

Efficiency Improvement and Quality Initiatives Application in Financial Institutions

Ajtene Avdullahi, Vjosa Fejza

Abstract

Financial institutions in today's economy have no longer the luxury to improve profit simply by increasing revenue. These firms, due to the significant measuring reductions in the financial services industry needed to improve operational efficiencies and merely support existing processes with fewer resources. This paper explains the benefits of Lean, Six Sigma, Total Quality Management and Lean Six Sigma that have improved organization's performance, by cutting costs and waste, improving their products or services, increasing profitability as well as enhancing customer satisfaction. The applicability of quality management practices in financial institutions in Kosovo is presented and also their efficiency and effectiveness. By analyzing data from Raiffeisen Bank Kosovo, this paper highlights the benefits of Individual and Micro companies customer segment as the result of organizational change and successful application of quality initiatives from financial institutions in Kosovo.

Key Words: Lean, Six Sigma, Financial Institutions, Efficiency, Microcompanies.

M.Sc. AJTENE AVDULLAHI, M.Sc. VJOSA FEJZA

1. Introduction

Efficiency presents a fundamental concept that is related to the problem of optimal distribution of resources. In a competitive environment, only the efficient firms will remain, in the long run, while inefficient firms are expected to be driven out for a period time of. Thus, strategic management and the decision makers of firms, need to know the relative level of efficiency of the other firms competing in the market.

According to Bianchi, (2009) Efficacy (Ec) and Efficiency (Ez) present the main performance evaluation indexes. Bianchi (2009) determines Efficacy and Efficiency where Efficiency presents “the capability of an individual, an office or an organization as a whole, to fulfill Objectives or to make Effective Results mostly comparable to expected ones” and Efficiency (Ez) is “the concrete expression of the rational answer to the question: how can I fulfill the maximum of Results with a minimum of Resources?” In addition Bianchi (2009) correctly explains that Efficiency (Ez) is concerning the transformation process and chiefly the ratio between Results and Resources.

$$\text{Efficiency (Ez)} = \frac{\text{Resources}}{\text{Results}}$$

Banks and financial institutions success depends partially on how efficiently they operate. The inefficiency of a firm affects firms' profitability and has consequences on firms' survival in a competitive economy.

Efficiency and qualitative initiatives application are especially important to developing countries and, in particular, they are important in the financial sector.

Most of the studies on financial institutions efficiency have focused on the developed countries with little attention to developing countries especially Kosovo case.

Furthermore, this paper attempts to fill these gaps by bringing evidence on efficiency and applications of qualitative initiatives from Kosovo banks.

2. The development and application of Quality Management Programs

The first stage of quality development can be seen in the 1910s as the Ford Motor Company started to employ teams of inspectors in order to compare or test the product with the project standard at all stages covering

the production process, delivery, etc. It was aimed to detect and separate the poor quality product from the acceptable quality product.

The Japanese approach to quality management presents one of the most important aspects of Japanese quality improvement. Japanese companies have developed Quality Improvement (QI) in various stages, starting from inspection after production, to new product development and through the stages of process control. Many authors Ishikawa (1985), Sullivan (1986) and Yoshizawa (1987) have pointed out the importance of the seven stages of QI. Kristensen, Dahlgaard and Kanji (1993) acknowledged the importance of product quality to various business parameters.

Improving quality is very often regarded as activities that result in cost increase. It also means, making less defective products with the same amount of effort and resources or cost which contributes to a lower unit cost.

According to Henderson and Evans (2000) and also (Antony and Banuelas, 2002; Black and Revere, 2006; Andersson et al., 2006; Pepper and Spedding, 2010) the origins of Six Sigma may be traced back to the 1980's at Motorola. Motorola was concerned with the quality level of its products, so it went on inventing a rigorous data-driven approach to improvement that was based on TQM principles and was best suited for the high volume electronics manufacturing environments. In addition, the authors suggest, after it had become possible to the management at Motorola that processes within other sectors in the company outside of the manufacturing domain required improvement, they institutionalized a formal curriculum for all Six Sigma practitioners. According to authors that have led Motorola to winning the Malcolm Baldrige National Quality Award.

Antony and Banuelas (2002) offer reports of huge quality improvements and savings up to \$1.4 billion for Motorola (1987-1994), over \$1 billion for Allied Signal (currently Honeywell) (1992-1996) and over \$1 billion as well for GE (1995-1998).

Lean was born in Japan where after World War II, Japanese manufacturers faced the scarcity in resources and they had to find ways how to produce more products with fewer resources in order to compete on the global market. According to Shah and Ward (2007) the Japanese manufacturers have turned their attention back to the pioneering work done at Ford manufacturing facilities early at the beginning of the 20th century. *Lean* is a quality initiative that organizations mostly use to improve the performance of operations by efficiency, by reducing waste

and costs. According to Frost (2007), *Lean* is very useful in financial services because it focuses solely on time and quality that reduces the costs of operations. As evidence, an effective way is by employing similar *Lean* techniques as used by manufacturing enterprises for years. Based on a study conducted in 2007 by Technology Forecasters Inc. documented that 63 percent of the surveyed manufacturing companies reported lower overall costs as a benefit of *Lean* (Carmichael et al., 2012).

Arnheiter and Maleyeff (2005) argue that the focus of *Lean* is on streamlining processes at each level and department of the organization, aiming to minimize or remove wasteful activities from the processes and adding value. Whereas the focus of *Six Sigma* is on controlling processes i.e. minimizing or ultimately removing process variability – customer focused on each change for improvement. They also conclude that both *Lean* and *Six Sigma* were born out of necessity – *Lean* out of the necessity to produce more with less, while *Six Sigma* out of the necessity to increase quality accordance.

Authors Black and Revere (2006) and also Antony (2011) stressed that *Lean* is a required addition to *Six Sigma*.

For any change, the initiative requires a cultural change because an organizational culture is what manages a business, and if the wrong culture is in the organization, the change initiative is considered to fail.

According to Wilkinson et al., (1996), quality initiatives have permeated the financial sector. Based on their objectives, firms apply different initiatives. If firms tend to reduce costs then it applies BPR, culture change is related to the employees, TQM has been seen as a holistic approach, and when firms objective is focused on customers then it applies customer care and service quality.

But some of the authors suggest that only a combined or integrated approach to (quality) improvements by deploying both *Lean* and *Six Sigma* delivers lasting results e.g. Sharma (2003), and also Arnheiter and Maleyeff (2005).

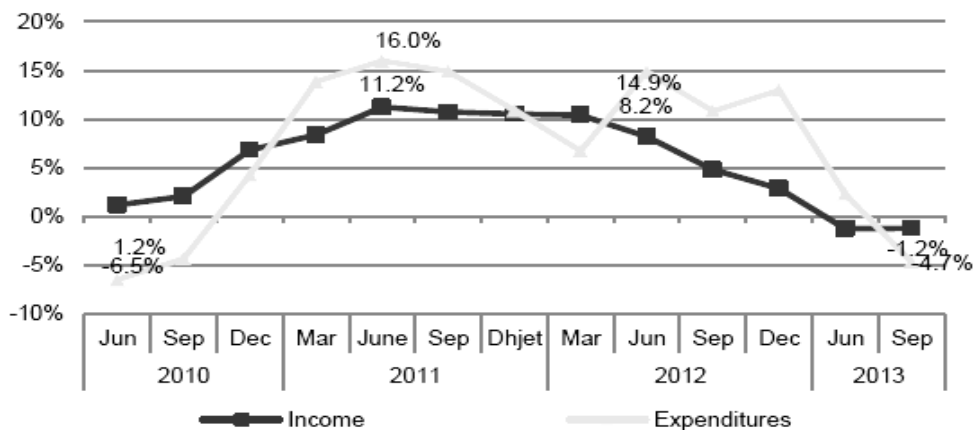
According to Pepper and Spedding (2010), *Lean Six Sigma* is a mindset for thinking *Lean*, through the structured methodology and data-driven approach to problem solving of *Six Sigma*, to continuous improvements for both cultural and operational change, leading to a complete makeover of the supply chain.

Improving quality aims to reduce cost and increase quality that cannot be achieved overnight. It requires a long run investment in activities that are designed to avoid defective production and waste.

3. The performance of the Banking sector in Kosovo

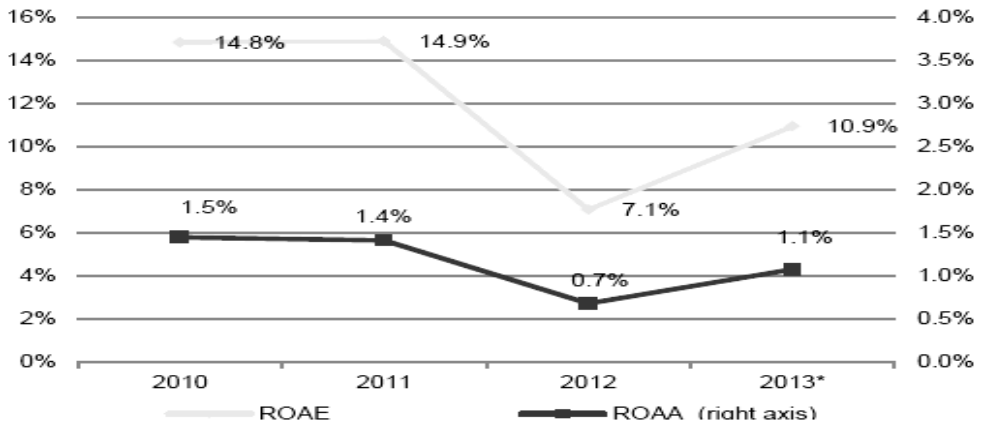
According to Central Bank of Kosovo Financial Stability Report (May 2014) an improvement has been marked on the performance of the banking sector. Net profit of the sector in June 2013 increased 48.1 percent compared to the same period of the previous year, amounting to Euro 15.2 million (figure 1). The income of the sector marked an annual decline of 1.2 percent; expenditures marked a more significant decline of 4.7 percent thus resulting in the profit growth of the banking sector (figure 1).

Figure 1: Annual growth rate of income and expenditures



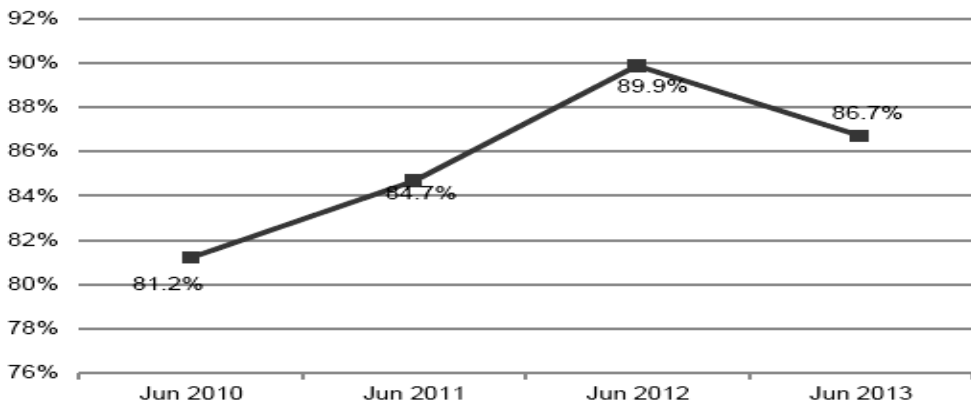
Source: CBK (2013)

As shown in the graph the trends of profitability indicators of the banking sector have been improved. Return on Average Assets (ROAA) for 2013, based on the annualized profit earned until June 2013, reached 1.1 percent from 0.7 percent in 2012 (figure 2). Return on Average Equity (ROAE) improved as well, reaching 10.9 percent in 2013 from 7.1 percent in 2012.

Figure 2: Profitability indicators

Source: CBK (2013)

The more significant decline in expenditures compared to the decline in income resulted in the improvement of the overall efficiency indicator expressed through the cost-to-income ratio of the sector (figure 3). In June 2013, the cost-to-income ratio dropped by 3.2 pp, from 89.9 percent in June 2012 to 86.7 percent in June 2013.

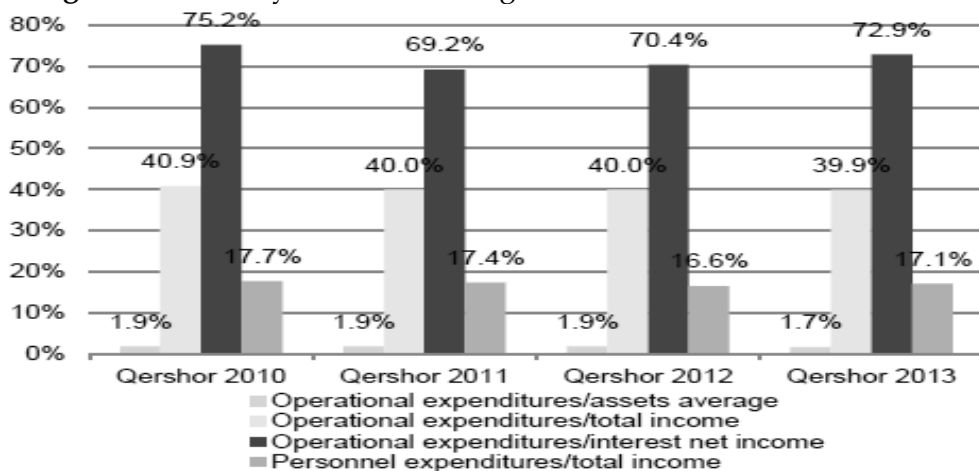
Figure 3: Expenditures to income ratio, in percentage

Source: CBK (2013)

Based on the Central Bank of Kosovo Financial Stability Report (May 2014) the operating expenses to total income ratio remains at an approximate level to the previous year (figure 4), which suggests that the

increase in the bank efficiency in this period does not result from the increased efficiency in the management of operating expenses, but rather as a result of the downsize in loan loss provision expenses. Therefore, considering the growing trend of nonperforming loans and the need for additional provisioning that may arise as a consequence, the improvement of the cost-to-income ratio and of profit may not be sustainable if the banks do not improve the operational and asset management efficiency, especially when taking into account the trend of income slowdown and slowdown of credit activity.

Figure 4: Efficiency indicators- all figures should be clearer



Source: CBK (2013)

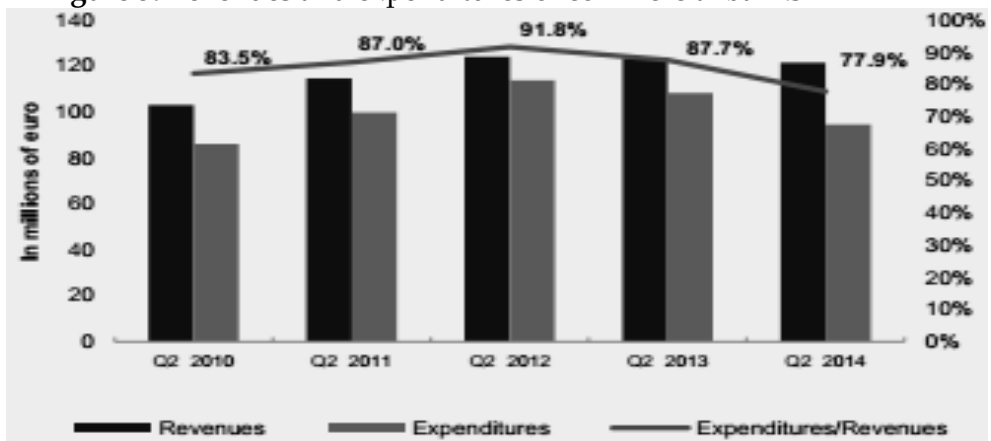
According to the CBK Quarterly assessment of the economy (Q2, 2014) the banking sector continued to improve the financial performance by generating a profit of Euro 26.9 million until June; a value that is significantly higher than the profit generated during the same period of the previous year (Euro 15.2 million until June 2013). The higher decline of expenditures mainly attributed to the banking sector profit increase, compared with a slight decline in revenues. It was marked a decrease from 12.6 percent of total expenditures until June 2014. In the reduction of total expenditures, the largest impact was marked by non-interest expenses that marked an annual decline of 32.0 percent. Within non-interest expenses, the largest decline was recorded by provision expenses, which recorded a reduction of 43.8 percent compared to the previous year. Interest expenses

until June 2014 marked an annual decline of 19.2 percent. Within interest expenses, deposit interest expenses were the main contributor, marking a decline of 25.1 percent. General and administrative expenses, which comprise the largest part of total expenses, were characterized by lower decline. The banking sector was also characterized by annual revenues decline of 1.6 percent in June 2014. The decline in revenues was primarily a result of the interest income decline of 2.0 percent.

As can be seen in the assessment, the decline in interest rates on loans represents an important, influential factor in the decline of the total revenues of the banking sector. The categories of non-interest revenues, which include income from fees and commissions, marked a slight increase of 2.5 percent until June 2014. The increase in prices for certain banking services and the increase of the use of the banking services may have contributed to the revenues increase from fees and commissions.

As a result of the above-mentioned developments, the efficiency indicator, i.e. the expenditures to revenues ratio, marked a significant improvement, reaching 77.9 percent compared to 87.7 percent as it was in June 2013 (figure 5).

Figure 5: Revenues and expenditures of commercial banks

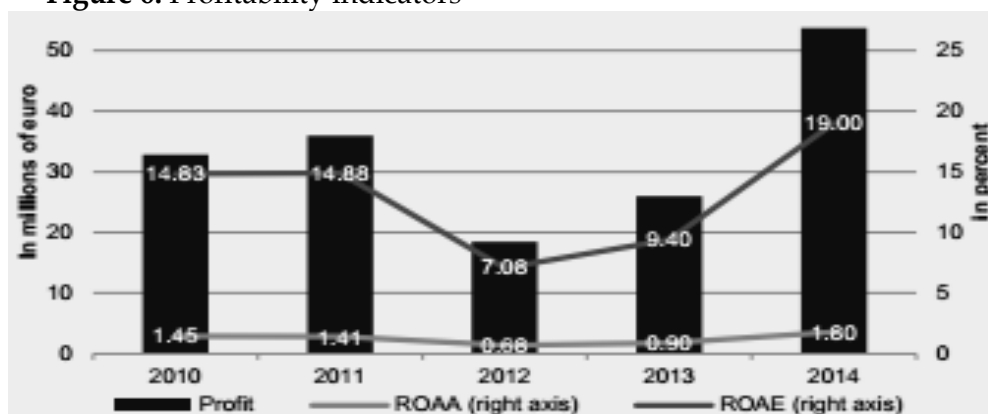


Source: CBK (2013)

According to CBK (2014), the significant increase in the banking sector profit was reflected in the improvement of profitability indicators such as Return on Average Assets (ROAA) and Return on Average Equity (ROAE). ROAA improved to 1.8 percent from 0.9 percent in 2013, while ROAE ratio

improved to 19 percent, from 9.4 percent in 2013 whereas for 2014 profitability indicators were calculated based on the performance in second quarter Q2 (figure 6). The significant decline in expenditures, which mainly reflects the decline in interest rates on deposits, along with the slight decline in revenues which is primarily due to the lower interest rates on loans, resulted in a significant profit growth compared to the previous year.

Figure 6: Profitability indicators



Source: CBK (2013)

4. Application of Quality Initiatives in Raiffeisen Bank Kosovo

By implementing the Business Process Management System (BPMS) and the *Six Sigma* projects in 2005 Raiffeisen Bank Kosovo aimed to improve products and services in accordance with clients requirements. BPMS is a tool that enables to the process owners to monitor their process performance and is the right mechanism to identify gaps in their processes. BPMS results can demonstrate that processes are not performing well and can serve as indicator of improvement. According to Raiffeisen Bank Annual Report, 2005 this approach has helped to identify banks' processes performance, their improvements toward better customer service with lower bank expenditures. On 2005, Raiffeisen Bank monitored all key processes in the bank through BPMS implementation. By identifying the root causes of the gaps and improving them, the bank was brought closer to cycle completion of *Six Sigma* approach.

During 2005, the Department of Raiffeisen Bank Kosovo implemented BPMS on six key processes which are: Consumer Loan and maintenance

process, SME application and maintenance process, Current Account maintenance process and Current Account opening process.

It can be mentioned that improvement has been made to International and Domestic Transfers after *Sigma* implementation as well. Transfers were executed in the presence of the client, in the right way, and clients could receive the swift confirmation within the hour, compared to the previous 24-hour period. This improvement resulted in the increase in the number of international transfers by 82 percent in comparison to the same period of 2004.

The initial phase of *Six Sigma* in Raiffeisen bank was a very successful one; it improved efficiency, enhanced customer satisfaction that directly resulted in an increase of profitability.

Aiming to provide as much as possible efficient service to the customers, during 2006, Raiffeisen Bank initiated five *Six Sigma* projects. The following three projects were completed during 2006: Current Account Opening, Branch Reporting, and Business Cash Deposit. The implementation of these projects reduced the time taken to open an account, provided simpler operational reports, as well as enabled the front line staff to offer faster and more efficient services to the customers. The Micro Loan Application Process Automation project was finalized in 2006. It has simplified the loan application process to the business customers. Finally, the ATM Card Ordering and Distribution project was initiated at the end of 2006 and was further developed in 2007.

According to Raiffeisen Bank Kosova Annual Report (2007) the Organisation and Process Management department with the strong collaboration of Bank's Process Owners accomplished six process improvement projects governed by *Six Sigma* Process Improvement Methodology in 2007. The six projects: Micro Loan Application, Personal Loan Application, Branch Reporting, Card Ordering and Distribution, Business Cash Deposit, Point of Sales Application and Installation have improved above mentioned processes, and have resulted in benefits and savings of € 617,672.71 for the Bank (Raiffeisen Bank Annual Report, 2007).

Projects with Process Improvement in 2008 continued governed mainly by utilizing 6 Sigma Methodology. On that time, Automatic Business Process Management Systems – BPMS were created for the important processes in the Bank that touch all product processes. Also, the bank has provided training for 26 Green Belts and 2 Black Belts. This training brought to 37 the number of Green Belts and to five the number of Black

Belts that contribute to the different Process and Productivity Projects and Initiatives through the Bank.

In addition, the Project Management Office developed its Project Management Infrastructure. Training was provided to more than 50 Project Managers in areas such as Project Initiation and Planning as well as utilizing the Ms-Project Software, an Automatic Project Handling tool for better Project Panning, Monitoring, and Controlling of Project Triple constraints.

In order to handle and govern all the Policies and Procedures of the Bank, an Organization Management Unit was created. The Process Mapping System Adonis was introduced, which has enabled the Bank to build further its cross-referencing between Processes and Procedures in the Bank (At all levels of Operation and Business).

Functional KPIs for Branches and the Operations Department were developed at the Bank level aiming to improve cost and productivity management. These tools helped Managers and other stakeholders to manage capacities in place. In addition, the tools provided statistical analysis to identify the functions/processes that may be subject to improvements and made leaner in the future.

In addition to *Six Sigma* methodology, *Lean 6 Sigma* was deployed in Raiffeisen Bank Kosovo with the aim of streamlining processes and further increasing efficiency. During the year, some staff members attended in-house *6 Sigma* awareness training. The total savings from *6 Sigma* Projects and other Productivity Initiatives for the 2009 operating year were €1,194,000.00.

Organization Management further expanded its functionality, as it engaged in the Standard Unit Cost Project. With this project, Raiffeisen Bank Kosovo analyzes the costs for the main products of the Bank. The Processes and Sub-Processes of strategic products were mapped and measured. By combining unit OPEX cost and process and sub-process measurements, the Bank can identify value creation product processes as well as high-cost product processes.

Lean Six Sigma, process improvement methodology has further developed within the Bank. *The Lean* transformation was initiated within Bank's operations department. With this strategy, was aimed to increase further the productivity of the staff as well as further streamline core and supporting processes. Ultimately, meeting and exceeding customers'

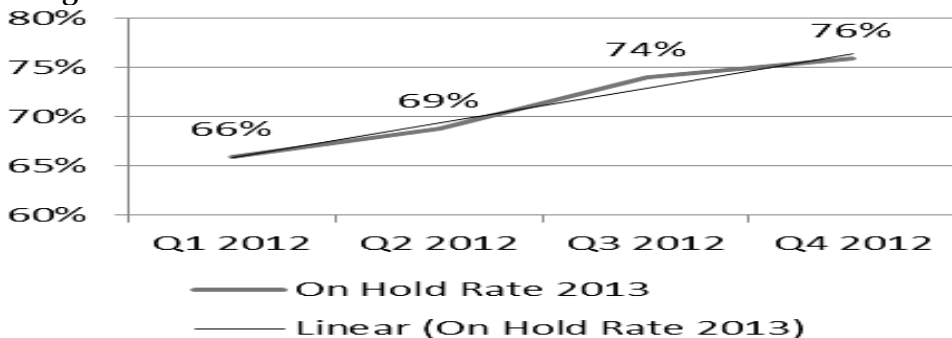
expectations is part of banks objective. From Process and Productivity projects, the total savings for 2010 operative year was € 1.3 million.

Furthermore, the Organization Management expanded its functionality further as Internal Control Systems-ICS functionally was developed within the department. In this way, the Bank aims to comply with Raiffeisen Bank International strategy of locating and maintaining effective controls within Bank's processes/sub-processes.

Application of qualitative initiatives from Raiffeisen Bank has resulted beneficially from banks and customers point of view. Only for the one-year period (November 2012-October 2013) *Lean* decreased cost in processing personal loan by 40 percent for Individual customers. By applying *Lean* as process improvement methodology costs in processing of Micro Loan decreased as well, it was marked a decrease from 35 percent for Business customers.

As seen in figure 7 there was an increase of trends on hold rates in 2012 for 10 percent for Micro Loans, that from the clients point of view means that clients had to wait longer for loan disbursement.

Figure 7: On hold rates 2012

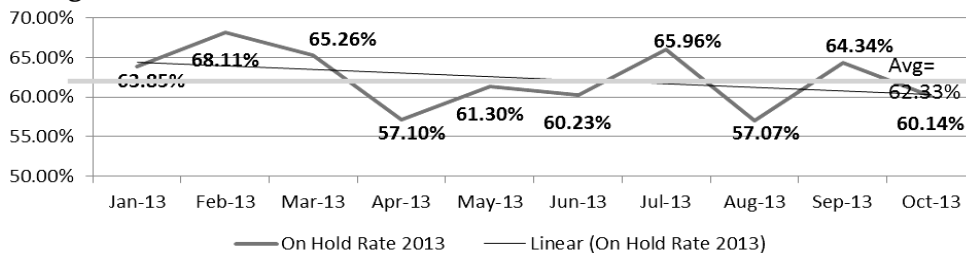


Source: Raiffeisen Bank Kosova

The process improvement in 2013 has resulted in the decreasing trend of on hold rate for Micro Loans. Figure 8 shows that different from 2012; there is a slightly decreasing trend in on-hold percentage across months in 2013.

The average on hold rate in Q3 2013 has decreased by 12 percent compared to Q3 2012 but has increased by 3 percent compared to Q2 2013.

Figure 8: On hold rates 2013



Source: Raiffeisen Bank Kosova

5. Conclusion

Application of quality management methodologies resulted as beneficial for financial institutions in general. Still, for some organizations adoption of qualitative initiatives was challenging. Staff and managers need to understand that they will benefit by adopting quality programs. Therefore, they should understand that those changes and improvements are needed and try to contribute toward their adoption. As seen by Raiffeisen Bank case in order to apply successful quality management methodologies, the bank provided training to managers and staff. Trained staff can easily identify what kind of changes and improvements are required, and learn how to implement them. Firms should perform continuous improvement and changes in order to remain competitive in the market.

List of References

- Andersson, R., Eriksson, H. and Torstensson, H. (2006), "Similarities and differences between TQM, Six Sigma and Lean". *The TQM Magazine*, 18(3), pg. 282 - 296.
- Antony, J. (2011), "Six Sigma vs Lean: Some perspectives from leading academics and practitioners", *International Journal of Productivity and Performance Management*, 60(2), pg. 185 - 190.
- Antony, J. and Banuelas, R. (2002), "Key ingredients for the effective implementation of Six Sigma program", *Measuring Business Excellence*, 6(4), pg. 20 - 27.
- Arnheiter, E. D. and Maleyeff, J. (2005), "The integration of lean management and Six Sigma", *The TQM Magazine*, 17(1), pg. 5 - 18.

- Bianchi, M. (2009), "Networking approach to sustainable project management for transition countries." *Accepted paper for the 1st International Conference on Sustainable Management of Public and not for Profit Organisations*.
- Black, K. and Revere, L. (2006), "Six Sigma arises from the ashes of TQM with a twist. 10" *International Journal of Health Care Quality Assurance*, 19(3), pg. 259 - 266.
- CBK (2014): Financial Stability Report No 4, May 2014, Central Bank of the Republic of Kosovo, Prishtinë, <http://www.bqk-kos.org>, [Accessed 25 November 2014].
- CBK (2014): Quarterly Economic Assessment No. 7 Q2 2014, Central Bank of the Republic of Kosovo, Prishtinë, <http://www.bqk-kos.org>, [Accessed 30 November 2014].
- Carmichael, Ch., Mullen, S. and Ernst-Jan M. (2012), Banking Industry Leverages Lean Principles to Eliminate Waste Lean Thinking in Financial Services A, pg. 1-12.
- Frost, B. (2007), "Applying a Lean Six Sigma approach can generate rapid results in Six Sigma deployments", Retrieved from <http://www.ssqi.com/breakthroughs/whitepaper-pdfs/EB-Lean-Services-012507.pdf>
- Henderson, K. M. and Evans, J. R. (2000), "Successful implementation of Six Sigma: benchmarking General Electric Company", *Benchmarking: An International Journal*, 7(4), pg. 260-282.
- Ishikawa, K., *What is Total Quality Control? - The Japanese Way*, Prentice Hall London 1985.
- Knights, D., and McCabe, D. (1997), "Can a leopard change its spots-seeking quality in financial services", *Managing Service Quality*, 7(2), pg. 102-105.
- Kristensen, K., Dahlgaard, K. K. and Kanji, G. K., (1993), "Quality motivation in East and Asian countries. Total quality Management", London, Taylor and Francis.
- Marketing and PR Department and Finance Department, 2005-2013, *Annual Report of Raiffeisen Bank Kosovo* 227 Raiffeisen Bank Kosovo J.S.C. Prishtina.
- Marketing and PR Department and Finance Department, 2007, *Annual Report of Raiffeisen Bank Kosovo* 227 Raiffeisen Bank Kosovo J.S.C. Prishtina,.

- Pepper, M. P. J. and Spedding, T. A. (2010), "The evolution of lean Six Sigma", *International Journal of Quality and Reliability Management*, 27(2), pg. 138 - 155.
- Shah, R. and Ward, P. T. (2007), "Defining and developing measures of lean production", *Journal of Operations Management*, 25(4), pg. 785 - 805.
- Sharma, U. (2003), "Implementing lean principles with the Six Sigma advantage: how a battery company realized significant improvements", *Journal of Organizational Excellence*, 22(3), pg. 43 -52.
- Sullivan, L.P., (1986), *The seven stages in company-wide quality control, Quality Progress*.
- Wilkinson, A., McCabe, D., and Knights, D. (1996), "Looking for quality: a survey of quality initiatives in the financial services sector", *Total Quality Management*, 7(1), pg. 67-78.
- Yoshizawa, T., (1987), *Exploratory Data Analysis in the Development Stage of New Products*. Proceedings of the 46th session of the ISI invited papers 5(3), pg. 1-11.

