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Omwanza, C. O., Jagongo, A. J., & Ndede, F. W. S.

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¹ Omwanza, C. O., ² Jagongo, A. J., & ³ Ndede, F. W. S.

¹ Department of Accounting and Finance, Kenyatta University, Nairobi, Kenya

² Doctor, Department of Accounting and Finance, Kenyatta University, Nairobi, Kenya

³ Doctor, Department of Accounting and Finance, Kenyatta University, Nairobi, Kenya

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ABSTRACT

The financial success of a country's microfinance banks is essential for the stability of the banking system and the economy as a whole. Kenyan microfinance banks have continued to incur rising losses, indicating poor financial performance. These banks can enhance their financial performance by offering specialized financial services and solutions to decrease expenses and information imbalances. This research examines the impact of process innovations on the financial performance of Kenyan microfinance banks from 2014 to 2020. All fourteen approved microfinance banks in Kenya were polled using an unbalanced panel. Using a document review guide, secondary data from the financial records of these institutions was extracted using a census. For descriptive statistics, means and standard deviations were utilised, whilst panel multiple regression analysis and correlation analysis were utilized for inferential analysis. The study found that process changes had a statistically significant influence on the financial performance of Kenyan microfinance institutions. The findings indicate that process innovations negatively but significantly affect the financial performance of microfinance banks in Kenya. As a result of the study, it was suggested that microfinance bank management should only use process innovations when the costs of adoption and use is lower than the revenues generated.

Key words: Process Innovations, Mobile Banking, Pesa Link, Digital Field Application, Financial Performance

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INTRODUCTION

Process innovations entail the addition of new characteristics to a company's service operations. Additionally, the innovations comprise the introduction of novel or considerable enhancements to systems of manufacturing or service delivery (Kiveu, Namusonge & Muathe, 2017). By decreasing the cost per unit of financial service delivery, the parameters of process innovations such as mobile banking apps, Pesa-link, and digital field application contribute to an improvement in financial performance. The innovations may consist of modifications to equipment, procedures, or the service or manufacturing organization (Sidek & Rosli, 2013). Process innovations aim to expand the firm's capacity and expertise. Adoption of process improvements has no effect on the goods, but decreases the expense of delivering financial services. Successful application of process innovations decreases product costs and prices as well (Kaloki, 2018). It will apply pressure on profit margins, pushing product improvements to become more appealing to consumers.

Theoretical Background

Financial Performance

The financial strength of a company influences its financial performance, which is characterized by the manner in which it utilizes its assets to generate revenue and pay costs. According to Katusabe (2013), corporations utilize financial performance to make vital economic decisions, including capital budgeting, working capital management, dividend policy, and capital structure. Profitability, solvency, liquidity, and efficiency ratios are frequently employed to evaluate a company's financial performance (Koiijen, Tomas & Uhlig, 2016). A company's financial performance indicates its effectiveness and capability to fulfill its objectives. According to Muigai and Gitau (2018), organizations with strong financial performance may

simultaneously address the diverse requirements of their stakeholders and their financial goals.

According to experts such as Palmer (2015), Mtsitsi, Dzanja, Gondwe, and Kamwana (2016), financial success is associated with a company's financial health, stability, solvency, or strength. According to Palmer (2015), financial performance is a proxy for an organization's ability to achieve its financial objectives. This involves assessing the effectiveness of operations and organizational policies using monetary metrics. Common accounting indicators for assessing financial success include earnings per share, market to book value, return on assets, and return on capital utilized (Monyi, 2017). Financial success is crucial because it demonstrates a company's capacity to achieve the objectives of several stakeholders.

Microfinance Banks in Kenya

Microfinance banks provide low-income individuals and families with financial services that conventional banks have refused to provide (Monyi, Namusonge & Sakwa, 2016). In addition to financial services, they offer health education and training, as well as insurance, business, and investment advice (Kaloki, 2018). It was established with the purpose of alleviating poverty, decreasing unemployment, and advancing economic development (Wieneke, 2016). It is governed by the Microfinance Act of 2006, the Microfinance Regulation of 2008, and the Kenyan Central Bank. MFBs are not fully regarded as banks since they use customer deposits to generate capital for independent lending (CBK Report, 2018).

As the business environment evolved, so did the financial system's processes, products, and markets (CBK, 2016). The development of information technology has produced new, improved, or updated product designs, as well as increased consumer services and satisfaction (CBK, 2017). Microfinance has expanded in terms of innovation, dynamism, and the range of services and goods it provides (CBK

Report, 2019). Kenyan MFBs' financial performance has deteriorated since 2015. (2019). This might be attributed to decreased net income resulting from increasing operating expenses (Okiro & Ndungu, 2013). Due to poor financial performance, three MFBs have surpassed the minimal core capital necessary by law to establish a microfinance institution (KBA, 2020). Choice MFB also failed to meet the required minimum liquidity ratio of 20%. In addition, it has led to the closure of marketing offices and branches (CBK, 2020).

Empirical Review

Canh, Liem, Thu, and Khuong (2019) investigated the impact of process innovations on Vietnamese company performance. For the three-year period between 2011 and 2013, panel data were obtained from a sample of manufacturing enterprises. A random effects panel data regression model was used to analyze the data, and ROA was utilized to quantify the performance of the company. The research found that process innovations contribute to business success in terms of market share, but not asset return (ROA). The investigation revealed that investment in creative activities takes time to provide a favorable impact on profitability, but it might increase consumer loyalty. The study was conducted in Vietnam; hence, its findings do not apply to the current evaluation.

Using descriptive statistics, Akhiser, Tunay, and Tunay (2015) tried to assess the impact of process improvements on bank performance. Return on assets and return on equity served as indicators of a bank's performance, whereas electronic banking represented process advancements. The World Bank, the International Monetary Fund, and the Bank for International Settlements provided secondary data for twenty-three developing and developed nations during the period 2005-2013. To determine the relationship between the research variables, the data were analyzed using a dynamic panel data model.

Collectively evaluating the findings of the study revealed a correlation between process improvements and bank performance. The lack of information on the study's target population and sample technique makes it impossible to generalize the results to the current analysis.

Ibekwe (2021) investigated the impact of process changes on the performance of Nigerian microfinance banks that accept deposits. Automated teller machines and mobile banking were two process advances. The study utilized an ex-post facto research approach, and secondary data was acquired from the central bank of Nigeria's statistics bulletin. Using a multiple regression model, the connection between the research variables was analyzed. The findings of the study demonstrated that process innovations and performance are strongly and favorably associated. Nonetheless, the study did not specify if a direct or indirect correlation was discovered.

Mbama and Edepu (2018) evaluated the association between digital banking process improvements and the financial performance of British banks. Using multivariate factor analysis, structural equation modeling, and ANOVA testing, the data from a survey of bank customers were analyzed. The findings revealed a favorable correlation between process innovations and the financial success of British banks. The report advised that banks employ digital financial technologies to enhance their financial performance. The study was done among British banks, and its conclusions may not be applicable to the present situation.

Tahir et al. (2018) intended to determine if process innovations impact Pakistan's financial performance. Online banking, mobile banking, and Automated Teller Machines (ATMs) are all kinds of banking, and process advancements were measured in terms of the transaction values. The efficiency ratio was operationalized as a measure of financial success

(ER). Using a fixed-effects regression model, panel data from the State Bank of Pakistan for the period 2009 to 2016 were collected and analyzed. Using E-views version 8.0, data was analyzed using descriptive statistics and displayed in tables. The results demonstrate a substantial positive connection between online transactions and efficiency ratio (ER). The Granger impact analysis revealed that process innovation has a substantial effect on the value of transactions. The conclusion of the study is that process improvements improve payment methods used for borrowing and lending cash, hence facilitating a swift manner of customer service. The study investigated the direct connection between process improvements and financial success in the whole banking industry. The study lacked demographic and sample information, therefore it may not be appropriate to the present situation.

Tuan, Nhan, Giang, and Ngoc (2016) examined the impact of process innovations on the firm performance of Vietnam's supporting industries in the mechanical, electrical, motorbike, and car sectors. The study hypothesized that the increase in financial performance would be proportional to the extent of process innovation. Using questionnaires, primary data on process innovations were gathered from 150 businesses. Analyzing data with exploratory component analysis and linear regression models, the study discovered that process changes have a substantial beneficial impact on a company's financial success. Despite this, the evaluation was based on cross-sectional data that analyzes only observable qualities. The study also utilized retroactively collected data, which raises concerns about the potential of data measurement mistakes.

Mwawasaa and Ali (2020) aimed to determine the impact of financial process innovation on the financial performance of Kenyan commercial banks. The survey design was descriptive. Using surveys, primary data on financial innovations was obtained.

The independent variable was conceptualized in terms of profitability, market share, cost reduction, and competitiveness; whereas the independent variable was conceptualized in terms of real-time gross settlements (RTGS), credit scoring, and asset securitization. Stratified random sampling was utilized to pick respondents from various levels of management. Using descriptive statistics, multiple regression, and Pearson correlation, the data was analyzed. The results of the study refuted the null hypothesis and led to the conclusion that innovations in financial process had a substantial impact on the financial performance of commercial banks. The research suggested that management implement process improvements to enhance financial performance. The relationship between financial innovations and the financial performance of Kenyan microfinance institutions is mediated by competitiveness and controlled by the regulatory framework, according to the current study. The study was based on the commercial banking sector, and the results may not be applicable to the present situation, whereas the current research is centered on microfinance banks in Kenya.

METHODOLOGY

The nature, evolution, and sources of knowledge establish the researcher's guiding ideology. The research epistemology may be positivist or phenomenological. This study was built on positivist philosophy to aid in achieving the research aims. According to Saunders et al. (2009), positivism is predicated on the idea that measures should be conducted objectively as opposed to subjectively. In this study, an explanatory and descriptive strategy was utilized. Cooper and Schindler (2014) believe that an explanatory design is suitable for this study in order to understand the current relationship between product innovation and MFB financial success. According to Mugenda & Mugenda (2012), explanatory design emphasizes the underlying reasons of an event to aid in its prediction

or explanation. Explanatory and descriptive methods are useful for summarizing population characteristics and testing hypotheses. The census method was chosen due to the magnitude of the sample population. A census examines all the businesses in a certain region (Cooper & Schindler, 2014). According to Kothari (2011), obtaining data from all research units enhances the credibility of the data. In addition, the approach helps reduce sample bias induced by sampling errors. Secondary data were selected because they are readily available, affordable, and permit panel data analysis (Hakim, 2012). From 2014 to 2020, secondary data were acquired from the MFB's annual financial reports and the Central Bank of Kenya's bank supervision reports. Utilizing a document review method, secondary data was gathered and compiled. Various descriptive and inferential approaches, including correlation and panel regression, were used to analyze the data.

We utilized descriptive statistics to understand and characterize the data. The standard deviation reflects the data's variability. According to Burke and Onwuegbuzie (2014), inferential statistics were applied to infer findings, generalize circumstances, and make sound assumptions about the research variables' relationships. According to Creswell et al., (2011) correlation components were determined utilizing Pearson correlation coefficients. Quantitative variables led to the application of the Pearson technique. Creswell (2014) recommends panel regression for assessing the connection between study variables.

According to Sekaran (2006), panel regression analysis is advantageous since it may evaluate complex behavioral elements such as product developments. As the MFBs were licensed at

different times, the findings are inconsistent. The examination of the Classical Linear Regression Model's (CLRM) assumptions ensured the accuracy of the regression estimations. Creswell et al. (2011) stated that the assumptions of multicollinearity, normality, and autocorrelation were not broken. Research requires avoiding errors, pursuing the truth, and gathering information. One of the many benefits of ethics is that it creates trust between researchers and their intended audience. Confidentiality, informed consent, and privacy may all contribute to attaining this objective. NACOSTI approved a research to collect information from MFBs and CBKs. Prior to the commencement of data collection, a research authorization document from Kenyatta University was also received. This facilitates the resolution of ethical issues associated with data collecting. The findings were presented to NACOSTI and other interested parties and published by a respectable organization.

RESULTS

Descriptive statistics

The descriptive statistics presents the summarised characteristics of the variables used. Hakim (2012) observed that descriptive statistics helps in understanding the distribution of data compared to the normal distribution. Means, median, standard deviations, maximums, minimums, skewness and kurtosis were determined to establish the nature of data gathered for the study. The means was preferred since it is a robust statistics that is more representative, uses all values and can closely be associated with standard deviations and variance. Standard deviations are stable to compare other measures of dispersion, as suggested by Bell, Bryman, and Harley (2018). Table 1 showed the results of the descriptive statistics.

Table 1: Descriptive statistics on process innovations

	Process innovations
Mean	5.8528E6
Median	4.8850E6
Maximum	17380000.00
Minimum	45000.00
Std. deviation	5.37817E6
Skewness	.722
Kurtosis	-.731
Sum	3.63E8
Obs	62

Source: Study data (2014-2020)

Table 1 showed that the average amount of process innovations in terms of mean was 5.8528E6 while the maximum and minimum amounts were 17,380,000.00 and 45,000.00 respectively with a standard deviation of 5.37817E6.

Trend Analysis for process innovations

The trend for process innovations for 10 microfinance banks for the period 2014 – 2020 were shown in figure 1. According to the trend line, process innovations have been increasing between 2014 and

2019, with a fall in 2020 with an R² value of 88.08% along the line of best fit with a gradient of 1E+06. This signifies an increase in the annual average revenue generated from various elements of process innovations. Dunde and Kaskende (2018) points out that process innovations enhance the experience of customers and promote the efficiency with which financial services are offered. Similar results were also found by Mwawasaa and Ali (2020).

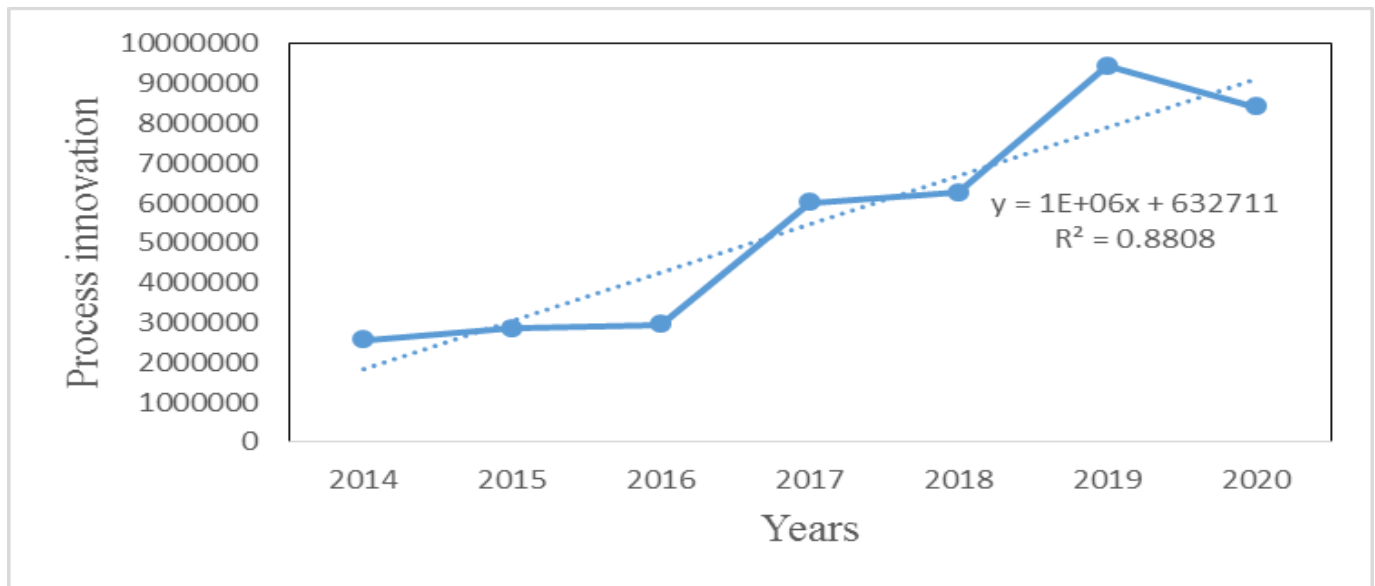


Figure 1: Process innovation trend in 2014 – 2020

Table 2 showed the regression results for the effect of process innovations on MFBs financial performance.

Table 2: Regression table showing effect of process innovation on Micro Finance banks' performance

ROA	Coefficient	Standard error	T	P> t
Mobile bank apps	4.69e-07	2.84e-07	1.65	0.011
Pesa Link	-2.95e-07	1.63e-07	-1.81	0.008
Digital Field applications	-2.38e-08	1.96e-07	-0.12	0.004
Constant	-3.862383	1.351021	-2.86	0.008

R-squared=0.2370

F-statistics=2.59,
p=0.006

Source: Study Data (2014-2020)

Based on the results presented in Table 2 above the p-value for process innovations was 0.006 which is less than 0.05. The results led to the rejection of the null hypothesis that process innovations has no statistical effect on the financial performance of microfinance banks. This indicates that process innovations have a statistically significant but negative effect on the financial performance of microfinance banks in Kenya. This implies that the annual average revenue generated from process innovations declined as the overall financial performance improved and vice versa. This can be attributed to the higher costs than revenue associated with process innovations.

The regression results presented also indicate that the coefficient of interaction between mobile bank applications and financial performance is positive and statistically significant since (P=0.011<0.05). It implies that the effect of mobile bank applications on ROA increases with increase in process innovations. The results further show that the coefficient of the interaction between pesa link and ROA is negative but significant as shown by (P=0.008<0.05). Similarly, the coefficient of interaction between digital field application (DA) and

ROA is negative and statistically significant at 5 percent significant level as indicated by (P = 0.004 < 0.05). Overall, the results show that process innovations have significant but negative effects on return on assets (P=0.006<0.05).

The findings of this study are consistent with Canh *et al.*, (2019) in their study whose study findings indicate that process innovations are valuable to firm performance in terms of market share but not return on assets (ROA). This implies that process innovations negatively but significantly affected financial performance. However, studies by Ibekwe (2012), Akhiser, Tunay and Tunay (2015), Tahir et al (2018), Mbama and Edepue (2018), and Tuan *et al.*, (2016) found a significant but positive relationship between process innovations and financial performance of firms.

By using multiple regression model of $ROA_{it} = \alpha_1 + \beta_1 MA_{it} + \beta_2 PL_{it} + \beta_3 DA_{it} + \epsilon_{it}$

The findings therefore adopt a model;

$$ROA = -3.862 + 4.69MA - 2.95PL - 2.38DA + \epsilon_{it}$$

Where:

MA = Mobile banking

PL = Pesa link

DA = Digital field application

Table 3: Hypotheses Testing

Study Objectives	Hypotheses	Statistical Model	Threshold of Results' Interpretation (5 % Significance Level)
To examine process innovations and their effect on MFBs' financial performance in Kenya	Process innovations have insignificantly statistical effect with MFBs financial performance	$ROA = -3.862 + 4.69MA - 2.95PL - 2.38DA$	P-Value < 0.05 (Accept H _A) P-Value < 0.05 (Accept H _A)

Discussion

This research aimed to determine how process improvements impact the financial performance of Kenyan microfinance firms. The hypothesis stated that process changes had no statistically significant effect on the financial performance of Kenyan microfinance banks. A unit increase in mobile applications leads to a 4.69 unit increase in the financial performance of MFBs in terms of process innovations. On the other hand, a unit increase in pesalink and digital field applications leads to 2.95 and 2.38 units respectively decrease in financial performance. The findings supports the notion that product innovations and financial performance are inversely correlated. The overall results, however, show that process innovations negatively but significantly affect the financial performance.

CONCLUSION

The findings indicate a negative but significant statistical effect on the financial performance of microfinance banks in Kenya. This implied that as the annual average revenue generated from process

innovations, the financial performance measured in terms of ROA declined. It can be concluded that increased process innovation in terms of mobile applications, *pesa* link, and digital applications enhances speed and quality, which result in more revenues generated. This contravenes the transaction cost innovation and constraint induced theories which postulates that innovations are meant to lower the costs of transactions and improve financial performance.

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REFERENCES

- Akhisar, I., Tunay, K. B., & Tunay, N. (2015). The effects of innovations on bank performance: The case of electronic banking services. *Procedia-Social and Behavioural Sciences*, 195, 369-375.
- Burke, J. R. & Onwuegbuzie, J. A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher* 33: 14–26.

- Canh, N. T., Liem, N. T., Thu, P. A., & Khuong, N. V. (2019). The Impact of Innovation on the Firm Performance and Corporate Social Responsibility of Vietnamese Manufacturing Firms. *Sustainability*, 11(13), 3666.
- CBK (2020). *Directory of Microfinance Banks in Kenya*. Retrieved from <https://www.centralbank.go.ke/bank-supervision/directory-of-licenced-microfinance-banks/>
- CBK (2019). *Bank Supervision and Banking Sector Reports*. Central Bank of Kenya
- CBK (2018). *Bank Supervision and Banking Sector Reports*. Central Bank of Kenya
- CBK (2017). *Bank Supervision and Banking Sector Reports*. Central Bank of Kenya
- CBK (2016). *Bank Supervision and Banking Sector Reports*. Central Bank of Kenya
- Cooper, C., & Schindler, P. (2014). *Business Research Methods* (12th edition.) Boston: McGraw-Hill.
- Creswell, J. W. (2014). *Qualitative Inquiry and Research Design: Choosing among Five Approaches*, (3rd Ed.). Thousand Oaks: Sage
- Creswell, J. W., Klassen, A. C., Plano, V. L., & Smith, K. C. (2011). *Best practices for mixed methods research in the health sciences*. National Institutes of Health, Bethesda (Maryland): 2094-2103.
- Hakim, C. (2012). *Research Design: Successful Designs for Social Economics Research*. Routledge.
- Ibekwe, A. O. (2021). Financial Innovation and Performance of Deposit Money Banks in
- Kaloki, J. D. (2018). Effect if Central Bank of Kenya Regulations on the Performance of Microfinance Banks. *Strategic Journal of Business and Change Management*, 5(1), 584- 623
- Katusabe, A. (2013). Factors Affecting the Performance of Microfinance Institutions in Uganda: A Case Study of Hofokam Limited. *A PhD Thesis*, GRIN Verlag.
- KBA (2020). *State of the Banking Industry Report 2020*.
<https://kba.co.ke/downloads/State%20of%20the%20Banking%20Industry%20Report%20-%202020.pdf>
- Kiveu, M. N., Namusonge, M., & Muathe, S. M. (2017). Effect of innovation on firm competitiveness: A study of small and medium enterprises in the manufacturing sector in Nairobi City County. *International Journal of Business Innovation and Research* 18(3), 307
- Koijen, J., Tomas, J. & Uhlig, H. (2016). Financial Health Economics. *Econometrica*, 84(1), 195-242
- Kothari, C. (2011). *Research Methodology; Methods and Techniques*. New Delhi: New Age International.
- Mbama, C.I. and Ezepue, P.O. (2018). Digital banking, customer experience and bank financial performance: UK customers' perceptions. *International Journal of Bank Marketing*, 36(2), 230-255. <https://doi.org/10.1108/IJBM-11-2016-0181>
- Monyi, J. N. (2017). *Determinants of financial performance of deposit taking microfinance institutions in Kenya*. Doctoral dissertation, JKUAT-COHRED

- Monyi, N., Namusonge, G., & Sakwa, M. (2016). Effect of Market Structure on Financial Performance of Deposit Taking Microfinance Institutions in Nairobi City County, Kenya. *Research journal of Financial Accounting*, 7(20), 53-59.
- Mtsitsi, L., Dzanja, J. K., Gondwe, S., & Kamwana, B. C. (2016). Effects of Microcredit on the Financial Performance of Small Scale Cooking Oil Processors in Central Malawi. *Journal of Agricultural Science*, 8(6), 159-166.
- Mugenda, O. M & Mugenda, A. G. (2012). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts Press.
- Muigai, R. G., & Gitau, S. N. (2018). Effect of innovation strategies on financial performance of the banking industry in Kenya. *European Journal of Economic and Financial Research*, 3(1), 1-7.
- Mwawasaa, N. K., & Ali, A, I. (2020). Effect of financial innovation on financial performance in commercial banks in Kenya. *The Strategic Journal of Business & Change Management*, 7(4), 607 – 627.
- Okiro, K. & Ndungu, J. (2013). The Impact of Mobile and Internet Banking on Performance of Financial Institutions in Kenya. *European Scientific Journal*, 9 (13), 146-160.
- Palmer, A. (2015). In Defense of Financial Innovation: Creative Finance Helps Everyone—Not Just the Rich. *Foreign Affairs*, 94(3): 66-76
- Rosli, M. M., & Sidek, S. (2013). The Impact of Innovation on the Performance of Small and Medium Manufacturing Enterprises: Evidence from Malaysia. *Journal of Innovation Management in Small & Medium Enterprises*, 2013, 1.
- Saunders, M., Lewis, R. & Thornhill, A. (2009). *Research Methods for Business Students*, (5th edn.), England, Pearson Education.
- Sekaran, U. (2006). *Research Methods for Business: A Skill Building Approach* (4th Ed.). London: John Wiley & Sons.
- Tahir, S. H., Shah, S., Arif, F., Ahmad, G., Aziz, Q., & Ullah, M. R. (2018). Does financial innovation improve performance? An analysis of process innovation used in Pakistan. *Journal of Innovation Economics Management*, (3), 195-214.
- Tuan, N., Nhan, N., Giang, P., & Ngoc, N. (2016). The effects of innovation on firm performance of supporting industries in Hanoi, Vietnam. *Journal of Industrial Engineering and Management*, 9(2), 413. doi: 10.3926/jiem.1564
- Wieneke, A. (2016). Better Financial Innovation via Innovative Finance of Supervisors. *Economic Papers*, 35(1), 16–23.