



Peer Reviewed Referred  
and UGC Listed Journal

An International Multidisciplinary  
Half Yearly Research Journal

ISO 9001:2008 QMS  
ISBN / ISSN

# AJANTA

Volume - VIII, Issue - I, January - March - 2019

ISSN 2277 - 5730

Impact Factor - 5.5 (www.sjifactor.com)

Is Hereby Awarding This Certificate To

**Rahul R. Tiwari**

As a Recognition of the Publication of the Paper Entitled  
A Statistical Analysis of Digital Transformation in  
Banking Sector in Mumbai Region

Certified as  
TRUE COPY

Principal

PRINCIPAL

RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE AND COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA

**Editor : Vinay S. Hatole**

Ajanta Prakashan, Jaisingpura, Near University Gate, Aurangabad. (M.S.) 431 004

Mob. No. 9579260877, 9822620877 Tel. No.: (0240) 2400877,

ajanta1977@gmail.com, www.ajantaprakashan.com

Stats  
Rahul Tiwari - AH  
2018-19

ISSN 2277 - 5730  
AN INTERNATIONAL MULTIDISCIPLINARY  
QUARTERLY RESEARCH JOURNAL

# AJANTA

Volume - VIII

Issue - I

English Part - I

January - March - 2019

Peer Reviewed Refereed  
and UGC Listed Journal

Journal No. 40776



ज्ञान-विज्ञान विमुक्तये .

IMPACT FACTOR / INDEXING  
2018 - 5.5

[www.sjifactor.com](http://www.sjifactor.com)

❖ EDITOR ❖

Asst. Prof. Vinay Shankarrao Hatole

M.Sc (Maths), M.B.A. (Mktg.), M.B.A. (H.R.),  
M.Drama (Acting), M.Drama (Prod. & Dir.), M.Ed.

❖ PUBLISHED BY ❖

**Ajanta Prakashan**

Aurangabad. (M.S.)

Certified as  
TRUE COPY

  
Principal  
Ramniranjan Jhunjhunwala College,  
Ghatkopar (W), Mumbai-400086.

## 2. A Statistical Analysis of Digital Transformation in Banking Sector in Mumbai Region

Rahul R. Tiwari

Ramniranjan Jhunjhunwala College of Arts, Science and Commerce, Mumbai.

### Abstract

The researcher has studied the perceptions of people in respect benefits of digital transformation in banking sector in Mumbai region. The data was collected from the respondents with the help of structured questionnaire and analyzed using graph, non- parametric test, testing of hypothesis, etc. Responses from respondents show that there are relationship between customer visit to digital bank with income level and age are significant and there are significant benefits of digital transformation in banking system such as quick transaction, no huge amount carry in hand, updating KYC, opening fixed deposit/recurring deposit account online, etc.

**Keywords:** Digital transformation, digital bank, traditional bank, NEFT, RTGS, BHIM, etc.

### Introduction

Digital transformation (DT) is far beyond just moving from traditional banking to a digital world. Due to digital transformation (DT), there are more and more use of digital mode and less use of cash in day to day transactions. Every digital transaction will be through Debit / Credit Cards, Net banking using channel National Electronic Funds Transfer (NEFT) , Real Time Gross Settlement (RTGS) , Immediate Payment Service (IMPS), Electronic transfer through services using payment bank like Paytm, Phonepe, Jio money, India Post Payments Bank (IPPB), Google pay, BHIM (Bharat Interface For Money) , etc.

Now a day, bank offers a savings account with no account opening charges or minimum balance requirements and keep up to Rs. 1 lac of deposits and enjoys benefits like: risk-free deposits, real time updated passbook, highly secure, rupay debit card, etc. The payment bank like Paytm, Airtel payment, Indian Post Payments Bank (IPPB) provides the same services. Due to digital transformation, it enables the users to make transaction at their finger tip. It is a vital change in how banks and other financial institutions learn about, interact with and satisfy customers.

**Certified as  
TRUE COPY**

ENGLISH PART - I / Peer Reviewed Refereed and UGC Listed JournalNo. : 40776

**Principal**  
Ramniranjan Jhunjhunwala College,  
Ghatkopar (W), Mumbai-400086.

## Objectives

- 1) To study different sources of update of DT in banking and modes of payment.
- 2) To study the relationship between
  - i. Educational level and customer visit to digital bank.
  - ii. Age /Income level and customer visit to digital bank.
- 3) To study significant difference in average time saving before and after DT banking system.

## Research Methodology

**3.1 Sampling:-**The researcher has used the simple random sampling technique. The study includes 75 samples from different background.

**3.2 Tools used: -** The Questionnaire was used as a sampling tool. It consists of questions of open and closed ended types.

**3.3 Statistical Technique: -** Simple method of percentage, Wilcoxon sign rank test, Chi-square test, One sample t- test was used.

## Limitations of the Study

The study was confined only in Mumbai region and limited to only 75 respondents.

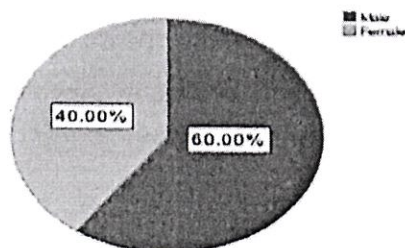
## Data Analysis and Interpretation

Data were collected from 75 respondents from Mumbai region. Data collected by respondents and imported in SPSS. This data further used for finding the conclusions based on the objectives and hypotheses of the study. The data collected respondents were analyzed using simple percentage method, mean, median, mode and one sample t-test, chi-square, wilcoxon sign rank test.

## Sample Profile

In the present study samples are selected using simple random sampling. In the graph no.1, researcher has presented details the respondents according to their gender wise distribution.

**Graph no.1: Gender wise distribution of respondents**



**Certified as  
TRUE COPY**

**Principal**  
Ramniranjan Jhunjhunwala College,  
Ghatkopar (W), Mumbai-400086.

Graph no.1 reveals that 60% males and 40% females were deliberately and randomly selected for the response to questionnaire.

In the Table no.1, researcher has presented details of respondents about their marital status.

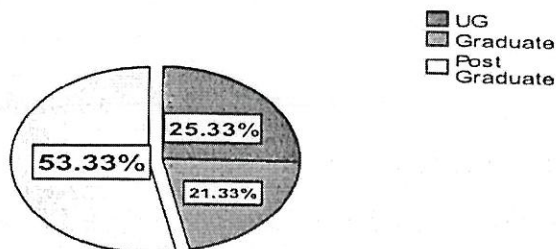
Table no. 1 Age

Age	Frequency	Percent
0-18	1	1.3
18-27	53	70.7
28-37	12	16.0
38-47	5	6.7
>48	4	5.3
<b>Total</b>	<b>75</b>	<b>100.0</b>

Table no.1 reveals that 1.3% respondents were below 18 years, 70.7% respondents were between 18 -27 years, 16% respondents were between 28-37 years, 6.7% respondents were between 38-47 years and 5.3% respondents were 48 years and above.

In the Graph no. 2, researcher has presented details of the respondents about their education level.

Graph no. 2: Education Level



Graph no.2 reveals that 25.33% respondents were under Graduate, 21% respondents were Graduate, and 53.33% respondents were Post Graduate.

In the Table no. 2, researcher has presented details of the respondents according to their occupation.

Table no. 2: Occupation wise distribution of respondents

Occupation	Frequency	Percent
Students	39	52.0
Salary	27	36.0
Business	4	5.3

Certified as  
TRUE COPY

Principal

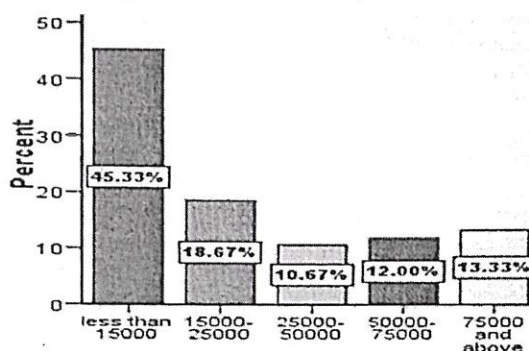
Ramviraj Singh Chauhanwala College,  
Charkop, ENGLISH PART - 17 Peer Reviewed Refereed and UGC Listed Journal No. : 40086.

Housewife	1	1.3
Retired	4	5.3
<b>Total</b>	<b>75</b>	<b>100.0</b>

Table no. 2 reveals that 52% respondents were students, 36% respondents were salaried, 5.3%,1.3%,5.3% respondents were (Self- employed) Business, housewives, retired respectively.

In the Graph no.3 researcher has presented details of the respondents according to their monthly income in (Rs.).

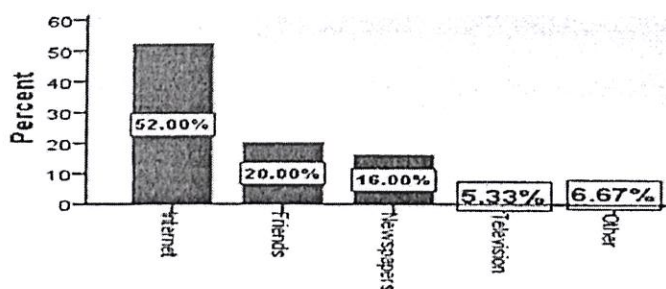
**Graph no. 3: Monthly Income**



Graph no. 3 reveals that 45.33% respondents were earning up- to Rs. 15,000, 18.67% respondents were earning between Rs. 15,000 to Rs. 25,000, 10.67% respondents were earning between Rs. 25,000 to Rs. 50,000 and 12% respondents were earning between Rs. 50,000 to Rs. 75,000 and 13.33% respondents were earning Rs. 75,000 and above.

In the Graph no. 4, researcher has presented details of the respondents according to different sources to acquire updates of DT in banking system.

**Graph no.4: Sources of DT in banking system**



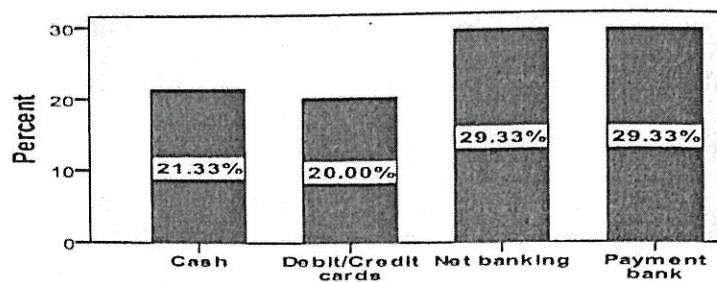
Graph no. 4 reveals that 52% respondents were getting updates from internet, 20% respondents were getting updates from friends, 16% respondents were getting updates from newspapers, and remaining are from television and others.

**Certified as  
TRUE COPY**

*(Signature)*  
Principal

Ramniranjan Jhunjhunwala College,  
Ghatkopar (W), Mumbai-400086.

Graph no.5: Modes of payment



Graph no. 5 reveals that net banking and payments bank have equal proportion for payment i.e 29.33% respondents. 21.33% respondents were using cash where as 20% respondents preferred debit/credit cards.

### Analysis of Data of the Present Study

To study the relationship between

- Educational level and customer visit to digital bank.
- Age /Income level and customer visit to digital bank.

For testing above hypothesis, researcher has used **Chi-square test**.

$H_0$ : There is no association between educational level and customer visit to digital bank.

Vs  $H_1$ : Not  $H_0$

Pearson chi-square test value=10.418 p-value=0.237

Since p- value > l.o.s= 0.05, therefore we do not reject  $H_0$ .

$H_0$ : There is no association between age and customer visit to digital bank. Vs

$H_1$ : Not  $H_0$

Pearson chi-square test value=36.559 p-value=0.002

Since p- value < l.o.s= 0.05, therefore we reject  $H_0$ .

$H_0$ : There is no association between income level and customer visit to digital bank.

$H_1$ : Not  $H_0$

Pearson chi-square test value=41.939 p-value=0.0000

Since p- value < l.o.s= 0.05, therefore we reject  $H_0$ .

### Wilcoxon Signed Ranks Test

To study significant difference in average time saving before and after DT in banking system.

**Certified as TRUE COPY**  
 $H_0$ : There is insignificant difference in average time saving before and after DT in banking system. Vs  $H_1$ : Not  $H_0$ .

Principal

ENGLISH PART - I / Peer Reviewed Refereed and UGC Listed Journal No. : 40776

Amniranjan Jhunjhunwala College,  
 Jhatkopar (W), Mumbai-400086.

For testing above hypothesis, researcher has used **Wilcoxon Signed Ranks Test**

**Table no.3**

Z	-5.858 <sup>a</sup>
Asymp. Sig. (2-tailed)	.000

Since p- value=0.000 < l.o.s= 0.05, therefore we reject Ho.

i.e There is significant difference in average time saving before and after DT in banking system.

To study the benefits of DT in banking system, the respondents were asked to express their views on the five points benefits scale. The codes for which are given below.

SA = Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, SD = Strongly Disagree

=1

Mean =  $\bar{X}$  , Median= Me, Mode=Mo

**Table no. 4: Benefits of DT in Banking System (in Frequency) and its descriptive parameters.**

SR. No.	Benefits of digital transformation	SA %	Agree %	Neutral %	Disagree %	SD %	$\bar{X}$	Me	Mo
1.	Easy to login	48.0	44.0	6.7	--	1.3	4.37	4	5
2.	E- statement printing	45.3	22.7	26.7	1.3	4.0	4.24	4	5
3.	Account summary	42.7	38.7	18.7	--	--	4.04	4	5
4.	Account opening (saving/current )	20.0	49.3	18.7	5.3	6.7	3.71	4	4
5.	Opening RD/FD/NPS/DMAT account online	21.3	32.0	28.0	13.3	5.3	3.51	4	4
6.	Transfer of funds using NEFT/RTGS/IMPS/UPI	54.7	21.3	14.7	8.0	1.3	4.2	5	5
7.	Request and stop cheque book	36.0	40.0	16.0	5.3	2.7	4.01	4	4
8.	Mobile number, PAN card, Aadhar card, email id address updates	49.3	32.0	14.7	2.7	1.3	4.25	5	4
9.	Top up, recharge and Bill payment	54.7	29.3	12.0	1.3	2.7	4.32	5	4
10.	Request for debit/credit card	36.0	42.7	14.7	4.0	2.7	4.05	4	4

**Certified as TRUE COPY**



11.	Blocking/ unblocking debit/credit card	30.7	38.7	17.3	5.3	8.0	3.79	4	4
12.	Registration of nomination online	20.0	44.0	21.3	9.3	5.3	3.64	4	4
13.	Difficulties about system resolved by customer care	18.7	42.7	22.7	14.7	1.3	3.63	4	4
14.	Password protection	52.0	21.3	14.7	6.7	5.3	4.08	5	5

### Interpretation

From the above table no.4 shows responses of the respondents in percentage and descriptive parameters of various benefits of DT in banking system such as easy to login, account summary, opening of account online, transfer of funds, updates KYC, reduces the cost of printing and transportation. You can top up, recharge and bill payment 24\*7, etc. Also it can be concluded that on an average mean, median and mode of benefits of DT in banking system is approximately 4.

### Hypothesis Testing of the Study

$H_0$ : There is insignificant difference in avg benefits of DT in banking system in Mumbai region.

For testing above hypotheses, researcher has used **One-Sample Test**

**Table no. 5**

	Test Value = 3.8		
	T	df	Sig. (2-tailed)
Benefits of digital transformation in banking system	2.491	13	.027

### Conclusion

Since  $p\text{-value} = 0.027 < \text{I.o.s} = 0.05$ , therefore we reject  $H_0$

i.e There is significant difference in avg benefits of DT in banking system in Mumbai.

### Conclusions

From the above table no. 4 and 5, there are significant benefits of DT in banking system in Mumbai such as easy to login, account summary, opening of RD/FD/NPS/DMAT account online, transfer of funds using NEFT/RTGS/IMPS/UPI, update KYC . You can top up, recharge

bill payment 24\*7. In case of loss of ATM card, you can immediate launch the complaint

**TRUE COPY**

Principal

Ramniranjan Jhunjhunwala College,  
Ghatkopar (W), Mumbai-400086.

and block your card, fully password protection, no need to rely on bank branches. The query related to system, transaction failed, any technical issue, you may contact customer care or email them, and then it will be resolved within span of time.

### Suggestions and Recommendation

- 1) The application works fast and user friendly and provides more cash back offers; difficulties about system solved by customer care and give better services.
- 2) As increasing the demand of digital banking, government and other organization should spread awareness regarding this kind of banking. Digital education should also be spread into the masses and digital fraud should be stopped.
- 3) There should be strengthening internet security to protect online fraud.
- 4) In the rural area, everyone have not smart phone and there is always internet connectivity problem, banking sector should provide to do services offline i.e. using SMS option.

### References

- 1) Kumbhar, R. (2015). *How to Write Project Reports, Ph.D. Thesis and Research Articles*. Pune: B.P.Juvale, Universal Prakashan, Pune, ISBN: 978-81-87552-64-2.
- 2) <http://www.worldblaze.in/pros-cons-of-a-cashless-indian-society/>
- 3) <https://www.quora.com/What-are-the-advantages-disadvantages-of-digital-transformation-in-India>
- 4) International Journal of Research in Management & Social Science, cashless transaction and its benefits in mumbai, Dr. Mangesh Vasudeo Nirmala Panchal, ISSN 2322 – 0899.

Certified as  
TRUE COPY  
  
Principal  
Ramniranjan Jhunjhunwala College,  
Ghatkopar (W), Mumbai-400086.