 169.17 | 7.79 | 78.66 | 10.96 |

*contd. table 2*

| Year | Rural Teledensity | Annual growth rate of Rural Teledensity | Urban Teledensity | Annual growth rate of Urban Teledensity | Overall Teledensity | Annual growth rate of Overall Teledensity |
|---|---|---|---|---|---|---|
| 2013 | 41.05 | 4.56 | 146.64 | -13.32 | 73.32 | -6.79 |
| 2014 | 44.01 | 7.21 | 145.46 | -0.8 | 75.23 | 2.61 |
| 2015 | 48.37 | 9.91 | 148.61 | 2.17 | 79.38 | 5.52 |
| 2016 | 51.26 | 5.97 | 154.18 | 3.75 | 83.36 | 5.01 |
| 2017 | 56.98 | 11.16 | 171.52 | 11.25 | 92.98 | 11.54 |
| 2018 | 59.05 | 3.63 | 165.9 | -3.28 | 92.84 | -0.15 |
| 2019 | 57.50 | -2.62 | 159.66 | -3.76 | 90.10 | -2.95 |
| 2020 | 58.79 | 2.24 | 142.31 | -10.87 | 87.37 | -3.03 |
| | **CAGR** | **23.67%** | | **15.42%** | | **18.06%** |

*Note:* Data regarding Rural teledensity and Urban teledensity is not available for the years 1991-95.
*Source:* Authors' Own Compilation

According to annual reports of DoT, the teledensity of India started at a very low figure of 0.6 in 1991 and has shown a modest rise until 2005. From 2005 onwards, the teledensity of the country gained momentum and increased to 87.37 in March 2020. It is a significant testament to the growth of telecom services in India. The small dip in 2013 can be attributed to the guidelines issued by TRAI to service providers on 'de-activation of inactiveSIMs'. The highest annual growth rate of overall teledensity has been observed as 43.91% in 2007-08 and the lowest growth rate as -6.79% in 2012-13. The CAGR of overall teledensity is 18.06% for the period 1991-2020. Overall, there has been a phenomenalgrowth in the overall teledensity of India.

### *5.2.1. Rural Teledensity*

The teledensity of rural areas in the country, recorded as 0.29% in 1996 has also increased to 58.79% in 2020. The annual growth rate of rural teledensity is positive throughout the study period 1996-2020, though there was a marginal decline in 2018-19. The highest annual growth rate has been observed as 151.71% in 2006-07 and the lowest growth rate as -2.62% in 2018-19. The CAGR of rural teledensity is 23.67%. An increase in rural teledensity is due to several factors such as the introduction of mobile phones in rural areas, measures undertaken by the Indian government under Universal Service Obligation Fund (USOF) for extension of mobile networking in rural areas and new investments made by private service providers in rural areas due to the saturation of urban markets.

### *5.2.2. Urban Teledensity*

The urban teledensity of India has increased from 3.95% in 1996 to 142.31% in 2020. The highest annual growth rate of urban teledensity has been observed as 45.18% in 2003-04 and the lowest growth rate as -13.32% in 2012-13. The CAGR of urban teledensity is 15.42%.

Hence, there has been phenomenal growth in the overall teledensity, urban teledensity and rural teledensity of the country with the advancement of hi-tech wireless technologies. Despite these positive developments, there is a huge gap between urban and rural teledensity. The subscriber base has remained skewed in favour of urban areas and the urban teledensity (142.31) is around three times than that of rural teledensity (58.79). The slow growth of rural teledensity is because rural areas need massive investments, but the revenue prospects are not proportionate to the investments undertaken.

### *5.3. Broadband and Internet Subscribers*

In India, internet services were first launched in 1995 by state-owned company 'Videsh Sanchar Nigam Limited (VSNL)' and later in 1998, these services were opened to the private operators. There are two segments of the internet- Narrowband and Broadband. Narrowband Internet provides internet access with a capacity of less than 512 Kbit/s and Broadband Internet provides access with a minimum capacity of greater or equal 512 Kbit/s (ITU). The broadband policy was first announced by the Government of India in October 2004. The prevalence of broadband network allows people to access new employment opportunities; helps businessmen to discover new markets and improves efficiency and enhances the capacity of the government to provide services such as health, education, banking and commerce in the country. In rural and distant areas, broadband services help in increasing the productivity, provision of better infrastructure and improvement in the quality of life of people.

Table 3 presents a picture of broadband and total internet subscribers in India from 1995 to 2020.

**Table 3: Broadband and Internet Subscribers (In millions)**

| *Year* | *Broadband Subscribers* | *Annual Growth in Broadband Subscribers (%)* | *Total Internet Subscribers* | *Annual Growth in Total Internet Subscribers (%)* |
|---|---|---|---|---|
| Aug-95 | 0.00 | - | 0.01 | - |
| 1996 | 0.00 | - | 0.05 | 400.00 |
| 1997 | 0.00 | - | 0.09 | 80.00 |
| 1998 | 0.00 | - | 0.14 | 55.56 |
| 1999 | 0.00 | - | 0.28 | 100.00 |
| 2000 | 0.00 | - | 0.95 | 239.29 |
| 2001 | 0.00 | - | 3.04 | 220.00 |
| 2002 | 0.00 | - | 3.42 | 12.50 |
| 2003 | 0.00 | - | 3.64 | 6.43 |
| 2004 | 0.05 | - | 4.55 | 25.00 |
| 2005 | 0.18 | 260.00 | 5.54 | 21.76 |
| 2006 | 1.35 | 650.00 | 6.94 | 25.27 |
| 2007 | 2.34 | 73.33 | 9.27 | 33.57 |
| 2008 | 3.87 | 65.38 | 11.10 | 19.74 |

*contd. table 3*

| *Year* | *Broadband Subscribers* | *Annual Growth in Broadband Subscribers (%)* | *Total Internet Subscribers* | *Annual Growth in Total Internet Subscribers (%)* |
|---|---|---|---|---|
| 2009 | 6.22 | 60.72 | 13.54 | 21.98 |
| 2010 | 8.77 | 41.00 | 16.18 | 19.50 |
| 2011 | 11.89 | 35.58 | 19.67 | 21.57 |
| 2012 | 13.81 | 16.15 | 22.86 | 16.22 |
| 2013 | 15.05 | 8.98 | 164.81 | 620.95 |
| 2014 | 60.87 | 304.45 | 251.59 | 52.65 |
| 2015 | 99.20 | 62.97 | 302.35 | 20.18 |
| 2016 | 149.75 | 50.96 | 342.65 | 13.33 |
| 2017 | 276.52 | 84.65 | 422.20 | 23.22 |
| 2018 | 412.60 | 49.21 | 493.96 | 17.00 |
| 2019 | 563.31 | 36.53 | 636.73 | 28.90 |
| 2020 | 687.44 | 22.04 | 743.19 | 16.72 |
| | **CAGR** | **75.16%** | | **53.94%** |

*Source:* Authors' Own Compilation

The above table reflects that the number of broadband subscribers has increased considerably from 0.05 million in 2004 to 687.44 million in 2020. The highest annual growth rate of 650% is reported in 2005-06 and the lowest growth rate of 8.98% in 2012-13. The CAGR of broadband connections stands at 75.16%. There is a spectacular rise in the number of broadband subscribers in the year 2016 due to 4G connections launched by Reliance Jio. The total number of internet subscribers base has also shown a magnificent rise from just 0.01 million in 1995 to 743.19 million in 2020. The CAGR of internet connections during 1995-2020 stands at 53.94%.

Further, the number of broadband and internet subscribers was very limited in India until 2012. After 2012, the internet subscriber base in India (narrowband and broadband) has experienced significant growth. This growth is being driven by the growing popularity of broadband, increasing user comfort with internet-based applications, continuous fall in prices of mobile phones and cheaper internet access plans on the GSM network.

### *5.4. Public and Private Telephone Subscribers*

Since 1990s, there is a substantial structural transformation in the Indian telecom industry. Earlier this industry was completely state-owned but now the Government of India has taken several initiatives to encourage the private sector participation such as the removal of state monopolies, reduction in entry barriers to new firms, allowing 100% foreign direct investment (FDI) and promotion of competition among the service providers.

Table 4 displays the number of public and private telephone subscribers in India.

**Table 4: Public and Private Telephone Subscribers in India (In millions)**

| *Year* | *Public Subscribers* | *Annual Growth rate of public subscribers (%)* | *Private Subscribers* | *Annual Growth rate of private subscribers (%)* | *Total Subscribers* | *Percentage share of Public Sector (%)* | *Percentage share of Private Sector (%)* |
|---|---|---|---|---|---|---|---|
| 1997 | 14.54 | | 0.34 | | 14.88 | 97.72 | 2.28 |
| 1998 | 17.8 | 22.42 | 0.88 | 158.82 | 18.68 | 95.29 | 4.71 |
| 1999 | 21.59 | 21.29 | 1.22 | 38.64 | 22.81 | 94.65 | 5.35 |
| 2000 | 26.51 | 22.79 | 2.02 | 65.57 | 28.53 | 92.92 | 7.08 |
| 2001 | 32.44 | 22.37 | 3.85 | 90.59 | 36.29 | 89.39 | 10.61 |
| 2002 | 38.16 | 17.63 | 6.81 | 76.88 | 44.97 | 84.86 | 15.14 |
| 2003 | 43.17 | 13.13 | 11.45 | 68.14 | 54.62 | 79.04 | 20.96 |
| 2004 | 46.98 | 8.83 | 30.66 | 167.77 | 77.64 | 60.51 | 39.49 |
| 2005 | 52.08 | 10.86 | 46.33 | 51.11 | 98.41 | 52.92 | 47.08 |
| 2006 | 61.08 | 17.28 | 79.24 | 71.03 | 140.32 | 43.53 | 56.47 |
| 2007 | 71.4 | 16.9 | 134.46 | 69.69 | 205.86 | 34.68 | 65.32 |
| 2008 | 79.55 | 11.41 | 220.94 | 64.32 | 300.49 | 26.47 | 73.53 |
| 2009 | 89.55 | 12.57 | 340.18 | 53.97 | 429.73 | 20.84 | 79.16 |
| 2010 | 105.87 | 18.22 | 515.41 | 51.51 | 621.28 | 17.04 | 82.96 |
| 2011 | 126 | 19.01 | 720.33 | 39.76 | 846.33 | 14.89 | 85.11 |
| 2012 | 130.27 | 3.39 | 821.08 | 13.99 | 951.35 | 13.69 | 86.31 |
| 2013 | 130.11 | -0.12 | 767.91 | -6.48 | 898.02 | 14.49 | 85.51 |
| 2014 | 120.05 | -7.73 | 812.96 | 5.87 | 933.01 | 12.87 | 87.13 |
| 2015 | 100.34 | -16.42 | 895.79 | 10.19 | 996.13 | 10.07 | 89.93 |
| 2016 | 108.65 | 8.28 | 950.68 | 6.13 | 1059.33 | 10.26 | 89.74 |
| 2017 | 122.18 | 12.45 | 1072.81 | 12.85 | 1194.99 | 10.22 | 89.78 |
| 2018 | 131.66 | 7.76 | 1080.14 | 0.68 | 1211.8 | 10.86 | 89.14 |
| 2019 | 133.51 | 1.41 | 1049.90 | -2.80 | 1183.41 | 11.28 | 88.72 |
| 2020 | 135 | 1.12 | 1042.97 | -0.66 | 1177.97 | 11.46 | 88.54 |
| | **CAGR** | **9.73%** | | **39.73%** | | | |

*Source:* Authors' Own Compilation

The number of public subscribers has increased from 14.54 million in 1997 to 135 million in 2020, at CAGR of 9.73%. The number of private subscribers has shown a magnificent increase from 0.34 million in 1997 to 1042.97 million in 2020, growing at CAGR of 39.73%. This remarkable increase in the number of private subscribers is due to fierce competition among the private service providers

offering better telecom services at low tariffs. The highest growth rate of private subscribers is registered as 167.77% for the year 2003-04, while the lowest growth rate is registered as -6.48% in 2012-13. The share of the public sector in total connections has come down from 98% in 1997 to 11% in 2020, while the share of the private sector stands at 89% in 2020 as against a meager share of 2% in 1997.

Both public and private service providers share the wireline and wireless segments. There is fierce competition among the major telecom players due to which they have come up with new tariff plans and discount schemes to gain a competitive edge and get more and more subscribers for their services.

### *5.4.1. Wireless Service Providers*

There are many mobile/wireless telecom service providers operating in India- Bharti Airtel Ltd., Aircel Group, Reliance Communications Ltd., Vodafone Ltd., Tata Teleservices Ltd., IDEA Cellular Ltd., BSNL, MTNL, Reliance Jio Infocomm Ltd. etc. Out of these service providers, BSNL and MTNL are the only public sector service providers, while the rest of them are the private sector service providers. Table 5 shows the subscribers' base and market share of various mobile operators in India.

**Table 5: Growth in Wireless Subscribers and Market Share of major Telecom Companies (In millions)**

| *Year* | *BSNL* | *MTNL* | *Bharti Airtel* | *Vodafone / Hutch* | *Reliance Communi-cations* | *Reliance –Jio* | *Idea* | *Tata Docomo* | *Aircel* | *Unitech/ Telenor* | *Others* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001-02 | 0.04 (0.6%) | 0.22 (3.29%) | 1.35 (20.21%) | 1.27 (19.01%) | 0.38 (5.69%) | | 0.81 (12.13%) | 0.05 (0.75%) | 0.54 (8.08%) | 0 | 2.02 (30.24%) |
| 2002-03 | 2.29 (17.22%) | 0.35 (2.63%) | 3.07 (23.08%) | 2.16 (16.24%) | 0.54 (4.06%) | | 1.28 (9.62%) | 0.16 (1.2%) | 0.73 (5.49%) | 0 | 2.72 (20.45%) |
| 2003-04 | 5.53 (16.41%) | 0.46 (1.37%) | 6.5 (19.29%) | 5.15 (15.29%) | 7.26 (21.55%) | | 2.73 (8.1%) | 0.63 (1.87%) | 1.29 (3.83%) | 0 | 4.14 (12.29%) |
| 2004-05 | 9.9 (18.95%) | 1.08 (2.07%) | 10.98 (21.02%) | 7.8 (14.93%) | 10.45 (20.01%) | | 5.07 (9.71%) | 1.09 (2.09%) | 1.76 (3.37%) | 0 | 4.1 (7.85%) |
| 2005-06 | 17.65 (19.58%) | 2.05 (2.27%) | 19.58 (21.72%) | 15.36 (17.04%) | 17.31 (19.2%) | | 7.37 (8.18%) | 4.85 (5.38%) | 2.61 (2.9%) | 0 | 3.36 (3.73%) |
| 2006-07 | 30.99 (18.77%) | 2.94 (1.78%) | 37.14 (22.49%) | 26.44 (16.01%) | 28.01 (16.96%) | | 14.01 (8.49%) | 16.02 (9.7%) | 5.51 (3.34%) | 0 | 4.05 (2.46%) |
| 2007-08 | 40.79 (15.62%) | 3.53 (1.35%) | 61.98 (23.74%) | 44.13 (16.9%) | 45.79 (17.54%) | | 24 (9.19%) | 24.33 (9.32%) | 10.61 (4.06%) | 0 | 5.91 (2.28%) |
| 2008-09 | 52.15 (13.31%) | 4.48 (1.14%) | 93.92 (23.97%) | 68.77 (17.55%) | 72.67 (18.55%) | | 38.89 (9.93%) | 35.12 (8.96%) | 18.48 (4.72%) | 0 | 7.28 (1.87%) |
| 2009-10 | 69.45 (11.89%) | 5.09 (0.87%) | 127.62 (21.84%) | 100.86 (17.26%) | 102.42 (17.53%) | | 63.82 (10.92%) | 65.94 (11.29%) | 36.86 (6.31%) | 4.26 (0.73%) | 7.99 (1.36%) |
| 2010-11 | 91.83 (11.31%) | 5.47 (0.67%) | 162.2 (19.99%) | 134.57 (16.58%) | 135.72 (16.72%) | | 89.5 (11.03%) | 89.14 (10.98%) | 54.84 (6.76%) | 22.79 (2.81%) | 19.49 (3.15%) |

*contd. table 5*

| *Year* | *BSNL* | *MTNL* | *Bharti Airtel* | *Vodafone / Hutch* | *Reliance Communi-cations* | *Reliance –Jio* | *Idea* | *Tata Docomo* | *Aircel* | *Unitech/ Telenor* | *Others* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011-12 | 98.57 (10.72%) | 5.83 (0.63%) | 181.28 (19.72%) | 150.47 (16.37%) | 153.05 (16.65%) | | 112.72 (12.26%) | 81.75 (8.9%) | 62.57 (6.81%) | 42.43 (4.62%) | 19.66 (3.32%) |
| 2012-13 | 101.21 (11.66%) | 5 (0.58%) | 188.2 (21.69%) | 152.35 (17.56%) | 122.97 (14.17%) | | 121.61 (14.01%) | 66.42 (7.65%) | 60.07 (6.92%) | 31.68 (3.65%) | 18.3 (2.11%) |
| 2013-14 | 94.65 (10.46%) | 3.37 (0.37%) | 205.39 (22.71%) | 166.56 (18.41%) | 110.89 (12.26%) | | 135.79 (15.01%) | 63 (6.97%) | 70.15 (7.76%) | 35.61 (3.94%) | 19.1 (2.11%) |
| 2014-15 | 77.22 (7.96%) | 3.51 (0.36%) | 226.02 (23.3%) | 183.8 (18.95%) | 109.47 (11.29%) | | 157.81 (16.27%) | 66.32 (6.84%) | 81.4 (8.39%) | 45.62 (4.7%) | 18.72 (1.94%) |
| 2015-16 | 86.35 (8.35%) | 3.56 (0.34%) | 251.24 (24.31%) | 197.95 (19.15%) | 102.41 (9.91%) | | 175.07 (16.94%) | 60.1 (5.81%) | 87.09 (8.43%) | 52.45 (5.07%) | 17.41 (1.68%) |
| 2016-17 | 100.99 (8.63%) | 3.63 (0.31%) | 273.65 (23.39%) | 209.06 (17.86%) | 83.5 (7.14%) | 108.68 (9.28%) | 195.37 (16.7%) | 48.99 (4.18%) | 90.9 (7.76%) | 50.49 (4.31%) | 4.91 (0.42%) |
| 2017-18 | 111.68 (9.44%) | 3.56 (0.3%) | 304.19 (25.7%) | 222.7 (18.82%) | 0.19 (0.02%) | 186.56 (15.76%) | 211.21 (17.85%) | 31.19 (2.64%) | 74.15 (6.26%) | 37.98 (3.21%) | 0 (0%) |
| 2018-19 | 115.74 (9.96%) | 3.45 (0.3%) | 325.18 (27.99%) | Merged with Idea | 0.019 (0.00%) | 306.72 (26.4%) | 394.84 (33.98%) | 15.85 (1.36%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 2019-20 | 119.87 (10.35%) | 3.36 (0.29%) | 327.81 (28.31%) | Merged with Idea | 0.018 (0.00%) | 387.52 (33.47%) | 319.17 (27.57%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| CAGR | 52.40% | 15.43% | 33.52% | - | -14.86% | 37.46% | 36.96% | 37.70% | 33.58% | 27.52% | 5.71% |

*Source:* Authors' Own Compilation

According to the TRAI database, the private sector telecom operators dominate the delivery of wireless services in India, though their total market share has decreased from 96.11% in 2001 to 89.36% in 2020. The two public sector telecom companies BSNL and MTNL entered the wireless segment in 2001 and their market share has increased from 3.89% in 2001 to 10.64% in 2020. Still, the wireless telecom market in India is mainly dominated by private sector operators.

In 2001-02, the top five companies of the telecom sector in the wireless segment were: Bharti Airtel, Vodafone, Idea Cellular, Aircel and Reliance Communications. In 2019-20, the top wireless telecom companies are- Reliance Jio, Bharti Airtel, Vodafone Idea Limited and BSNL. Reliance Jio entered the market in 2016 and has captured a market share of 37.46% in just four years and is giving a tough competition to the top wireless service providers.

Table 5 also shows the CAGR of wireless subscribers of all the telecom operators for the period 2001-2020. The highest CAGR is registered by BSNL which is 52.4%. Other operators like Tata Docomo, Reliance Jio, Vodafone Idea Limited, Aircel and Bharti Airtel have also experienced high CAGR except Reliance Communications that registered negative CAGR (-14.86%).

The Indian telecom market is getting consolidated. Many small service providers were operating in 2001-02, having a market share of 30.24%. However, their share has declined to 0% in 2020. Now, there are only 4-5 major telecom players left in the market. This happened due to fierce competition

among the mobile operators in terms of tariff wars, cheaper data plans, and improved services to attract customers, which made it difficult for the small operators to survive in the market.

### *5.4.2. Wireline Service Providers*

The major wireline telecom service providers operating in India are- BSNL, MTNL, Bharti Airtel Ltd., Reliance Communications Ltd., Tata Teleservices Ltd. etc.

**Table 6: Growth in Wireline Subscribers and Market Share of major Telecom Companies (In millions)**

| *Year* | *BSNL* | *MTNL* | *Bharti Airtel* | *Reliance Communications* | *Tata Teleservices* | *Others* |
|---|---|---|---|---|---|---|
| 2001-02 | 33.22 (86.44%) | 4.63 (12.05%) | 0.18 (0.47%) | 0 | 0.31 (0.81%) | 0.09 (0.23%) |
| 2002-03 | 35.9 (86.55%) | 4.63 (11.16%) | 0.37 (0.89%) | 0 | 0.45 (1.08%) | 0.13 (0.31%) |
| 2003-04 | 36.11 (84.29%) | 4.37 (10.2%) | 0.64 (1.49%) | 0.5 (1.17%) | 1 (2.33%) | 0.22 (0.51%) |
| 2004-05 | 37.04 (80.19%) | 4.06 (8.79%) | 0.86 (1.86%) | 1.31 (2.84%) | 2.58 (5.59%) | 0.34 (0.74%) |
| 2005-06 | 35.42 (85.27%) | 3.82 (9.2%) | 1.33 (3.2%) | 0.23 (0.55%) | 0.42 (1.01%) | 0.32 (0.77%) |
| 2006-07 | 33.74 (82.76%) | 3.73 (9.15%) | 1.87 (4.59%) | 0.57 (1.39%) | 0.53 (1.3%) | 0.32 (0.78%) |
| 2007-08 | 31.55 (80.06%) | 3.68 (9.34%) | 2.28 (5.78%) | 0.87 (2.21%) | 0.72 (1.83%) | 0.31 (0.79%) |
| 2008-09 | 29.34 (77.27%) | 3.57 (9.4%) | 2.73 (7.19%) | 1.11 (2.92%) | 0.92 (2.42%) | 0.29 (0.76%) |
| 2009-10 | 27.83 (75.3%) | 3.5 (9.5%) | 3.07 (8.31%) | 1.18 (3.19%) | 1.16 (3.14%) | 0.22 (0.6%) |
| 2010-11 | 25.22 (72.62%) | 3.46 (9.96%) | 3.3 (9.5%) | 1.23 (3.54%) | 1.28 (3.69%) | 0.24 (0.69%) |
| 2011-12 | 22.45 (69.79%) | 3.46 (10.76%) | 3.27 (10.16%) | 1.23 (3.82%) | 1.44 (4.48%) | 0.27 (0.84%) |
| 2012-13 | 20.45 (67.69%) | 3.46 (11.45%) | 3.28 (10.86%) | 1.24 (4.1%) | 1.51 (5%) | 0.27 (0.89%) |
| 2013-14 | 18.49 (64.88%) | 3.53 (12.39%) | 3.36 (11.79%) | 1.24 (4.35%) | 1.55 (5.44%) | 0.33 (1.16%) |
| 2014-15 | 16.41 (61.69%) | 3.55 (13.34%) | 3.41 (12.82%) | 1.18 (4.44%) | 1.67 (6.28%) | 0.37 (1.39%) |

*contd. table 6*

| *Year* | *BSNL* | *MTNL* | *Bharti Airtel* | *Reliance Communications* | *Tata Teleservices* | *Others* |
|---|---|---|---|---|---|---|
| 2015-16 | 14.76 (58.52%) | 3.5 (13.88%) | 3.66 (14.51%) | 1.17 (4.64%) | 1.72 (6.82%) | 0.4 (1.58%) |
| 2016-17 | 13.69 (56.1%) | 3.46 (14.18%) | 3.87 (15.86%) | 1.17 (4.8%) | 1.75 (7.17%) | 0.46 (1.88%) |
| 2017-18 | 12.27 (53.79%) | 3.35 (14.68%) | 3.93 (17.23%) | 0.92 (4.03%) | 1.88 (8.24%) | 0.46 (2.02%) |
| 2018-19 | 11.17 (51.47%) | 3.24 (14.95%) | 4.17 (19.24%) | 0.73 (3.37%) | 1.83 (8.42%) | 0.55 (2.55%) |
| 2019-20 | 8.73 (43.16%) | 3.09 (15.30%) | 4.39 (21.73%) | 0.51 (2.50%) | 1.77 (8.76%) | 1.73 (8.55%) |
| CAGR | -6.79% | -2.11% | 18.31% | 0.12% | 9.6% | 16.83% |

*Source:* Authors' Own Compilation

The number of wireline service providers is very limited compared to the wireless service providers due to an increased preference of subscribers for wireless phones.The wireline market is always dominated by public sector operators though their share has declined from 98.49% in 2001 to 58.46% in 2020, while the share of private sector operators has increased from a mere 1.51% to 41.54%. Only two public sector operators (DoT and MTNL) were providing wireline services in India till 2000. After 2000, BSNL was established to provide these services all over India in place of DoT. The share of BSNL is much larger in comparison to MTNL because it covers the whole of India whereas MTNL operates only in Delhi and Mumbai. In 2019-20, among private sector operators, Airtel Bharti has the largest market share (21.73%) followed by Tata Teleservices (8.76%) and Reliance Communications (2.50%).

All the private sector operators have recorded positive CAGR which means that their wireline subscribers have increased during the period 2001-2020. The highest CAGR is registered by Bharti Airtel (18.31%), followed by Tata Teleservices (9.6%) and Reliance Communications (0.12%). While BSNL and MTNL have registered negative CAGR -6.79% and -2.11% respectively implying that the number of their wireline subscribers has decreased during 2001-2020.

## 6. Conclusion

Over the last three decades, the Indian telecom sector has experienced substantial growth in terms of technology, penetration, as well as policy and has emerged as one of the two large growing telecom markets of Asia, next to China. This telecom revolution has led to increased demand for basic and value-added services, increased subscriber base, network expansion, growing teledensity in urban as well as rural areas, increased number of broadband and internet subscribers and higher participation of the private sector in the industry. Still, there are huge disparities in the distribution of telecom access between rural and urban areas of the country. Further, the Indian telecom market is getting

consolidated due to fierce competition among the mobile operators and now, only 4-5 major telecom players are left in the market.

Given that telecom services generate several externalities in the economy, the government should take initiatives to augment the sectoral growth and increased penetration. It should establish investor-friendly business policies and make the regulatory framework more adaptable to the fast-changing needs of the telecom sector. There is a need to create an ecosystem that encourages foreign investors to view the rural markets as an opportunity for future expansion with immense potential for sustainable revenues. Tax holidays can be given to foreign investors for establishing telecom infrastructure and providing telecom services in rural and remote areas. Special efforts through awareness programs, customized value addition, innovative marketing and pricing are required in rural areas. Also, users should view the telephone as not only a tool for communication but also a tool to impart education, entertainment and as a means to promote common interests, ideas and goals. To achieve this dream, all the stakeholders, viz. the government, telecom operators, equipment vendors and various local bodies would need to collaborate and work closely, so that the attractiveness of the Indian telecom sector to foreign firms could be maintained further and the country could benefit from the latest technological developments and attract essential finance needed for the development of the telecom industry.

## References

Annual Report (2003-2004), Department of Telecommunications, Ministry of Communications & Information Technology, Government of India, New Delhi.

Arindham, M. (2006). Mobile service providers-perspective and practice.

Chhiber, N. K. (2008). Fast growth of mobile communication in India: lesson for emerging markets.

Clark, T. H., &Petrazzini, B. (1996). Costs and benefits of telecommunications liberalization in developing countries. In *Institute for International Economics Conference on Liberalizing Telecommunications Services, Washington, DC.*

Fathima, M. A., Ahmed, B., & Kumar, M. S. S. (2013). FDI in Indian Telecom Sector a Perspective. *International Journal of Scientific Engineering and Technology*, 2(10), 982-985.

Fink, C., Mattoo, A., &Rathindran, R. (2001). Liberalizing basic telecommunications: The Asian experience. *The World Bank*.

Gourav (2017). Telecom Industry of India: FDI Trends and Market Development. *International Journal of Engineering and Management Research,* 7(3), 802-805.

Gupta, R. (2002). Telecommunications Liberalisation: Critical Role of Legal and RegulatoryRegime. *Economic and Political Weekly*, 37(17), 1668-1675.

Kathuria, R. (2004). Trade in telecommunication services: opportunities and constraints (No. 149). *Indian Council for Research on International Economic Relations*, New Delhi, India.

KPMG (2009). The Indian Telecom Success Story. Retrieved from URL:

https://www.kpmg.de/docs/The_Indian_Telecom_Success_Story.pdf on March 11, 2021.

Muthusamy A., Ibrahim M. S., & Vanith, R. (2015). Foreign Direct Investment (FDI) in Telecommunication Services in India. *International Journal of Management and Social Science Research Review*, 1(18), 246-252.

Preetha, G. (2011). Foreign Direct Investment in the Indian Telecom sector– An Overview. *International Journal of Multidisciplinary Research,* 1(8),107-116.

Report on Indian Telecommunication Sector, Indian Brand Equity Foundation, (December 2018).

Shanthi, N. M. (2005). Indian Telecom: Growth and Transition, *Business Today*, January 2, 2005.

Telecom Regulatory Authority of India (2012). *Telecom Sector in India: A Decadal Profile.*

Telecom Regulatory Authority of India (2017). *A Twenty-Year Odyssey 1997-2017.*

Telecom Regulatory Authority of India (TRAI). *The Indian Telecom Services Performance Indicators 2020.*

Vittal, N. (1997). Government Initiatives, Regulation, and Financing of the Telecommunications Sector. *Vikalpa*, 22(1), 3-10.

## LIFETIME ACHIEVEMENT AWARDEES
## OF
## ORISSA COMMERCE ASSOCIATION

| Year | Venue of the Conferences | Awardees |
|---|---|---|
| 2017 | Fakir Mohan University, Balasore | Prof. Girija Prasad Acharya<br>Prof. Pramod Kumar Sahu |
| 2018 | Ravenshaw University, Cuttack | Prof. Ramakanta Jena<br>Prof. Gunanidhi Sahoo |
| 2019 | Utkal University, Bhubaneswar | Prof. Umesh Charan Pattnaik<br>Mr. Tahalu Sahu |
| 2020 | KIIT University, Bhubaneswar | Prof. Pradipta Chandra Tripathy (in absentia)<br>Prof. Malay Kumar Mohanty |
| 2021 | L. N. College, Jharsuguda | Prof. Sambhu Prasad Mishra<br>Prof. Damodar Biswal |

# FELLOW MEMBERS
# OF
# ORISSA COMMERCE ASSOCIATION

| Sl. No. | Name | Certificate No. |
|---|---|---|
| 1. | Prof. Malay Kumar Mohanty | 2019-F01 |
| 2. | Prof. Umesh Charan Patnaik | 2019-F02 |
| 3. | Prof. Ranjan Kumar Bal | 2019-F03 |
| 4. | Mr. Tahalu Sahoo | 2019-F04 |
| 5. | Mr. Baldev Kar | 2019-F05 |
| 6. | Prof. Sanjay Kumar Satapathy | 2019-F06 |
| 7. | Prof. Prabodh Kumar Hota | 2019-F07 |
| 8. | Major S A Taher | 2019-F08 |
| 9. | Prof. Sarbesh Kumar Mishra | 2019-F09 |
| 10. | Prof. Srinivas Subbarao Pasumarti | 2019-F10 |
| 11. | Prof. Sukanta Kumar Baral | 2019-F11 |
| 12. | Dr. Pradeepta Kumar Samanta | 2019-F12 |
| 13. | Prof. Santosh Kumar Mohapatra | 2019-F13 |
| 14. | Prof. Arka Kumar Das Mohapatra | 2021-F14 |
| 15. | Prof. Sasmita Rani Samanta | 2021-F15 |
| 16. | Prof. Santosh Kumar Tripathy | 2021-F16 |
| 17. | Prof. Abhijit Dutta | 2021-F17 |
| 18. | Prof. Jayanta Kumar Parida | 2021-F18 |
| 19. | Prof. Damodar Biswal | 2021-F19 |
| 20. | Prof. Sudhansu Sekhar Mahapatra | 2021-F20 |
| 21. | Prof. Ambika Prasad Pati | 2021-F21 |
| 22. | Dr. Abhay Kumar Panda | 2021-F22 |
| 23. | Dr. Amiya Kumar Mohapatra | 2021-F23 |

# INCUMBENCY CHART OF OFFICE BEARERS

Orissa Commerce Association (OCA) started in 1970 in G. M. College Sambalpur, which was the first College to have B. Com. as an under Graduate Course in Orissa. The pioneering founding members of OCA are:

1. Prof. Paresh Chandra Ray
2. Prof. Suryakanta Das
3. Prof. Batakrushna Mohanty
4. Prof. Durga Prasad Nayak

| Sl. No | Year | Venue | President | Secretary | Managing Editor of Orissa Journal of Commerce | Number of Issues Published |
|---|---|---|---|---|---|---|
| 1. | 1970 | G.M. College, Sambalpur | Sri Harihar Patel, Ministry of Industires, Govt. of Orissa | * | * | * |
| 2. | 1971 | Khalikote College, Berhampur | Prof. P.C.Ray, Secretary, Board of Secondary Education, Orissa | * | * | * |
| 3. | 1973 | Ravenshaw College, Cuttack | Prof. P.C.Ray, Secretary, Board of Secondary Education, Orissa | * | * | * |
| 4. | 1974 | G.M. College, Sambalpur | Prof. (Dr) Surya Kant Das, Professor of Commerce, Utkal University, Bhubaneswar | Prof. Batakrushna Mohanty, Prof. of Commere, G. M. College, Sambalpur | Dr. Abhaya Kumar, Reader, Department of Commerce, Utkal University | One Issue |
| 5. | 1976 | Utkal University, Bhubaneswar | Mr. M.P. Modi, I.A.S. Managing Director, IDC | * | * | * |
| 6. | 1977 | Bhadrak College, Bhadrak | Prof. (Dr) Surya Kant Das, Professor of Commerce, Utkal University, Bhubaneswar | * | * | * |
| 7. | 1978 | S.C.S. College, Puri | Prof. Batakrushna Mohanty, Principal, G.M. College, Sambalpur | * | * | * |
| 8. | 1980 | Berhampur University, Bhanja Vihar, Berhampur | Prof. Batakrushna Mohanty, Principal, G.M. College, Sambalpur | * | * | * |
| 9. | 1981 | K.S.U.B. College, Bhanjanagar | Prof. Ganga Prasad Panda, Principal Lingaraj Law College, Berhampur | * | * | * |
| 10. | 1982 | Dhenkanal College, Dhenkanal | Shri Durga Prasad Nayak, Principal, Sonepur College, Sonepur. | Dr. Girija Prasad Acharya | Dr. Pramod Ku. Sahu, Berhampur University | One Issue |
| 11. | 1983 | Ispast College, Rourkela | Prof. Bijay Narayan Pattnaik, Utkal University, Bhubaneswar | Dr. Girija Prasad Acharya | * | * |
| 12. | 1985 | F.M. College, Balasore | Prof. (Dr.) J.J. Rao, Ravenshaw College, Cuttack | Dr. Girija Prasad Acharya | * | * |
| 13. | 1986 | Ganjam College, Ganjam | Prof. (Dr) Ramakanta Jena, Dean, Faculty of Commerce, Utkal University, Bhubaneswar | Dr. Girija Prasad Acharya | Dr. Ghanashyam Panda, Berhampur University | One Issue |

| Sl. No | Year | Venue | President | Secretary | Managing Editor of Orissa Journal of Commerce | Number of Issues Published |
|---|---|---|---|---|---|---|
| 14. | 1987 | L.N.College, Jharsuguda | Prof. (Dr) Pramod Ku. Sahu, Professor , Berhampur University, Berhampur | * | Dr. Ghanashyam Panda, Berhampur University | One Issue |
| 15. | 1988 | Dhenkanal College, Dhenkanal | Prof. Sambhu Prasad Mishra, Professor of Commerce, G.M. College, Sambalpur | * | Dr. Ghanashyam Panda, Berhampur University | One Issue |
| 16. | 1990 | Dept. of Commerce, Berhampur University | Sri C. S. Patro, Head, P.G. Department of Commerce, Khalikote College | Dr. Swaroop Ch. Sahoo | Dr. Gunanidhi Sahoo, Principal, Khalikote, Berhampur | One Issue |
| 17. | 1994 | Bhadrak College, Bhadrak | Prof. (Dr) Gunanidhi Sahu, Principal, Khalikote College, Berhampur | Dr. Jagannath Panda | Dr. Swaroop Ch. Sahoo | One Issue |
| 18. | 1995 | S.C.S. College, Puri | Prof. (Dr) Girija Prasad Acharya, Professor of Commerce, Ravenshaw College, Cuttack | Dr. Bidhu Bhusan Panigrahi, | Prof. Pramod Ku. Sahu, Berhampur University | One Issue |
| 19. | 1997 | Womens' College, Jharsuguda | Shri Ayodhya P. Nayak, BJB College, Bhubaneswar | Dr. Damodar Biswal, S.C.S. College, Puri | Prof. Pramod Ku. Sahu, Berhampur University | One Issue |
| 20. | 1998 | Prananath College, Khurda | Prof. (Dr.) Pradeep Chandra Tripathy, Professor , Utkal University, Bhubaneswar | Prof. Tahalu Sahoo, Principal Womens College, Jharsugara | Prof. Pramod Ku. Sahu, Berhampur University | One Issue |
| 21. | 1999 | Khalikote (Auto) College, Berhampur | Prof. (Dr) R.P. Choudhury, Principal, Khalikote College (Auto), Berhampur | Malay Kumar Mohanty, Ravenshaw College (Auto) | Prof. Pramod Ku. Sahu, Berhampur University | One Issue |
| 22. | 2000 | Ispat College, Rourkela | Prof. Minaketan Mohapatra, Principal, Dehenkanal College | Malay Kumar Mohanty, Ravenshaw College (Auto) | Prof. Pramod Ku. Sahu, Berhampur University | One Issue |
| 23. | 2001 | Maharshi College of Natural Law, Bhubaneswar | Prof. (Dr) Damodar. Biswal, Professor, Ravenshaw College (Auto), Cuttack | Malay Kumar Mohanty, Ravenshaw College (Auto), Cuttack | Prof. Pramod Ku. Sahu, Berhampur University | One Issue |
| 24. | 2004 | Kendrapara College, Kendrapara | Prof. (Dr) Jagannath Panda, Professor Berhampur University, Berhampur | Prof. Ranjan Kumar Bal, Utkal University | Prof. Pramod Ku. Sahu, Berhampur University | One Issue |
| 25. | 2005 | V.N.College, Jajpur Road | Prof. (Dr) Umesh Ch. Pattnaik, Professor Berhampur University, Berhampur | Prof. Ranjan Kumar Bal, Utkal University | Prof. Jagannath Panda, Berhampur University | One Issue |
| 26. | 2006 | Rayagada College, Raygada | Prof. Tahalu Sahu, Principal Belpahar College, Belpahar | Prof. Ranjan Kumar Bal, Utkal University | Prof. Jagannath Panda, Berhampur University | One Issue |
| 27. | 2007 | P.G. Department of Commerce Utkal University, Bhubaneswar | Prof (Dr) Samson Moharana, Professor Utkal University, Bhubaneswar | Prof. Kishore Ch. Rout, Berhampur University | Prof. Jagannath Panda, Berhampur University | One Issue |
| 28. | 2008 | Fakir Mohan Autonomous College, Balasore | Dr. Arun Kumar Barik, Head, Department of Commerce, Vyasanagar College, Jajpur Road | Prof. Kishore Ch. Rout, Berhampur University | Prof. Ranjan Kumar Bal, Utkal University | One Issue |
| 29. | 2009 | Govt. Autonomous College, Angul | Maj (Dr.) Abhay Kumar Panda, Principal, Fakir Mohan Autonomous College, Balasore. | Prof. Kishore Ch. Rout, Berhampur University | Prof. Ranjan Kumar Bal, Utkal University | One Issue |

| Sl. No | Year | Venue | President | Secretary | Managing Editor of Orissa Journal of Commerce | Number of Issues Published |
|---|---|---|---|---|---|---|
| 30. | 2010 | Department of Commerce, Ravenshaw University | Shri Baladev Kar, Principal, Govt. College (Auto), Angul | Dr. Kshiti Bhusan Das, Utkal University | Prof. Ranjan Kumar Bal, Utkal University | One Issue |
| 31. | 2011 | P. G. Department of Commerce, Berhampur University | Prof. Malay Kumar Mohanty, Former Registrar, Ravenshaw University, Professor G. M. College, Dean Sambalpur University | Dr. Kshiti Bhusan Das, Utkal University | Prof. Ranjan Kumar Bal, Utkal University | Two Issues |
| 32. | 2012 | P. G. Department of Commerce, Utkal University | Prof. P. K. Biswasray, Professor , Berhampur University | Dr. Kshiti Bhusan Das, Utkal University | Prof. Ranjan Kumar Bal, Utkal University | One Issue |
| 33. | 2013 | Choudwar College, Choudwar | Prof. Prasant Kumar Sahu, Vice- Chancellor, Utkal University | Prof. Kshiti Bhusan Das, Utkal University | Prof. Malay Kumar Mohanty | One Issue |
| 34. | 2014 | P. N. (Auto) College, Khurda | Prof. Ranjan Kumar Bal, Professor, Utkal University | Prof. Kshiti Bhusan Das, Utkal University | Prof. Malay Kumar Mohanty | Two Issue |
| 35. | 2014-15 | Kendrapada (Auto) College | Prof. Kshiti Bhusan Das, Professor, Utkal University | Dr. G. K. Panigrahi | Prof. Malay Kumar Mohanty | Two Issues |
| 36. | 2016 | Belpahar College, Belpahar | Prof. Girish Ku. Patra, Kendrapada (Auto) College | Dr. G. K. Panigrahi | Prof. Malay Kumar Mohanty | Two Issues |
| 37. | 2017 | F. M. University, Balasore | Prof. Jayanta Kumar Parida, Professor, Utkal University | Dr. G. K. Panigrahi | Prof. Malay Kumar Mohanty | Three Issues |
| 38. | 2018 | Ravenshaw University, Cuttack | Prof. Bhagaban Das, Professor, F. M. University | Major (Dr) S. A. Taher | Prof. Malay Kumar Mohanty | Four Issues |
| 39. | 2019 | P. G. Department of Commerce, Utkal University | Prof. Sanjay Kumar Satapathy, Professor, Ravenshaw University | Major (Dr) S. A. Taher | Prof. Malay Kumar Mohanty | Four Issues+One Special Issue |
| 40. | 2020 | KIIT, Deemed to be University, | Prof. P. K. Hota, | Major (Dr) S. A.Taher | Prof. Malay Kumar Mohanty | Four Issues+One Special Issue |
| 41 | 2021 | L.N.College, Jharsuguda | Prof. Sasmita Samanta, Pro-Vice Chancellor, KIIT University, Bhubaneswar | Major (Dr) S. A.Taher | Prof. Malay Kumar Mohanty | Four Issues |

* **Information not available:** People concerned are requested to provide the above missing information with proper references. If any error has crept in the above incumbency chart inadvertently, persons are requested to intimate the correction with the required documentation.

# ORISSA COMMERCE ASSOCIATION

## EXECUTIVE COMMITTEE 2021-22

| | | |
|---|---|---|
| **President** | : | Prof. Sasmita Rani Samanta, KIIT University, Bhubaneswar |
| **Vice-President** | : | Prof. Kishore Chandra Raut, Former Professor, Berhampur University, Berhampur |
| **Gen. Secretary** | : | Major Dr. S. A. Taher, Retd. Principal, Vyasanagar Autonomous College, Jaipur |
| **Joint Gen. Secretary** | : | Dr. Arta Bandhu Jena, F. M. University, Balasore |
| **Treasurer** | : | Dr. Bhagabat Behera, Ravenshaw University, Cuttack |
| **Managing Editor (OJC and OCA News Letter)** | : | Prof. Malay Kumar Mohanty, Professor & Former Head, GM College and Dean, Faculty of Commerce and Management, Sambalpur University; Former Registrar, Ravenshaw University and Controller of Examination, Utkal University, Bhubaneswar; Honorary Visiting Professor Ravenshaw University, Cuttack, Former President of Orissa Commerce Association. |
| **Conference Secretary** | : | Mr. Narendra Kumar Panda, L. N. College, Jharsuguda |
| **Executive Members Bhubaneswar** | : | Dr. Sabat Kumar Digal, Ramadevi Women's University, Bhubaneswar |
| **Cuttack, Jagatsinghpur** | : | Dr. Tushar Kanta Pany, Ravenshaw University, Cuttack |
| **Puri, Khordha, Nayagarh** | : | Dr. (Mrs.) Elina Kanungo, SCS College, Puri |
| **Ganjam, Gajapati** | | Mr. Sakti Ranjan Dash, Berhampur University, Berhampur |
| **Koraput, Rayagada, Malkangiri, Nabarangapur** | : | Dr. Ranjan Kumar Swain, Malkangiri College, Malkangiri |
| **Kalahandi, Nuapada, Balangir, Subarnapur** | : | Dr. Kishore Ch. Sahu, Dungurupalli College, Sonepur |
| **Sambalpur, Bargarh, Deogarh** | : | Dr. Biswa Mohan Jena, NSCB College, Sambalpur |
| **Sundergarh, Jharsuguda** | : | Mr. Samir Ranjan Nayak, Brajaraj Nagar College, Brajaraj Nagar |
| **Kendujhar, Mayurbhanj** | : | Dr. Smruti Ranjan Das, Faculty of Mgt., North Orissa University, Baripada |
| **Angul, Dhenkanal, Boudh, Kandhamal** | : | Mr. Rajanikant Kuntia, Dhenkanal Autonomous College, Dhenkanal |
| **Balasore, Bhadrak** | : | Dr. Durga Madhab Mahapatra, Fakir Mohan Autonomous College, Balasore |
| **Jajpur, Kendrapara** | : | Mr. Sanjib Kumar Das, Pattamundai College, Pattamundai. |
| **Ex-Officio Executive Members** | : | **All Past Presidents** |

# Orissa Journal of Commerce

## Manuscript Guidelines for Contributors/Authors

We invite academicians, researchers and executives / industry practitioners to submit original and unpublished research papers/articles in the area of Commerce, Economics, and Management for publication in **Orissa Journal of Commerce**. Following guidelines should be followed:

a) The manuscripts should be typed in MS Word and 1.5 spaces with margin of 1 inch on all side. An **Abstract of 150-160 words, 5-6 Keywords and 4-5 JEL Classification codes** should be provided in the first page of the paper. **The length of the paper should not exceed 6,000 words.**

b) The title of the paper should be followed by name, designation, affiliation, email and mobile number of the author(s). The surname of the author(s) should be marked in blue colour.

c) The main body of the paper should contain: **1. Introduction, 2. Review of Literature, 3. Objective and Hypothesis of the Study, 4. Research Methodology, 5. Data Analysis, 6. Results and Discussion, and 7. Conclusion.** The conclusion should include research outcomes, implications of research on industry, academia and policy making, Limitation of study if any, and future scope of research if any. The subheadings under each of the main headings should also be numbered accordingly.

d) The tables and figures with their sources should appear in the manuscript near/after where they are referred in the text. All figures and tables should be numbered **(Table 1, 2, 3… & Figure 1, 2, 3…)** and cited in the text with proper headings.

e) It is the author's obligation to provide complete references with the necessary information. **References should be according to APA latest edition arranged in alphabetical order.** The list of all references must be placed at the end of the manuscript.

f) Papers received in the prescribed journal format only will be processed for review. (**For paper template/format, please refer January-March 2021 Journal Issue)**

g) Every paper should accompany a similarity index report in Turnitin antiplagiarism software. **The plagiarism percentage should not exceed 10-12 per cent** (excluding 8 words). Further it should not be more than one per cent from one source.

h) The Editorial Board reserves the right to accept a manuscript for publication. Papers are processed and reviewed through a blind referral system by experts in the subject areas. To ensure anonymity, the author(s) name, designation and other details should appear only on the first page along with the title of the paper and should not be repeated anywhere else. Accepted manuscripts are subject to editorial changes. All the correspondences including acceptance/revision/rejection will be made to the corresponding author.

Research papers / articles for publication in the journal should be submitted to : malay@ojcoca.org, submissionojcoca@gmail.com
For more details, the authors may visit Journal website : www.ojcoca.org

ISSN : 0974 - 8482

# Orissa Journal of Commerce

Published by : Dr. Malay Kumar Mohanty, Managing Editor
On Behalf of Orissa Commerce Association, Odisha, India.
E-mail : malay@ojcoca.org, submissionojcoca@gmail.com
Journal Website : www.ojcoca.org