

Innovations In Banking Sector To Improve The Operational Efficiency Of Banks

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Abstract - In this paper it is tried to explain the different technical tools helping the banks to improve the operational efficiency of the banking industry. Net banking, smart watches, in car app, blockchain technology, ibeacon and Bluetooth Low Energy (BLE) technology offers banks the ability to personalize services for customers in branches. Barclays is one of the first to trial this, using the indoor position system improve accessibility for customers with disabilities – using an app notify staff of requirements upon arrival – and there is plenty of potential for further use. OCULUS RIFT Video banking is only just gaining ground among the likes of Barclays, but Wells Fargo's aims are even more ambitious. The US bank has been testing the use of Oculus Rift virtual reality headsets at its Digital Labs in San Francisco, offering customers the ability to 'virtually' enter a branch and speak to a teller face to face. CRYPTO CURRENCY Bitcoin may be seen as more of a threat to centralized banking systems than an opportunity, but, despite its notorious volatility and problems with major exchanges, the concept has remained. In 2014, German 'Web 2.0' lender Fidor announced plans to launch the first specialized bank for cryptocurrencies along with currency exchange Kraken, offering a potential glimpse of more mainstream usage.

Key word: 1. Bitcoin, 2. Blockchain Technology, 3. Internet banking and 4. ROBOTICS

I. INTRODUCTION

The banking system in India is significantly different from other Asian nations because of the country's unique geographic, social, and economic characteristics. India has a large population and land size, a diverse culture, and extreme disparities in income, which are marked among its regions. There are high levels of illiteracy among a large percentage of its population but, at the same time, the country has a large reservoir of managerial and technologically advanced talents. Between about 30 and 35 percent of the population resides in metro and urban cities and the rest is spread in several semi-urban and rural centers. The country's economic policy framework combines socialistic and capitalistic features with a heavy bias towards public sector investment. India has followed the path of growth-led exports rather than the "export led growth" of other Asian economies, with emphasis on self-reliance through import substitution. These features are reflected in the structure, size, and diversity of the country's banking and financial sector. The banking system has had to serve the goals of economic policies enunciated in successive five-year development plans, particularly concerning equitable income distribution, balanced regional economic growth, and the reduction and elimination of private sector monopolies in trade and industry. In order for the banking industry to serve as an instrument of state policy, it was subjected to various nationalization schemes

in different phases (1955, 1969, and 1980). As a result, banking remained internationally isolated (few Indian banks had presence abroad in international financial centers) because of preoccupations with domestic priorities, especially massive branch expansion and attracting more people to the system. Moreover, the sector has been assigned the role of providing support to other economic sectors such as agriculture, small-scale industries, exports, and banking activities in the developed commercial centers (i.e., metro, urban, and a limited number of semi-urban centers).

II. REVIEW OF LITERATURE

There is a sizable literature on banking sector in conforming to its long history and economic importance. A good deal of literature exists at broad levels with operational performance. However, relevant studies have been presented hereunder:

Dr, D. Maheshwara Reddy and K. V. N. Prasad (2011)¹ written an article entitled "Evaluating performance of Regional Rural Banks-An Application of CAMEL Model", In this paper an attempt is made to discuss the financial

¹ Dr, D. Maheshwara Reddy and K. V. N. Prasad. "Evaluating performance of Regional Rural Banks-An Application of CAMEL Model",

performance of selected regional rural banks (Andhra Pragathi Grameena Bank and Saptagiri Grameena Bank) during post reorganization period. To measure the financial soundness of selected sample banks, the CAMEL Model which is an appropriate technique is adopted. Finally it was concluded that APGVB rated top on the basis of overall performance.

K.V.N. Prasad and Dr. A.A.Chari (2011)² conducted a study to evaluate “Financial performance of public and private sector banks in India”. In this study, an effort has been made to evaluate the operational of top four banks in India viz., SBI, PNB, ICICI and HDFC and conclude that on overall basis HDFC rated top most position.

Dr. M. Syed Ibrahim (2010)³ conducted a study on “Operational Performance of Indian Scheduled Commercial Banks-An Analysis”. In this study, an effort has been made to evaluate the operational performance of the commercial banks in India with a special reference to the schedule commercial banks since 2000. The study is diagnostic and exploratory in nature and makes use of secondary data. The study finds and concludes that the Scheduled Commercial Banks in India have significantly improved their operational performance.

Smitha Sambrani (2005)⁴ in her Ph.D. thesis studied about the impact of IT on Banking Sector in two objectives i.e. for bank customer – to analyze the awareness and use of IT by customers in banking and for bank operations- to study the role of IT department in application of IT in banks. In conclusion it can be said that it is imperative for banks to implement IT in their operations as technology has a positive impact on profitability by improving customer service and reducing business risk.

Thumulu Adhi Mallaiah (2004)⁵ in his Ph.D. thesis highlighted an overview of customer Services and Financial performance of Commercial Banks in India. For maximizing the bank’s profitability, customer was treated as the focal point, assuming that the improvement in the customer service has relation with the profitability of banks.

Many other aspects such as front office services, and outside bank services have been dealt with.

S.Syamali (2004)⁶ concluded that, “As the degree of uncertainty is more in banking sector they have to depend more on building “Customer Relationship” which is a permanent asset bringing regular income rather than mere hardware which have obsolescence as a critical factor. “Technology shall be prudently used more as a means to achieve the end result”.

R.V.Shastri (2003)⁷ highlighted Post Reform Scenario, trading off Commercial Vs Social banking, technology related issues. Structural changes through mergers and acquisition, Profits & Profitability and Strengthening of HRD, through performance linked reward system, and improving training facilities etc.

Objectives of the study

The following are the objectives of the study of innovations in banking sector concerned to the operational efficiency of Bank of Baroda

1. To study the various technological input which boost the operational efficiency of the banking sector in India.
2. To evaluate the operational performance of Bank of Baroda Bank.
3. To draw conclusion from the study.

Scope of the study

The scope of the study is confined to the various technological innovations which boost the operational efficiency of the banking sector and with specific the operational efficiency of Bank of Baroda. The period of study of the Bank of Baroda is related to 2008-09 to 2017-18.

III. RESEARCH METHODOLOGY

The methodology to be adopted for collection of the data and analysis of data and interpretation of data is from the secondary source.

Statistical Techniques used to Analyses Data

The data is analyzed with the help of Sum, Average, Standard deviation and CAGR (Compound Annual Growth Rate)

Technical innovations of the banking sector

⁶ S.Syamali: “Customize, Compete & Conquer Through Technology”, IBA Bulletin, March 2004, pp 5-8.

⁷R.V.Shastri: “Towards A New Banking Order”, IBA Bulletin, Special Issue, March 2003.

² .K.V.N. Prasad and Dr. A.A.Chari.Financial performance of public and private sector banks in India”.

³.Dr. M. Syed Ibrahim. “Operational Performance of Indian Scheduled Commercial Banks-An Analysis”.

⁴SmithaSambrani. “The Impact of IT on Banking Sector”, Unpublished Ph.D. Thesis, Osmania University Hyderabad, 2005.

⁵ TumulaAdhiMalliah: “Customer Service in Commercial Banks - A Comparative Study of Select Public Sector ns Private Sector Banks”, Osmania University, Hyderabad, 2004.

The banking system's international isolation was also due to strict branch licensing controls on foreign banks already operating in the country as well as entry restrictions facing new foreign banks. A criterion of reciprocity is required for any Indian bank to open an office abroad. These features have left the Indian banking sector with weaknesses and strengths.

1. BIOMETRIC

From contactless, to finger scanning and iris recognition, biometrics technology is quickly changing the banking industry and changing the way people make and receive payments. The advanced technology is quickly replacing the emphasis of passwords and the need to remember pins all around the world. Mastercard, for example, is prepping the launch of a new contactless card with an embedded fingerprint sensor, creating a more secure transaction method. After recent cyber attacks, HSBC is stepping up its security procedures with voice and touch recognition security services in the UK. According to reports, this will alleviate the need for passwords and memorable questions for up to 15 million banking customers.

2. IN CAR APP

Smart technology has also become so advanced over the years that apps are integrated and supported by car systems to give drivers easier access to banking. In 2017, several manufacturers made it a point of call to embed unique technologies like smart pay-in-car apps as a form of digital payments. Using Ford's SYNC with AppLink system, drivers can check their account balance and transfer funds, as well as locating nearby branches and ATMs.

3. SMART WATCHES

Wearable devices, particularly smartwatches, have grown across various sectors. In banking, smartwatches have been adopted as an easy way to transfer and make payments. For instance, since the launch of the Apple Watch and other big brand-named versions, online banking has easily become a favorite for many.

4. FACIAL RECOGNITION

There are many types of authentication for banks and payment firms to consider though, and Chinese e-commerce firm Alibaba believes that payments could be made with a smile. Alibaba became one of the first to explore the technology, with the launch of its 'Smile to Pay' system in 2016. It was later made available as part of its Alipay platform to give customers easy access to payments. Other e-commerce and bank companies like Lloyds Banking Group have also since began offering facial recognition payments.

5. BLOCK CHAIN

Blockchain technology has the potential to have a massive impact on the financial sector and central banks all around

the world are investigating use cases, from payments to launching digital currencies. Although blockchain hasn't yet been deployed by every bank or e-commerce firm, the technology is definitely increasing on the minds of most organizations in this space.

6. ROBOTICS

In a more extreme example of branch service automation, customers at certain branches of Japan's Bank of Tokyo Mitsubishi UFJ are set to be greeted by 58 centimeter tall robots. Named NAO, the humanoid robot, created by French robotics company Aldebaran Robotics, can answer basic customer service questions in 19 languages, as well as analyzing customers' facial expressions and behavior.

7. AUGMENTED REALITY

It may be the stuff of near-future sci-fi film *Minority report*, but Australian Bank Westpac last year announced the release of an augmented reality app for mobile devices. The 3D imaging software provides visualizations of balances and transaction history, as well as overlaying details over nearby Westpac branches.

8. BEACON TECHNOLOGY

iBeacon and Bluetooth Low Energy (BLE) technology offers banks the ability to personalize services for customers in branches. Barclays is one of the first to trial this, using the indoor position system improve accessibility for customers with disabilities – using an app notify staff of requirements upon arrival – and there is plenty of potential for further use.

9. OCULUS RIFT

Video banking is only just gaining ground among the likes of Barclays, but Wells Fargo's aims are even more ambitious. The US bank has been testing the use of Oculus Rift virtual reality headsets at its Digital Labs in San Francisco, offering customers the ability to 'virtually' enter a branch and speak to a teller face to face.

10. CRYPTO CURRENCY

Bitcoin may be seen as more of a threat to centralized banking systems than an opportunity, but, despite its notorious volatility and problems with major exchanges, the concept has remained. In 2014, German 'Web 2.0' lender Fidor announced plans to launch the first specialized bank for cryptocurrencies along with currency exchange Kraken, offering a potential glimpse of more mainstream usage.

11. ARTIFICIAL INTELLEGNE

Artificial intelligence is a technology that, along with machine learning, has been used in various different ways in the industry. With a range of benefits, AI is particularly a good technology to simplify advance banking and payment systems. For instance, real-time transaction analysis and managed funds are just some examples of ways the

technology is used. Barclays is one example of a bank that has begun testing ways that AI systems can help develop better banking products for customers.

12. DIGITAL CHEQUES

Even some of the more traditional banking methods are set to get a modern update. Smartphone cheque imaging - already widely used in the US - is set to hit Britain with Barclays and Lloyds trialing the tech, allowing payment information to be deposited digitally using a mobile device.

IV. DELIVERING SECURE CARDS AND PAYMENT PROCESSING SOLUTIONS

Technological innovations and new software platforms have made it easier for end-consumers to carry out payment transactions and utilize cards on the move. Online transactions through websites and mobile phones have contributed greatly to the rise in e-payment and m-payment. While the industry experience mounting regulatory and compliance requirements like PCI DSS and regional initiatives like European SEPA, they also pose a significant challenge to both the traditional and emerging players in cards and payments space.

Through our experience working with the leading cards and payments processors across the globe, we have developed in house expertise to deliver best value add to the payment industry. We have successfully deployed a wide range of fraud management solutions for card processing, card fraud monitoring and management, chargeback processing, payment processing, routing, settlement and reconciliation systems. As a payment solutions provider, we leverage our technology alliances with leading solution experts to strengthen our practice while developing and managing intricate processes and systems for our customers.

A. DESIGN & DEVELOPMENT

Nous has a rich experience in functional analysis and developing offline and online payment processing fraud management solutions. We have enabled Straight Through Processing (STP) for payments which helped our customer reduce costs, launch differentiated products and deliver better customer service.

B. MOBILE PAYMENTS

We offer quick & easy payments with our feature rich mobile payment and mobile wallet solutions. We provide strategy & management consulting and system development based on NFC (Near Field Communication) technology as well as QR Codes.

C. PAYMENT SOLUTIONS PROVIDER

Our solution for payment fraud management ensures prevention against fraudulent account registration, compromised online accounts and web-based and session-based malware frauds. The solution analyze every payment

transaction (current and historic) to ensure flawless online transaction and card usage.

D. MESSAGING AND INTEGRATION

We have expertise in SWIFT messaging in clearing and settlement space. Additionally, we have provided SEPA assessment and SEPA implementation fraud management solutions to our customers to ensure compliance.

E. PAYMENT TESTING

As a payment solutions provider, our Independent Verification & Validation (IV&V) unit Testree validate products across payment industry. We have developed highly scalable and easy to maintain automation frameworks to validate the core functions of the Payment Gateway architecture of alternative processing companies, in line with PCI-DSS. Our payment test repository includes 5600+ ready to use test scenarios, test data sets, and test cases. Our SEPA testing framework helps reduce testing time and ensure compliance with SEPA directives.

F. INTERNET

Internet is a networking of computers. In this marketing message can be transferred and received worldwide. The data can be sent and received in any part of the world. In no time, internet facility can do many a job for us. It includes the following:

This net can work as electronic mailing system.

It can have access to the distant database, which may be a newspaper of foreign country.

Customers can exchange their ideas through Internet and can make contact with anyone who is a linked with internet.

On internet, one can exchange letters, figures/diagrams and music recording.

Internet is a fast developing net and is of utmost important for public sector undertaking, Education Institutions, Research Organization etc.

G. SOCIETY FOR WORLDWIDE INTER-BANK FINANCIAL TELECOMMUNICATIONS (SWIFT)

SWIFT, as a co-operative society was formed in May 1973 with 239 participating banks from 15 countries with its headquarters at Brussels. It started functioning in May 1977. RBI and 27 other public sector banks as well as 8 foreign banks in India have obtained the membership of the SWIFT. SWIFT provides have rapid, secure, reliable and cost effective mode of transmitting the financial messages worldwide. At present more than 3000 banks are the members of the network. To cater to the growth in messages, SWIFT was upgrade in the 80s and this version is called SWIFT-II. Banks in India are hooked to SWIFT-II system. SWIFT is a method of the sophisticated message

transmission of international repute. This is highly cost effective, reliable and safe means of fund transfer.

This network also facilitates the transfer of messages relating to fixed deposit, interest payment, debit-credit statements, foreign exchange etc.

This service is available throughout the year, 24 hours a day.

This system ensure against any loss of mutilation against transmission.

It is clear from the above benefit of SWIFT that it is very beneficial in effective customer service. SWIFT has extended its range to users like brokers, trust and other agents.

H. AUTOMATED TELLER MACHINE (ATM)

ATM is an electronic machine, which is operated by the customer himself to make deposits, withdrawals and other financial transactions. ATM is a step in improvement in customer service. ATM facility is available to the customer 24 hours a day. The customer is issued an ATM card. This is a plastic card, which bears the customer's name. This card is magnetically coded and can be read by this machine. Each cardholder is provided with a secret personal identification number (PIN). When the customer wants to use the card, he has to insert his plastic card in the slot of the machine. After the card is a recognized by the machine, the customer enters his personal identification number. After establishing the authentication of the customers, the ATM follows the customer to enter the amount to be withdrawn by him. After processing that transaction and finding sufficient balances in his account, the output slot of ATM give the required cash to him. When the transaction is completed, the ATM ejects the customer's card.

I. CASH DISPENSERS

Cash withdrawal is the basic service rendered by the bank branches. The cash payment is made by the cashier or teller of the cash dispenses is an alternate to time saving. The operations by this machine are cheaper than manual operations and this machine is cheaper and fast than that of ATM. The customer is provided with a plastic card, which is magnetically coated. After completing the formalities, the machine allows the machine the transactions for required amount.

J. ELECTRONIC CLEARING SERVICE

In 1994, RBI appointed a committee to review the mechanization in the banks and also to review the electronic clearing service. The committee recommended in its report that electronic clearing service-credit clearing facility should be made available to all corporate bodies/Government institutions for making repetitive low value payment like dividend[9], interest, refund, salary, pension or commission, it was also recommended by the committee Electronic Clearing Service-Debit clearing may be introduced for pre-authorized debits for payments of

utility bills, insurance premium and instalments to leasing and financing companies. RBI has been necessary step to introduce these schemes, initially in Chennai, Mumbai, Calcutta and New Delhi.

K. BANK NET

Bank net is a first national level network in India, which was commissioned in February 1991. It is communication network established by RBI on the basis of recommendation of the committee appointed by it under the chairmanship of the executive director T.N.A. Lyre. Bank net has two phases: Bank net-I and Bank net-II.

L. CHIP CARD

The customer of the bank is provided with a special type of credit card which bears customer's name, code etc. The credit amount of the customer account is written on the card with magnetic methods. The computer can read these magnetic spots. When the customer uses this card, the credit amount written on the card starts decreasing. After use of number of times, at one stage, the balance becomes nil on the card. At that juncture, the card is of no use. The customer has to deposit cash in his account for re-use of the card. Again the credit amount is written on the card by magnetic means.

M. PHONE BANKING

Customers can now dial up the bank's designed telephone number and he by dialing his ID number will be able to get connectivity to bank's designated computer. The software provided in the machine interactive with the computer asking him to dial the code number of service required by him and suitably answers him. By using Automatic voice recorder (AVR) for simple queries and transactions and manned phone terminals for complicated queries and transactions, the customer can actually do entire non-cash relating banking on telephone: Anywhere, Anytime.

N. TELE-BANKING

Tele banking is another innovation, which provided the facility of 24 hour banking to the customer. Tele-banking is based on the voice processing facility available on bank computers. The caller usually a customer calls the bank anytime and can enquire balance in his account or other transaction history. In this system, the computers at bank are connected to a telephone link with the help of a modem. Voice processing facility provided in the software. This software identifies the voice of caller and provides him suitable reply. Some banks also use telephonic answering machine but this is limited to some brief functions. This is only telephone answering system and now Tele-banking. Tele banking is becoming popular since queries at ATM's are now becoming too long.

O. INTERNET BANKING

Internet banking enables a customer to do banking transactions through the bank's website on the Internet. It is

a system of accessing accounts and general information on bank products and services through a computer while sitting in its office or home. This is also called virtual banking. It is more or less bringing the bank to your computer. In traditional banking one has to approach the branch in person, to withdraw cash or deposit a cheque or request a statement of accounts etc. but internet banking has changed the way of banking. Now everyone can operate all these type of transactions on his computer through website of bank. All such transactions are encrypted using sophisticated multi-layered security architecture, including firewalls and filters. One can be rest assured that one's transactions are secure and confidential.

P. MOBILE BANKING

Mobile banking facility is an extension of internet banking. The bank is in association with the cellular service providers offers this service. For this service, mobile phone should either be SMS or WAP enabled. These facilities are available even to those customers with only credit card accounts with the bank.

Tables showing the Operational performance of Bank of Baroda

Table –1 Net Profit/AWF & Return On Net Worth (2008-09 to 2017-18)

Year	Net Profit/AWF	Return On Net Worth
2008-09	1.15	19.48
2009-10	1.26	22.19
2010-11	1.35	21.42
2011-12	1.28	19.11
2012-13	0.93	14.59
2013-14	0.79	13.00
2014-15	0.52	9.21
2015-16	-0.77	-17.64
2016-17	0.21	4.53
2017-18	-0.35	-7.64
Sum	6.37	98.25
Average	0.64	9.82
STDEV	0.73	13.28
CAGR	-1.87	-1.90

Source: Compiled from the annual reports of Bank of Baroda.

Table 1 presents the Net Profit /Average Working Funds of the bank from 2008-09 to 2017-18 financial years. During the study period in 2018-19 the Net Profit /Average Working Funds was 1.15 Per cent. It is -0.35 per cent in end of the study period 2017-18. The average Net Profit /Average Working Funds is 0.64 per cent with Compound Annual Growth Rate (CAGR) of -1.87 per cent. The Standard Deviation (STDEV) of Net Profit /Average Working Funds during the study period is 0.73.

The Return On Net Worth of the bank from 2008-09 to 2017-18 financial years. During the study period in 2018-19 the Return On Net Worth was 19.48Per cent. It is -7.64 per cent in end of the study period 2017-18. The average Return On Net Worth is 9.82 per cent with Compound Annual Growth Rate (CAGR) of -1.90 per cent. The Standard Deviation (STDEV) of Return On Net Worth during the study period is 13.28.

Table –2 Return On Assets & Return On Average Assets (2008-09 to 2017-18)

Year	Return On Assets	Return On Average Assets
2008-09	0.98	0.90
2009-10	1.1	1.24
2010-11	1.18	1.33
2011-12	1.12	1.21
2012-13	0.82	1.1
2013-14	0.69	0.75
2014-15	0.48	0.49
2015-16	-0.8	-0.78
2016-17	0.2	0.2
2017-18	-0.34	-0.34
Sum	5.43	6.1
Average	0.54	0.61
STDEV	0.67	0.72
CAGR	-1.89	-1.89

Source: Compiled from the annual reports of Bank of Baroda.

Table 2 Presents the Return On Assets of the bank from 2008-09 to 2017-18 financial years. During the study period in 2018-19 the Return On Assets was 0.98 Per cent. It is -0.34 per cent in end of the study period 2017-18. The average Return On Assets is 0.54 per cent with Compound Annual Growth Rate (CAGR) of -1.87 per cent. The Standard Deviation (STDEV) of Return On Assets during the study period is 0.67.

Table also shows the Return On Average Assets of the bank from 2008-09 to 2017-18 financial years. During the study period in 2018-19 the Return On Average Assets was 0.90 Per cent. It is -0.34 per cent in end of the study period 2017-18. The average Return On Average Assets is 0.61 per cent with Compound Annual Growth Rate (CAGR) of -1.89 per cent. The Standard Deviation (STDEV) of Return On Average Assets during the study period is 0.61.

Table –3 Dividend Pay-out Ratio (Including Corporate Dividend Tax) (2008-09 to 2017-18)

Year	Dividend Pay-out Ratio (Including Corporate Dividend Tax)
2008-09	17.22
2009-10	20.9
2010-11	17.76
2011-12	16.22
2012-13	23.65
2013-14	23.86

2014-15	25.06
2015-16	0.00
2016-17	24.06
2017-18	0.00
Sum	168.73
Average	16.87
STDEV	9.43
CAGR	-1

Source: Compiled from the annual reports of Bank of Baroda.

Table 3 Shows the Dividend Pay-out Ratio of the bank from 2008-09 to 2017-18 financial years. During the study period in 2018-19 the Dividend Pay-out Ratio was 17.22 Per cent. It is Nil in end of the study period 2017-18. The average Dividend Pay-out Ratio is 16.87 per cent with Compound Annual Growth Rate (CAGR) of -1 per cent. The Standard Deviation (STDEV) of Dividend Pay-out Ratio during the study period is 9.43.

V. FINDINGS

The followings are the findings of the study

1. Net Profit average Working Funds of the bank of the bank is continuously decreased and showed some of the years negative. It shows that the operational performance of the bank with reference this parameter is not substantiated.
2. Return On Net Worth of the bank also showing abnormal fluctuations during the study period.
3. Average amount of Return on Assets and Return on Average assets is less than the bench mark standard that is less than one.
4. The dividend payout ratio of the bank except two years it is showing positive effect on the performance of the bank.

VI. CONCLUSIONS

The followings are the conclusions of the study

1. It can be concluded that the Wearable devices, particularly smartwatches, have grown across various sectors. In banking, smartwatches have been adopted as an easy way to transfer and make payments.
2. Internet banking enables a customer to do banking transactions through the bank’s website on the Internet. It is a system of accessing accounts and general information on bank products and services through a computer while sitting in its office or home. This is also called virtual banking.
3. As banking in India will become more and more knowledge supported, capital will emerge as the finest assets of the banking system. Ultimately banking is people and not just figures. To conclude it all, the banking sector in India is progressing with the increased growth in customer base, due to the newly improved and innovative facilities offered by banks.

4. Bank of India as an able central regulatory authority, whose policies have shielded Indian banks from excessive leveraging and making high risk investments.
5. The operational efficiency of the Bank of Baroda from study would be concluded that it is that much not sufficient meet the standards of ROA, Dividend Pay Out Ratio and Return on Net worth.

VII. SUGGESTIONS

The followings are suggestion from the study

1. The bank need to improve the Net Profit average Working Funds because as it is continuously decreased and showed some of the years negative.
2. It is need to maintain stability of Return On Net Worth of the bank because it is showing abnormal fluctuations during the study period.
3. It is need to improve the Average amount of Return on Assets and Return on Average assets because it is less than the bench mark standard that is less than one.

REFERENCES

- [1] Indian Banking 2010 Special issue 2004, vol. 26 No I, IBA bulletin, IBA Mumbai.
- [2] Aditi Mittal and Sumit Gupta “Emerging role of information technology in banking sector’s development of India” Acme International Journal of Multidisciplinary, Volume – I, Issue – IV April – 2013 ISSN: 2320 – 236X
- [3] Vijayaragavan S.P., Karthik B., Kiran Kumar T.V.U., Privacy conscious screening framework for frequently moving objects, Middle - East Journal of Scientific Research, v-20, i-8, pp-1000-1005, 2014.
- [4] Brindha G., A new approach for changes in health care, Middle - East Journal of Scientific Research, v-12, i-12, pp-1657-1662, 2012.
- [5] Kiran Kumar T.V.U., Karthik B., Improving network life time using static cluster routing for wireless sensor networks, Indian Journal of Science and Technology, v-6, i-SUPPL5, pp-4642-4647, 2013.
- [6] Chopra, K., Managing Profits, Profitability and Productivity in Public Sector Banking, ABS Publications, Jalandhar, 1987.
- [7] Chawla, A.S., Indian Banking towards 21st Century, Deep & Deep Publication, New Delhi, 1988.
- [8] Choudhary, Y.L., Challenges and Strategies of the Banking Sector in the new Millennium, Deep & Deep Publication, New Delhi.
- [9] Kamal Nayan, Commercial Bank in India – Performance Evaluation Deep & Deep Publications, New Delhi, 1985.
- [10] Kaur, A., Profits and Profitability in Commercial Banks, Deep and Deep Publication, New Delhi, 1993.
- [11] Mahajan V.S., “Studies in Indian Banking and Finance”, Deep & Deep Publications, New Delhi, 1989.
- [12] Nigam, B.M.L., “Financial Analysis: Techniques for Banking Decisions”, Somaiya Publications Pvt. Ltd., New Delhi, 1979.