Impact of Green Banking Strategy on Paper Based Instruments in Banking

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Abstract: Green Banking is the need of hour and its importance lies from the fact that the world is moving towards digitalization. Asdigitalization is taking its pace, paper based instruments are being used very less. Due to less use of paper based instruments in banking sector, banks have initiated using Green Banking Strategy. One of the green banking strategies is utility of electronic mode of doing transactions. This will help in making the banking transactions at ease. Utility of electronic mode in banking will help in reducing the burden of manufacturing paper to a greater extent. This extent would help in reducing the deforestation and would boost the strategy of green banking. Green banking would help in recovering the environmental problems to an extent. In this regard, utility of electronic transactions would help in strategizing the Green Banking. After the initiation of Green Banking strategy whether the impact has been created or not has to be checked. This paper deals with study on what was the impact of green banking strategy on paper based instruments where green banking strategy means less utility of paper based instruments and more utility of electronic mode of banking operations.

Keywords: Green Banking Strategy, Paper Based Instruments.

Introduction: In 21st century most important factor that surrounds the human society is environment. To have a good and healthy living, environment plays a crucial role. Even the thinking of human beings can be altered based on content of oxygen and carbon dioxide in the environment. As human beings have started settling and developing, human civilization is moving from physical organizations to non physical organizations. In this regard, economy is also moving on the same path. Under the economic parameters, Happiness Index is very important. This index measures the contentment of

the human life. Happiness index is supported by environmental factors. Under this, the presence of carbon dioxide plays a crucial role. After the advent of greenhouse gases, the global warming has become a major concern for all. Under this the most important aspect is to sustain the resources which are necessary for survival. Taking economy to those heights where the economy can sustain for longer period of time has been a challenge. For this the most important is to convert the present economy into green economy. The tagline of "GO GREEN" needs to be implemented in the economy. Banking institutions have given thumbs up for this initiative. Under this the banks have taken up paperless transactions as their first priority. Because of this the real banking organizations have turned into virtual organizations. Whether this initiative of carrying out day to day banking activities paperless is right or wrong? what is the impact of paperless transactions on green banking in the core part of this paper.

Literature Review:

1. Economy:

Economy plays a crucial role in developing a nation. In this most important factor contributing to the economy is GDP. Gross Domestic Product plays a crucial role as it acts as an indicator of economy. It is the GDP which helps investors in decision making. GDP helps many speculators in developing their strategies for investment [Daga, Dr & Das, Rituparna & Maheshwari, Bhishma. (2009)].

2. Green Economy:

Exploitation in the name of development had harmed mother earth badly. Resources are getting depleted. Many species of flora and fauna have become extinct. This has happened due to creation of such environmental factors which do not support life. Due to the rise in environmental depletion, moving towards sustainable environment has become the call of hour. [Mihajlović, Slavica&Đorđević, Nataša. (2022)].

Banking Institutions have come up with new ideas of taking economy towards Green Economy. In this the banks are going for paperless transactions. Due to this, deforestation from banking sector has decreased [Park, H., Kim, J.D. (2020)].

This has made banks to move towards non physical transactions. Banks have come up with different strategies of promoting cash less transactions. Promoting paperless and cash less transactions has helped people during tough times like demonetization and covid 19 [Raj L., V., Amilan, S. and Aparna, K. (2023)]

3. Sustainable Environment:

Green economy also means making the economy sustainable for coming generations to live. This can be done if the economy is investing in such activities which are recyclable and reusable. In this regard, banking institutions have taken up new idea of utilizing more electronic based instruments in banking rather than paper based instruments. By

using more of electronic based instruments, less paper will be used. By the use of less paper, less trees will be cut down and the forests are preserved. By utilizing paperless and cash less payment systems, the idea of attaining sustainable growth is being achieved. This idea would help in making the resources available for the future generations. This movement is very important because if sustainability is not taken as a serious problem then resources will not be available for the future generations to survive [Bhavsar, Vandana &Samanta, Pradeepta. (2021)]

Banks have come up with different payment systems. Under this UPI, IMPS and other Online payment systems have been framed so that customers can do the transactions easily [Tarikere, K. K., & Joshi, A. D.]

4. Green Banking:

Framing online payment systems has made people to go for different options with respect to banking. Now the health insurance, vehicle insurance can be done through online mode [Kalpana, C & C, PARAMASIVAN. (2015)].

This revolution has led to Green Banking. Under Green banking, cash less and paper less transactions are made. Due to availability of different payments systems, which are cashless and paper less, the banking is moving towards green banking [Suresh, Chandra & Pandey, Bhavna. (2015)]

5. Green Banking Strategy:

There are different strategies used for building a green economy. There are different strategies like use of chatbot for banking, utility of chatGPT for customer interaction, Converting real organizations into virtual organizations etc. Under different strategies of banking, one strategy is to go for cashless transactions. Cashless transactions would help in non physical transactions to execute. This would help in limiting the factor of use of paper for doing physical transactions [Sharma M, Choubey A. Environ Dev Sustain. (2022)].

6. Green Banking Practices:

There have been many practices followed for promoting green banking. One such practice is use of digital payments gateway. These cashless and paper less gateway would build best practices of banking [Ajaz, Dr & Bhat, Aijaz. (2021)].

7. Paperless Transactions:

Most stunning feature of green banking is paperless transactions. Due to this factor, the trees cutting for paper making under banking sector has come done. This has indirectly helped afforestation [Iqbal, Md& Ahmed, Farid. (2015)]

Objectives:

1. To Study the Value of Paper Based Instruments in India.
2. To study the Volume of Paper Based Instruments in India.
3. To study the impact of green banking strategy on Paper Based Instruments in India.

Research Methodology:

Once the data is collected from authentic source, then a two way analysis is done. In this first way is to describe the data using the statistical tools of descriptive statistics. Mean, Median, Mode, variance, Standard Deviation, Skewness and Kurtosis are used for describing the data. After describing data, inferential statistics is used to analyze. Under inferential statistics, Mann Whiney U Test is used to know the difference between paper based transactions before and after initiation of green banking strategies.

Data Collection:

Paper Based Instruments	Value Billion	Volume Million
2011-12	99,012.1	1,341.9
2012-13	1,00,181.8	1,313.7
2013-14	93,316	1,257.30
2014-15	85,439	1,195.80
2015-16	81,861	1,096.40
2016-17	80,958	1,206.70
2017-18	81,893	1,170.60
2018-19	82,461	1,123.80
2019-20	78,250	1,041
2020-21	56,270	670

Source: www.rbi.org.in

Data Analysis:

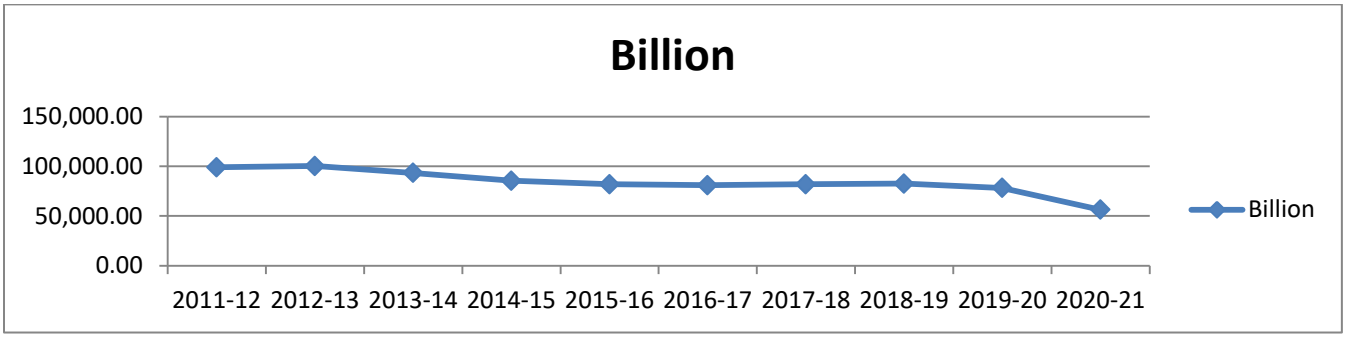
Value of Paper Based Instruments:

Paper Based Instruments	Value Billion
2011-12	99,012.1
2012-13	1,00,181.8
2013-14	93,316
2014-15	85,439
2015-16	81,861
2016-17	80,958
2017-18	81,893
2018-19	82,461
2019-20	78,250
2020-21	56,270

Descriptive Statistics:

Sl.No	Parameter	Value
1	Mean	83,964.19
2	Median	82,177.00
3	Mode	0
4	Variance	155412445
5	Standard Deviation	12466.453
6	Skewness	-0.930634
7	Kurtosis	-2.144566

Graph:



Interpretation: The value of Paper based Transactions have decreased significantly from 2011 -12 to 2020-21

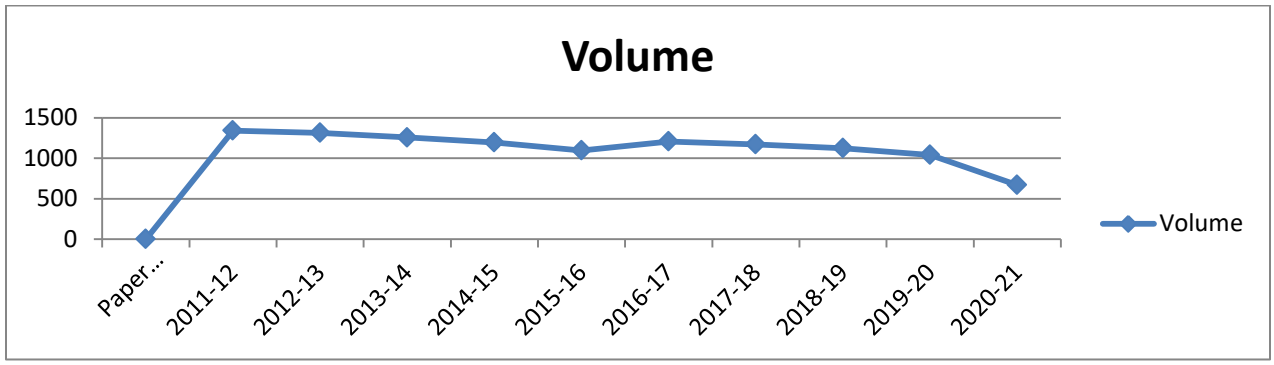
Volume of Paper Based Instruments

Paper Based Instruments	Volume Million
2011-12	1,341.9
2012-13	1,313.7
2013-14	1,257.30
2014-15	1,195.80
2015-16	1,096.40
2016-17	1,206.70
2017-18	1,170.60
2018-19	1,123.80
2019-20	1,041
2020-21	670

Descriptive Statistics:

Sl.No	Parameter	Value
1	Mean	1,141.72
2	Median	1,183.20
3	Mode	0
4	Variance	36225.37
5	Standard Deviation	190.3296
6	Skew	-1.83269
7	Kurtosis	4.360486

Graph:



Interpretation: The volume of paper based instruments have decreased significantly from 2011-12 to 2020-21

Impact Study:

Sl.No	Year	Before Green Banking	Year	After Green Banking
1	2011-12	99,012.1	2016-17	80,958
2	2012-13	1,00,181.8	2017-18	81,893
3	2013-14	93,316	2018-19	82,461
4	2014-15	85,439	2019-20	78,250
5	2015-16	81,861	2020-21	56,270

Mann Whitney U Test

H_0: Both the population sets are same; H_1: Both the population sets are different

1. Arranging the data in increasing order

SL.No	Paper Based Instruments
1	56,270
2	78,250
3	80,958
4	81,861
5	81,893
6	82,461
7	85,439
8	93,316
9	99,012.10
10	1,00,181.80

2. Assigning ranks to each payment

SL.No	Paper Based Instruments	Rank
1	56,270	1
2	78,250	2
3	80,958	3
4	81,861	4
5	81,893	5
6	82,461	6
7	85,439	7
8	93,316	8
9	99,012.10	9
10	1,00,181.80	10

3. Assigning ranks to each group

Before Green Banking	Rank	After Green Banking	Rank
99,012.10	9	80,958	3
1,00,181.80	10	81,893	5
93,316	8	82,461	6
85,439	7	78,250	2
81,861	4	56,270	1

4. Adding ranks of each group

Before Green Banking	Rank	After Green Banking	Rank
99,012.10	9	80,958	3
1,00,181.80	10	81,893	5
93,316	8	82,461	6
85,439	7	78,250	2
81,861	4	56,270	1
	38		17

$R_1 = 38$

$R_2 = 17$

5. Test Statistic

$$U_1 = n_1n_2 + \frac{n_1(n_1+1)}{2} - R_1$$

$$U_2 = n_1n_2 + \frac{n_1(n_1+1)}{2} - R_2$$

$U_1 = 5*5+5(6)/2 -38 = 40-38=2$

$U_2 = 5*5+5(6)/2-17= 23$

Table U Value for $n_1=5$, $n_2=5$ at 0.05 significance= 2

Table U Value = Calculated U Value =2

H_0 is rejected.

Both the population sets are different.

	Volume		Volume
Paper Based Instruments	Million	Paper Based Instruments	Million
2011-12	1,341.90	2016-17	1,206.70
2012-13	1,313.70	2017-18	1,170.60
2013-14	1,257.30	2018-19	1,123.80
2014-15	1,195.80	2019-20	1,041
2015-16	1,096.40	2020-21	670

Mann Whitney U Test

H_0: Both the population sets are same; H_1: Both the population sets are different

1. Arranging the data in increasing order

SL.No	Paper Based Instruments
1	670
2	1,041
3	1,096.40
4	1,123.80
5	1,170.60
6	1,195.80
7	1,206.70
8	1,257.30
9	1,313.70
10	1,341.90

2. Assigning ranks to each payment

SL.No	Paper Based Instruments	Rank
1	670	1
2	1,041	2
3	1,096.40	3
4	1,123.80	4
5	1,170.60	5
6	1,195.80	6
7	1,206.70	7
8	1,257.30	8
9	1,313.70	9
10	1,341.90	10

3. Assigning ranks to each group

Before Green Banking	Rank	After Green Banking	Rank
1,341.90	10	1,206.70	7
1,313.70	9	1,170.60	5
1,257.30	8	1,123.80	4
1,195.80	6	1,041	2
1,096.40	3	670	1

4. Adding ranks of each group

Before Green Banking	Rank	After Green Banking	Rank
1,341.90	10	1,206.70	7
1,313.70	9	1,170.60	5
1,257.30	8	1,123.80	4
1,195.80	6	1,041	2
1,096.40	3	670	1
	36		19

$R_1 = 36$

$R_2 = 19$

5. Test Statistic

$$U_1 = n_1n_2 + \frac{n_1(n_1+1)}{2} - R_1$$

$$U_2 = n_1n_2 + \frac{n_1(n_1+1)}{2} - R_2$$

$U_1 = 5*5+5(6)/2 -36 = 40-36=4$

$U_2 = 5*5+5(6)/2-19= 21$

Table U Value for $n_1=5$, $n_2=5$ at 0.05 significance= 2

Table U Value > Calculated U Value =2

H_0 is rejected.

Both the population sets are different.

Findings and Suggestions:

1. The mean, median and mode of value of paper based transactions forms the following relationship: Mean> Median> Mode.
2. The value of paper based transactions is negatively skewed in nature.
3. The kurtosis is less the 3 value.
4. The value of paperbased instruments is platykurtic in nature.
5. The mean, median and mode of volume of paper based transactions forms the following relationship: Mean> Median> Mode.
6. The volume of paper based transactions is negatively skewed in nature.
7. The kurtosis is less the 3 value.
8. The Volume of paperbased instruments is platykurtic in nature.

9. The Mann Whitney U calculated value for value of paper based instruments is 2 and 23 which is greater than and equal to table value of Mann Whitney U Test.
10. There is a significant difference between two groups of value of paper based instruments.
11. The Mann Whitney U calculated value for volume of paper based instruments is 4 and 21 which is greater than and equal to table value of Mann Whitney U Test.
10. There is a significant difference between two groups of volume of paper based instruments.
11. There is a positive impact of Green Banking on paper based instruments as the value and volume of paper based instruments both have decreased.

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