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## The “SIR” Impact of Demonetization on Indian Economy- Measure of Innovation

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**Abstract:** *The concept of demonetization and its contribution to economic growth has become one of the most attractive topics for discussion in all political, academic and other decision-making forums of the current times. The critics of demonetization are absolutely right about the adverse impact of the policy, considering the short-term period. The real impact of demonetization, however, must be weighed in the long-run and not in the short-run. Considering the negative impact of demonetization on the economy is only nominal and short-term, it is necessary to attach statistical substantiation to vouchsafe that the long-term impact of demonetization on the growth of the economy is increasing and sustainable. It is in this context the current research holds its significance.*

*Research is conducted to assess the “SIR” impact of demonetization on Indian Economy. “SIR” stands for Sustainability, Innovation, and Rapidity. Accordingly the research is divided into three parts as: “The “SIR” impact of demonetization - statistical evidence testifying the contribution of demonetization to long-term sustainable economic growth in India”, “The “SIR” impact of demonetization-Measure of Innovation”, “The “SIR” impact of demonetization-Measure of Rapidity of Economic Growth”. While the first part of the work is presented in our last research paper at the International conference on “Recent trends in Technology and its impact on the economy of India”, conducted in Punjab on 24<sup>th</sup>, October 2017, the present paper describes how demonetization has contributed to innovation in the country, using Balanced Score Card technique. The results of the study clearly indicated that demonetization has promoted innovation by 46% within less than 10 months period making the country a hot bed for innovation.*

**Keywords:** *Statistical Evidence, GDP, Demonetization, Sustainable, Vouchsafe, Macroeconomic.*

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### I. INTRODUCTION

The concept of demonetization and its contribution to economic growth has become one of the most attractive topics for discussion in all political, academic and other decision-making forums of the current times. The critics of demonetization are absolutely right about the adverse short-term impact of the policy. It has caused major inconvenience to a vast majority, particularly to those who have the least financial resources. Of course, it will shave off some amount of GDP growth for anywhere between a quarter and three to four quarters because of the economic disruption it has caused in different sectors of the economy. According to some critics, this alone is sufficient to damn demonetization. After all, the short-run is all that matters because, in the long run, we are all dead, as the noted economist Keynes put it. While that proposition may be true for individuals, it certainly is not true for nations. There is also medium-term which is longer than an electoral cycle or two. Medium-term is certainly longer than a quarter or two but shorter than a generation which runs over 30 or 40 years. India has a very long future, even if individuals do not. The critics of demonetization are absolutely right about the adverse short-term impact of the policy. The real impact of demonetization must be weighed in the medium or long-term run and not in the short-run.

Though it is acknowledged theoretically that the negative impact of demonetization on the economy is only nominal and short-term, at least by some optimists, it is noteworthy that no statistical evidence is given to vouchsafe that the long-term impact of demonetization on the growth of the economy is increasing and sustainable. It is in this context the current research holds its significance.

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## **II. STATEMENT OF THE PROBLEM**

What we measure is what we get. The measurement system strongly affects not only the behavior of managers and employees but also the changes in the economy. Organizations’ may introduce new strategies and innovative operating processes intended to achieve breakthrough performance, but continue to use the same short-term financial indicators such as return-on-investment, sales growth, and operating income, which they have used for decades. These managers fail not only to introduce new measures to monitor new goals and processes but also fail to question the relevance of the old measures to the new initiatives. Effective measurement, therefore, must be an integral part of the management process.

The Balanced Scorecard (BSC) is a performance measurement system that addresses the weaknesses of the traditional performance measurement systems. It has added strategic non-financial performance metrics to traditional financial metrics, thus, providing a ‘balanced’ view of an organizational performance. The BSC is a management system that can motivate breakthrough improvements in such critical areas as a product, process, customer, and innovation. The BSC is a strategic planning and management system that organizations use to communicate what they are trying to accomplish, Align the day-to-day work that everyone is doing with strategy, Prioritize projects, products, and services, measure and monitor progress towards strategic targets. The Balanced Scorecard links performance measures to four important perspectives such as customer (how do customers see the organization), Internal perspective (what organization must excel at), innovation and learning perspective (can organization continue to improve and create value) and financial perspective (how do the organizations look to shareholders).

In the last few years, organizations were compelled to innovate just to stay competitive. However, the value added by that innovation is rarely measured. At the same time, the Balanced Score Card (BSC) became popular as a tool to measure business performance even in terms of innovation. Unfortunately, the traditional BSC is not appropriate to measure the value added by innovation. Taking the traditional Balanced Score Card as the basis and customizing it for measuring innovation driven by demonetization, the current study fulfills its second objective that demonetization became the basic driver for innovation in India.

## **III. OBJECTIVE OF THE STUDY: MEASURING INNOVATION PROMOTED BY DEMONETIZATION**

The one seemingly difficult-to-measure objective is “Innovation”. “Innovation” is typically seen as a strategic objective in the Internal Process Perspective on the organization-wide strategy map. Its roots are usually found in a “Grow the Business” strategic theme or “Operational Excellence” strategic theme in which “*transformation through innovation*” is a *key driver*. The objective of the current research is to measure the seemingly immeasurable “innovation”, promoted by the demonetization driver.

## **IV. METHODOLOGY**

Demonetization is driving innovation transition from capital war to innovation war. In the process of accelerating the push towards a cashless economy, demonetization is increasing the need for innovation in different areas.

Necessity is the mother of invention, as is rightly said, Manjunath Talwar and Abhijit Khasnis, have come up with an online portal, “<http://CashNoCash.com>” – to determine if a nearby bank or ATM has cash available or not. The website allows a user to search the nearest ATMs based on their current location. Also, one can create alerts to send notifications when the ATMs get refilled by cash. India is currently in the middle of an all out movement to modernize the way things are paid for. New bank accounts are being opened at a heightened rate, e-payment services are seeing rapid growth, cash-on-delivery in e-commerce has crashed, and digitally-focused sectors like the online grocery business have started booming. Even the vegetable vendors on the streets have opened up Paytm accounts and they have a machine outside their shop where someone can scan the bar code and make the payment. A lot more retail outlets are accepting e-wallets, including my laundry provider and *dabbawalas*. This is revolutionary, and survival of the fittest.

While encouraging the private mobile players to innovate digital payment solutions, the government has rolled out its own payment app, Bharat Interface for Money (BHIM), built on India’s Unified Payment Interface (UPI) that allows consumers to send and receive payments from any bank. BHIM mimics one of the most important attributes of cash far more ubiquitous than the majority of payment alternatives simply because it is interoperable, all on account of demonetization. Each day an innovation is coming up either in payment scenario or manufacturing field or marketing area to name a few. The demonetization initiative has been a boon for India’s e-payment providers resulting in various innovative solutions.

For measuring the innovation driven by demonetization, the current study has taken certain parameters representing each of the four perspectives of BSC. These parameters are detailed as under. Beginning with digital commerce which is taken for financial perspective, the study proceeded with a selection of digital lifestyle for customer perspective, digital citizenship for internal process perspective and digital literacy for education & growth perspective. The Key performance indicators (KPI) are identified for each

of the above perspectives. The digital transactions representing all online- non-cash transactions that have taken place in India, from Nov 8<sup>th</sup> 2016 till date, are taken as the KPI for financial perspective. In the same way, mobile broadband access and smart phone adoption are taken as KPIs for representing the customer perspective. BHIM App users and Aadhaar Card issues are considered for representing the third internal process perspective. Finally, financial literacy is taken as the KPI for the last perspective which is the learning and growth perspective. All the above customized perspectives and KPIs are summarized below:

- Digital Transactions-Indicator shows how the solution "Digital commerce" helps to achieve the business goal "Measuring Innovation".
- Mobile Broadband Access-Indicator shows how the solution "Digital lifestyle" helps to achieve business goal "Measuring Innovation"
- Smartphone adoption-Indicator shows how the solution "Digital lifestyle" helps to achieve business goal "Measuring Innovation"
- BHIM APP-Indicator shows how the solution "Digital citizenship" helps to achieve business goal "Measuring Innovation"
- Adhar Card-Indicator shows how the solution "Digital citizenship" helps to achieve business goal "Measuring Innovation"
- Financial literacy-Indicator shows how the solution "Digital literacy" helps to achieve business goal "Measuring Innovation"

The parameters forecasted till 2020, by the McKinsey & Company for all emerging economies constituted the benchmark for comparison in measuring the innovation in India. The most suitable among the available parameters which would enable comparison on parity, pertaining to the post-demonetization period in India, was taken as the KPIs. These target parameters were published by the McKinsey Global Institute in an article called “Digital Finance for all: Powering Inclusive Growth in Emerging Economies”. The data relating all the chosen parameters in India was collected from different sources such as Economic Times, India TV News, Livemint.com and the World Bank publications. With the benchmark parameters and the collected data, the BSC was designed using the software called “BSC Designer PRO”. The figure- 1 below depicts the interrelation between the four perspectives as per the original BSC Designer PRO software for measuring innovation.

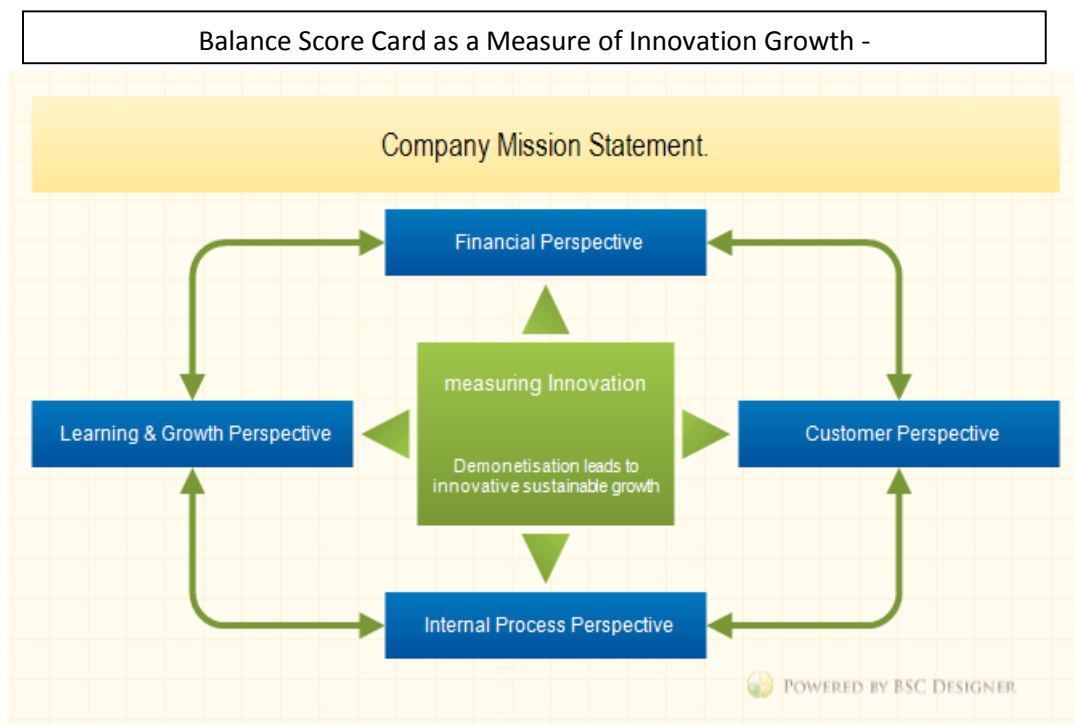


Figure 1: BSC and the interrelation between four perspectives

The above diagram has been customized for the current study using the chosen parameters for each of the perspectives, as described below:

To customize the BSC for measuring innovation from a finance perspective, digital commerce, digital lifestyle, digital citizenship, and digital literacy are taken as four KPIs and the relevant data for these KPIs is collected from the sources that are mentioned in the methodology. Mobile broadband access and smartphone adoption for customer perspective, BHIM App usage, and Adhar Cards issued for internal process perspective; and financial literacy for education and growth perspective, have become the KPIs.

**Digital Commerce:** The digital transactions in India for the year 2017 from 8<sup>th</sup> November until 20<sup>th</sup> September, come to 55% as per the data are given by livemint.com as against the target of 79%, given by pwc.com.

**Digital Lifestyle:** Mobile broadband access is estimated at 51% in India, for the year 2017 given by economic times while the target rate is taken as the forecasted rate of emerging economies which is 68% given by [www.gsmaintelligence.com](http://www.gsmaintelligence.com). The smartphone adoption for India in the year 2017 is 51% as given by livemint.com while the target rate is taken as 75%, given by dazeinfo.com.

**Digital Citizenship:** BHIM App usage and Aadhar cards issued are taken as parameters to analysis the change in the innovation. BHIMApp user data is computed at 14.35% which is calculated as % of the total population with the total number of BHIM App users and given by India TV news along with the benchmark of 45.61%. Since the BHIM APP is customized as per the need of Indians, data from emerging countries is not available. Therefore that Aadhar cards issued in the year 2017 is 93% given by UIDAI and target is taken as 100% set by UIDAI (Unique Identification Authority of India).

**Digital Literacy:** Financial literacy is taken as the parameter to analysis the change in the innovation. For India, financial literacy for the year 2017 comes to 24% as per the article presented in 6<sup>th</sup> international conference on recent trends in engineering, science and management held on 8<sup>th</sup> January 2017, at Punjab and the target is taken as 73% which is the forecasted rate for emerging economies till 2020, given by UFA (*Universal Financial Access*).

### V. ANALYSIS AND INTERPRETATION

Using the BSC designer PRO software and adopting the parameters selected for each of the perspectives, the output representing the measure of innovation was generated. In the balance score card, there are two measuring tools that help in analysing the generated output. The first of these tools is known as the “Progress” and the second one is known as the “Performance”. The Progress tool of BSC software indicates how much more one needs to move ahead to achieve the target set for the chosen period. The chosen period for the current study is 2020 since the data availability is restricted to that period. The “Performance” tool makes one understand how much we have achieved as per the target. The following diagram which represents the net output from the BSC Software is technically called the “Optimization Chart” (OC). This OC indicates the total innovation caused by demonetization in terms of performance percentage is 45.92% as is shown in figure 2 below.

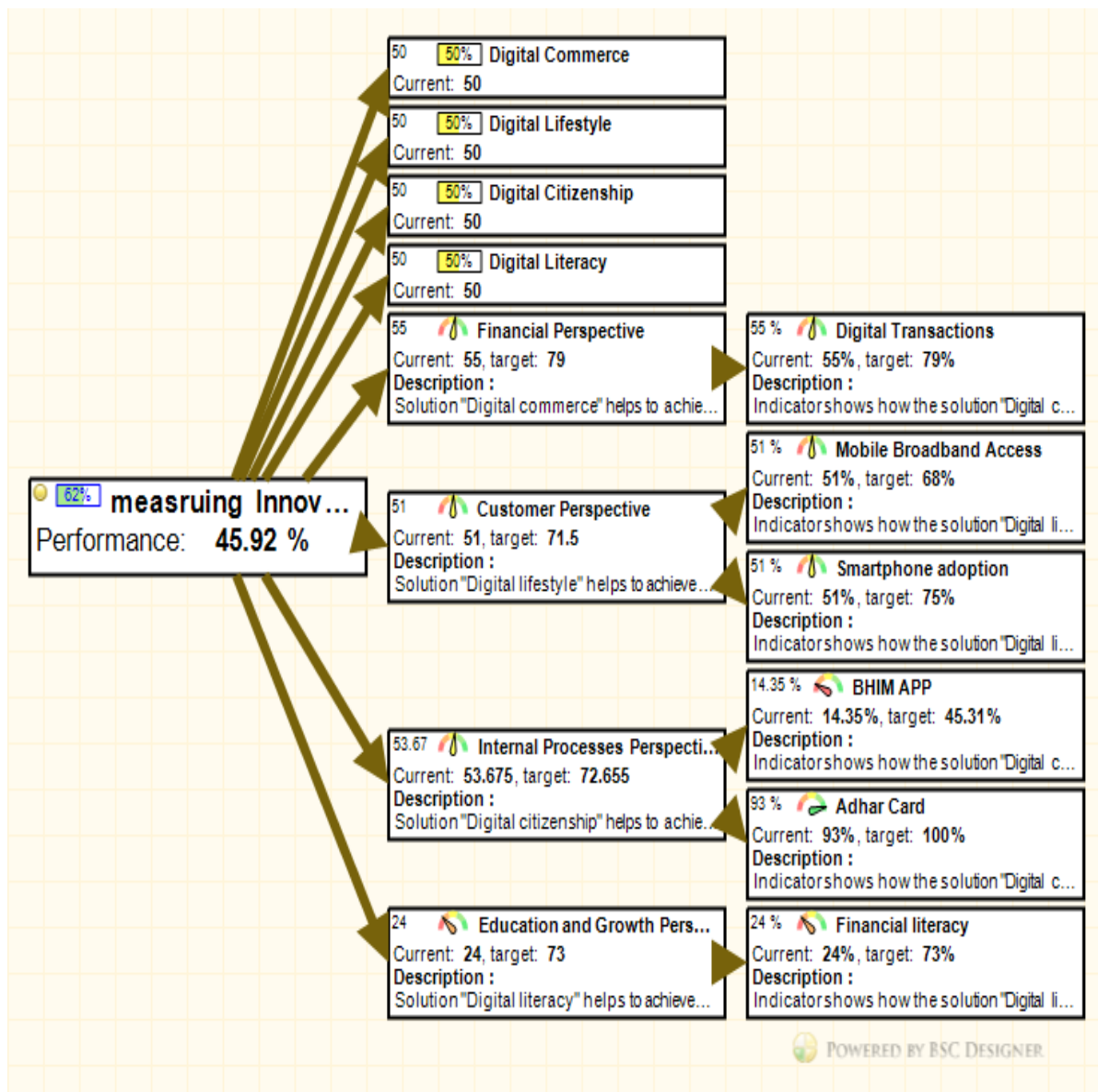


Figure 2: The customized diagram thus generated using the BSC Software is depicted below

The following figure-3 gives graphic representation for an overall measure of innovation in India during post demonetization period in comparison with the set target. The performance graph below indicates that we have achieved 46% percent of innovation during post demonetization as against the fixed target in less than 10 months period from the date of announcement of demonetization till the date of collection of this data in September 2017

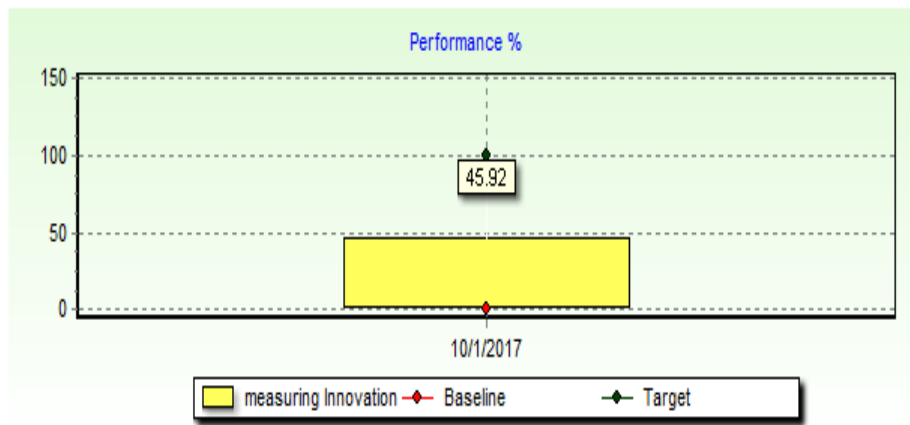


Figure-3: Overall measure of innovation in comparison with the target

The following figure - 4 gives graphic representation to the measure given by the Progress tool of BSC software and indicates how much more we need to move ahead to achieve the target set for the chosen period. We need to still achieve 62 % level of results in the area of innovation, as can be seen in the figure below:

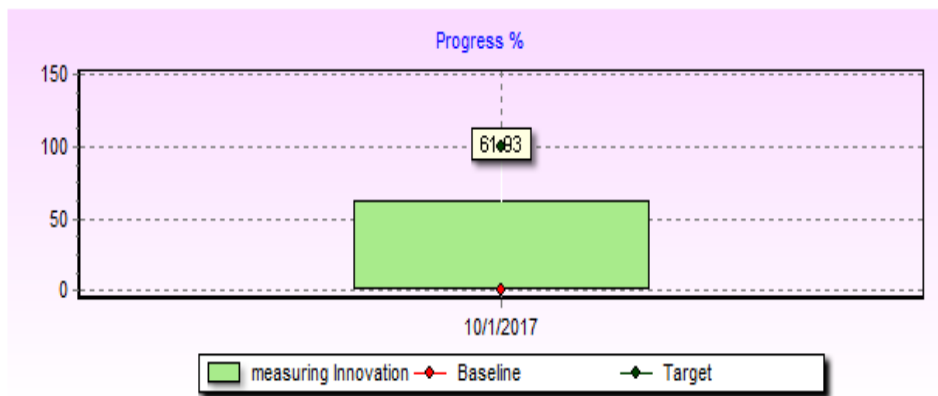


Figure - 4: Representation of how much more we need achieve in innovation

Considering the individual components which are taken as KPIs with respect to the four perspectives the following pie chart (figure-5) shows how much each of the parameters has contributed to the overall innovation. The KPIs digital commerce, digital lifestyle, digital citizenship and digital literacy constituting part of the digital transaction for financial perspective contribute to 29.9 % or 30% of innovation that has taken place during post demonetization period i.e in less than 10 months period of the announcement of demonetization move. This is followed by BHIM App uses and Adhar cards issued which are chosen as KPIs for internal processes perspective have contributed to 29.80% or 30 % of the total innovation, followed by customer centric perspective with mobile broad band access and smartphone adoption as KPIs added to 27.8% or 28% of innovation. The balance of innovation is coming from education and growth.

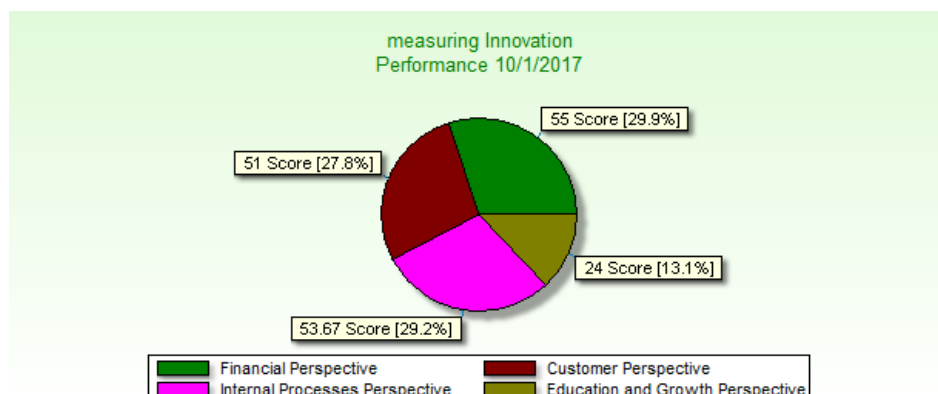


Figure-5: Contribution of chosen parameters to innovation – post-demonetisation period



The following figure indicates how much more can come from each of the perspectives to innovation. As is seen in figure 6, internal process perspective can contribute to 30% more, customer perspective can contribute to 29%, financial perspective to another 28% and the balance can come from 13% to innovation in India during the current period.

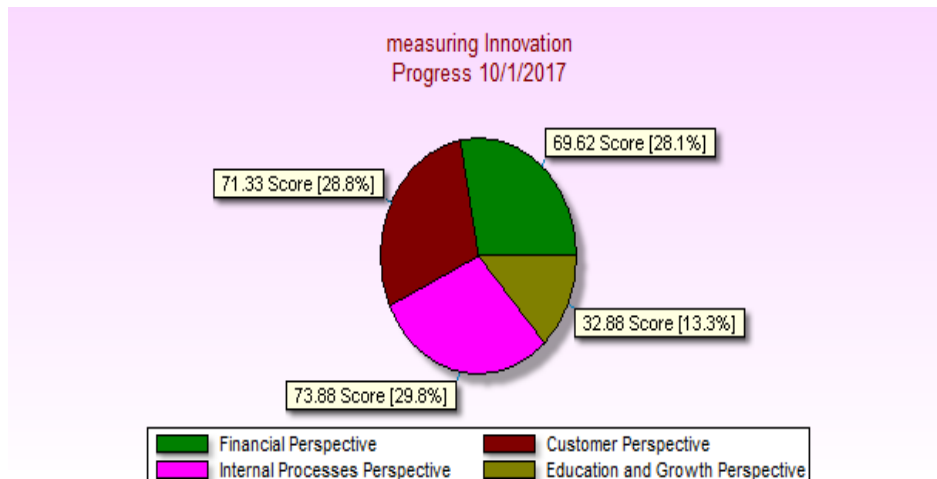


Figure 6: Diagrammatic representation showing how much more needs to be done

In the following paragraph, digital transactions, mobile broadband access, smartphone adoption, BHIM App used, Adhar Cards issued and financial literacy, are individually analyzed as KPIs, to understand their contribution to innovation in the country in numerical terms in comparison with the benchmark selected. The following figures indicate their individual contribution as against the benchmark. Figure- 7 indicates that digital transactions have contributed to 55% of innovation as against 79% target set for 2020.

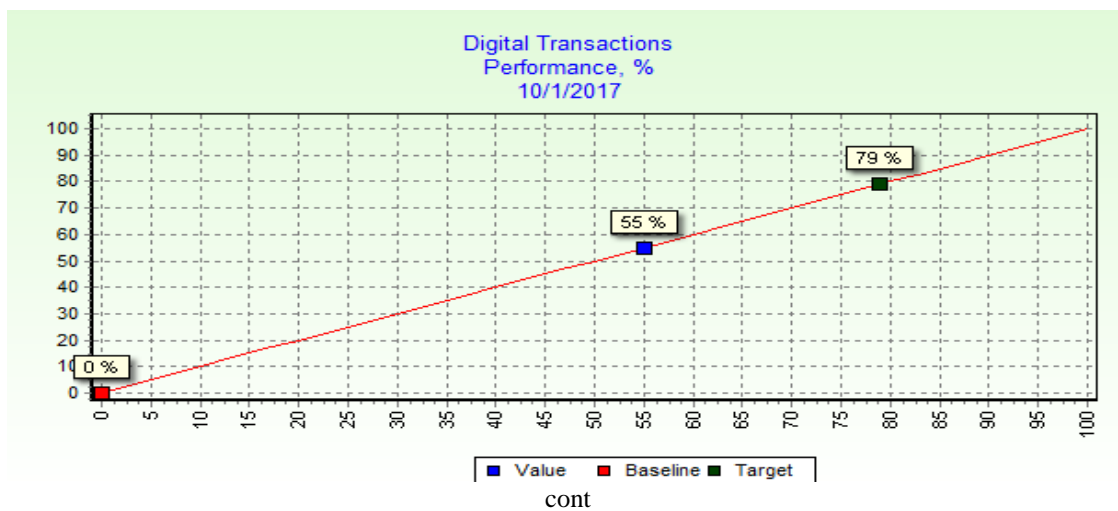


Figure – 7: Contribution of digital transactions to innovation during post-demonetization

The following figure -8 gives numerical representation to Mobile Broad Access contribution to innovation which comes to 51% as against the target value of 68% for India vision 2020.

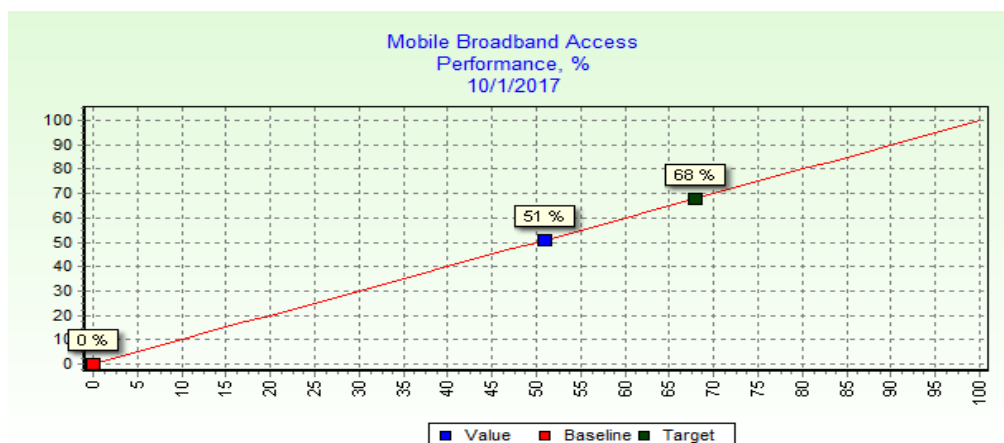


Figure – 8: Contribution of Mobile Broadband Access to innovation during post-demonetization

The following figure -9 gives numerical representation to Smartphone adoption contribution to innovation which comes to 51% as against the target value of 75% as set for India vision 2020.

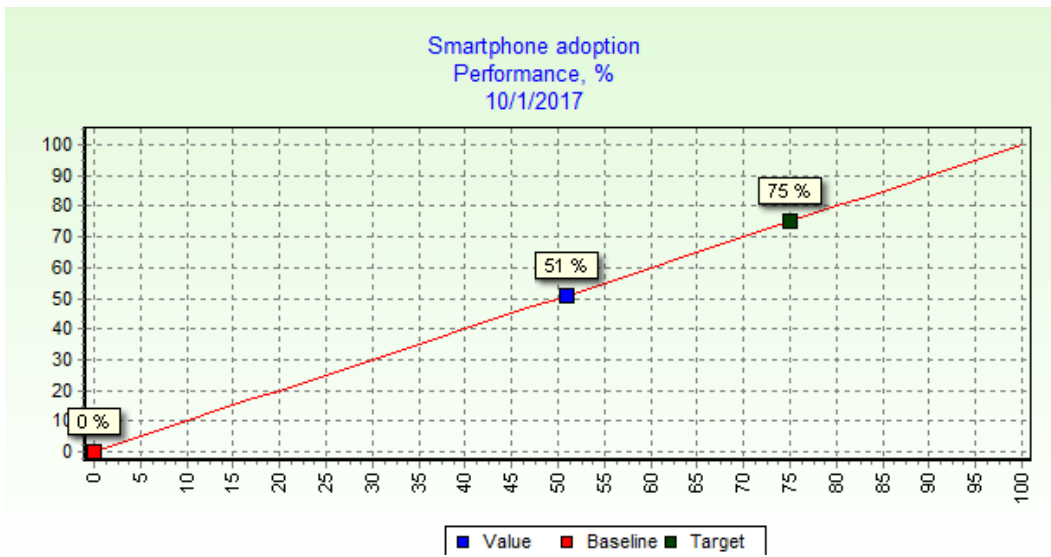


Figure – 9: Contribution of Smartphone adoption to innovation during post-demonetization

The following figure -10 gives numerical representation to BHIM App contribution to innovation which comes to 14.35% as against the target value of 45.31% as set for India 2020.

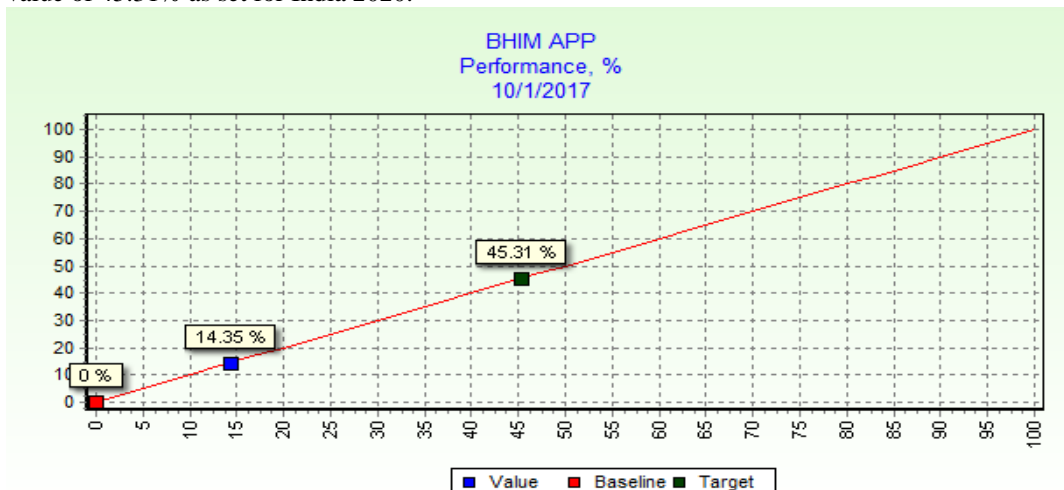


Figure – 10: Contribution of BHIM App to innovation during post-demonetization

The following figure -11 gives numerical representation to the contribution of Adhar Cards issued to innovation which comes to 93% as against the target value of 100%.

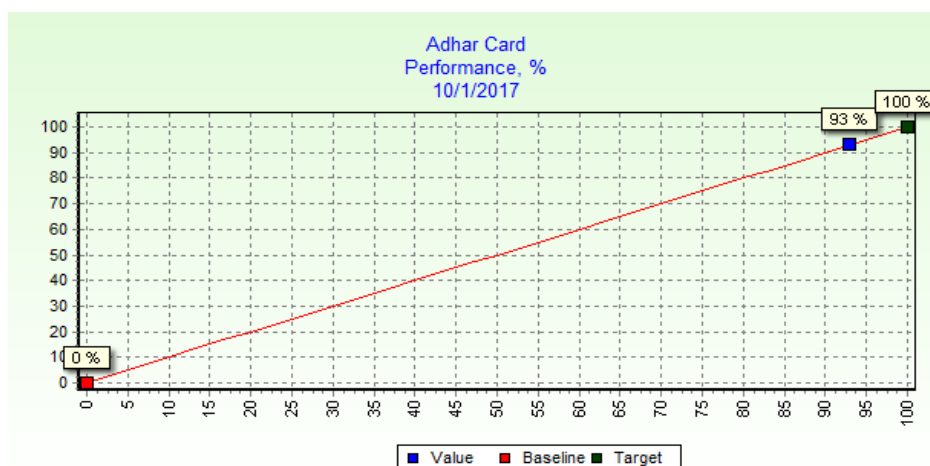


Figure – 11: Contribution of Adhar Cards issued to innovation during post-demonetization

The following figure -12 gives numerical representation to the contribution of financial literacy to innovation which comes to 24% as against the target value of 73% set for India 2020.

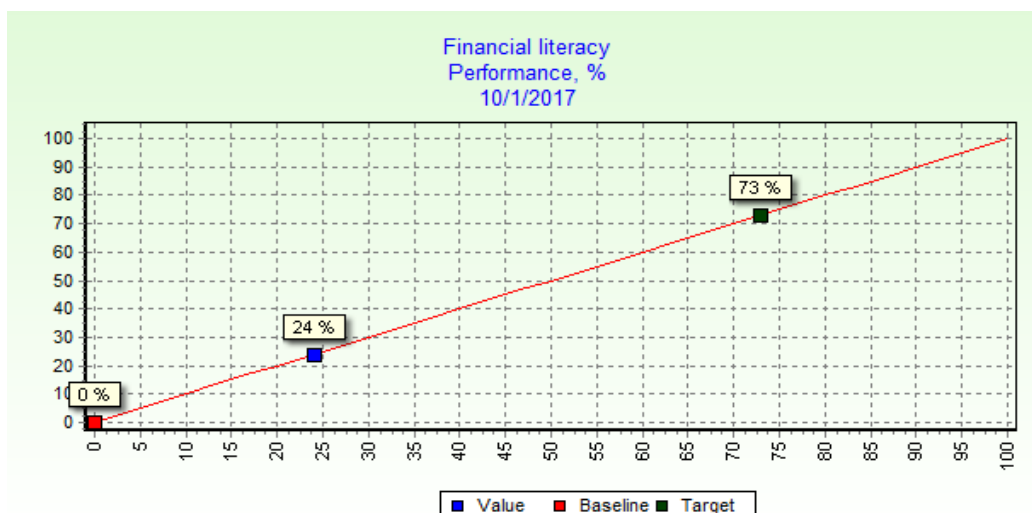


Figure – 11: Contribution of Financial Literacy to innovation during post-demonetization

## VI. CRITICAL SUCCESS FACTORS

Following discussion focuses on the critical success factors that have gone well to ensure the success of the latest demonetization drive and represent areas that must be given special and continual attention to bring about high performance in the economy:

- **India’s highest ever detection of Blackmoney:** Scrutiny of suspected 18 lakh accounts done, Cash deposits worth Rs 2.89 lakh crore under investigation, Advance data analytics tools identified 5.56 lakhs new suspect cases, 4, 73,003 suspicious transactions detected, Undisclosed income worth Rs. 29,213 crores detected and admitted, Black money worth Rs 16,000 crore did not return post demonetization, 21 per cent reduction in currency in circulation. (Times of India.com, Aug 31, 2017)
- **Unprecedented increase in tax compliance:** 56 lakh new tax payers added, Number of returns filed increase 24.7 per cent compared to 9.9 per cent in previous year, Advance tax collections of personal income tax grow at 41.79 per cent over same period of last year, Personal income tax under self-assessment tax grow at 34.25 per cent over same period last year. (Times of India.com, Aug 31, 2017)
- **Big cleaning up for India’s financial system:** Transactions of more than three lakh suspected shell companies under the radar, 2.1 lakh shell companies de-registered, Around 450 companies delisted and 800 untraceable companies to be further delisted, More than 400 benami transactions identified and market value of properties attached more that Rs 800 crore.
- **Slew of benefits to the country as a whole:** Deposits in the banking system increased to Rs 3 lakh crore, additional liquidity helped reduce interest rates by 100 basis points, digital payments increase by 56 per cent from 71.27 crore transactions in October 2016 to 111.45 crore transaction in May, 2017, more than one crore workers added to EPF and ESIC system post-demonetisation, bank accounts opened for about 50 lakh workers to get their wages credited directly to their accounts.

## CONCLUSION

India has become a hotbed of innovation during the post demonetization period. Beginning with innovation in the creation of technology hubs which are focusing on developing cutting-edge technology based payment solutions for enabling safer and more secure transactions for the Indian as well as global markets, extending to supporting startups to develop solutions to address the challenges facing the payments landscape and reaching to finding innovative solutions to real life problems. Besides making the banking sector healthier and paving the way for turning the country into “digital India”, the real success of demonetization can be seen in the way the unorganized and the subterranean economy is getting streamlined contributing to bridging the gap between rural-urban divide.

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