PAYMENT AUTOMATION AND PROFITABILITY OF MWALIMU NATIONAL DEPOSIT TAKING SACCO, KENYA.

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ABSTRACT

DT-SACCOs are a sub-set of the mainstream cooperative society and carry paramount importance in economic growth and poverty eradication through creation of employment opportunities to many individuals in the country. The conceptual link between payment automation on profitability of DT-SACCO firms is still unresolved. Specifically, the aim of this study was to evaluate the influence of payment automation on profitability of Mwalimu National DT-SACCO, Kenya. The underpinning theories to the study included and not limited to diffusion of innovation theory and technology acceptance theory. The study used causal research design. Mwalimu National DT-SACCO alone was representing the study population whereby survey was used to collect data from the 18 branches across the country. To collect data, a drop and pick approach was relied upon whereby all the structured questionnaires were distributed to research participants who are the top officials of Mwalimu National DT-SACCO. Data was analyzed using both correlation and multiple regression methodology. The research findings revealed that payment automation influenced the profitability of Mwalimu National DT-SACCO in adverse manner which was statistically significant. Mwalimu National DT-SACCO top management will benefit from the research findings for the amounts of financial resources available or budgeted for automation of payments will be optimally allocated to only those lines which are of value addition. SASRA as an agency of government will coincidentally take advantage of the outcome of this interrogation for the conceptual viewpoint addressed herein pinpoints areas of payment automation policy making to create user-friendly enabling environment to encourage advancement in technology amongst the DT-SACCOs This study is one of its kind in the academic frontier for the theoretical concerns of the connection between payment automation and profitability of firms is a foundation to further establish whether there exists moderating or intervening factors that can be of influence of the current model in this study.

Keywords: Payment Automation; Profitability; Mwalimu National DT-SACCO

INTRODUCTION

The history of Deposit Taking Savings and Credit Cooperatives (DT-SACCOs) goes all the way back to the concept of cooperative movements which are global by nature (Fernandez & Aman, 2018). The aforementioned financial institutions are firms that are over sixty thousand in number and occupy more than one hundred countries in the world (World Council of Credit Unions, 2017). The formation of these financial institutions entails the coming together of people of the same financial mind set who establish these organs to act as a conduit to solve the members' financial challenges (Daniel and Abdul, 2018). SACCOs are also referred to as credit unions in other

continents apart from Kenya and other African states. Further, their minimum membership is ten members and no maximum. Through membership and uniform contributions that one makes, this makes one qualify to be a member. This is according to the set constitution and the set by-laws. Such contributions are the bases of loan borrowing for it acts as the savings (Fernandez & Aman, 2018).

DT-SACCOs is a voluntary movement which is liberal and democratic with one share one vote dynamics as per International Co-operative Alliance, (2017). The membership size is dictated by the principle of free entry free exit of members as they so desire. Such that one joins freely and can exit when he or she wants. Although these financial institutions are everywhere intense, in African setting, in Kenya it takes a wider coverage for they have around 6 percent proportion of the national income. Uganda and Tanzania they also exist in large numbers for they portray occupancy of 3.7% and 0.33% accordingly (Ntoiti and Jagongo, 2021). Overseas countries have registered over 300 credit unions or SACCOs with sales quantities ranging between 2.5 USD (International Co-operative Alliance, 2017).

In the advanced countries such as USA, the UK and the Latin America these institutions exist but they are commonly referred to as credit unions. Globally membership of Savings and Credit Cooperatives (SACCOs) has attained a high numerical not less than one billion individuals who are members and again by extension, the SACCOs benefit many individuals who exceed 250 people either in a direct or indirect way. This is noted through either provision of employment opportunities, helping programs aimed at eradicating poverty or otherwise (International Cooperatives Alliance, 2017).

Regardless of the physical location, all SACCOs operate in similar ways. For example, just like in the Africa, USA, UK and Ireland, Brazil, and Latin America based SACCOs operate in a similar manner. One common aspect is that of member contribution. The constitution and the set by laws by those organizations require them to collect contributions on a regular manner. On the other hand, deposits are used as the basis of lending loans to the members according to the set laws and regulations of the respective countries as it has been aforementioned (Lydia, 2018). Other regions with similar legal operations are the South Africa, India, and continental Europe (Ngui and Jagongo 2017).

SACCOs' growth rate in Kenya is great for new technology and innovation assimilation for the sake of providing financial services has leveraged the way the SACCOs generate income for their members (Kinyagu, 2021). Further, these institutions are regulated by SASRA set rules and regulations which have streamlined these firms. By 2019, about 30 percent of individuals enjoyed access of SACCO services and even becoming members due to adherence of the set regulations (Kenya Financial Regulators, 2021). As these institutions grow, there has been land marks of the much benefits people have derived from these organizations. Such as promoting savings habits of the members, issuance of user-friendly loans to the low-income earners, increased liquidity amongst members, general economic growth in the country (Kiaritha, 2016).

According to Ngui and Jagongo, (2017), although SACCOs started as a member-based movement aiming at aiding the members, these financial institutions are classified in to Deposit Taking SACCOs and non-deposit taking SACCOs in the mood of growth rate increasing year after year. So, the aforementioned SACCOs are sub-set of the cooperative movement. For the case of non-deposit taking SACCOs, they don't carry out FOSA services while for the DT-SACCOs, they operate like commercial banks for the Front Office operations are bank-hall operations.

As much as these financial institutions are of much help to their members and other stakeholders, there are several financial performance challenges they face which are up to date not yet resolved and end up with some DT-SACCOs being denied operating licenses (SASRA, Report 2020). Like any other deposit-taking financial institution, the growth and financial performance trends for DT-SACCOs are gauged using total membership, total assets, total deposits, loans, and capital as the key parameters for monitoring (SASRA Report, 2018). The aforementioned parameters are pivotal contributors towards financial sustainability in terms of financial performance and any variance to either direction is significant (Nyumoo, 2020). On the same breath, there are internal factors which explain these variations in outcome some being, SACCO firm characteristic and technological related aspects such as product innovation and financial process automation which cut across diverse aspects that different SACCOs adopt (Kinyagu, 2021).

Statement of the Problem

Generally, DT-SACCOs face many financial sustainability challenges which make them be earmarked by their umbrella body, namely; SASRA who at some point withdraw their DT practicing licensees (SASRA, Report, 2020). It is empirically evident that the total finances which were not yet remitted by September 2020 was translating to Kshs 4.89 Billion. If compared with the records of 2018, the situation was deteriorating for the year's amounts of the same category was less at 3.87 Billion Kenya shillings as at September 2019 (Ntoiti and Jagongo, 2021). Mwalimu National SACCO is not an exceptional for the past financial performance data portray that the DT-SACCO under the supervision of SASRA depicted a decline in its financial aspect as follows; in 2018, through 2022, the figures were 992.077, 607.000, 361.000, 443.189 and 323.548 in that order in Kenya million shillings. This is material evidence that although the SACCO was noted to take the lead in performance, there are still some challenges on exploiting the financial performance potential.

Past studies focusing on DT-SACCOs have not shown a conclusive conceptual connection between financial process automation and financial performance. Globally in USA, In German, Mohamad Abou-foul et al. (2021) aimed at finding out which manufacturing business can turn technology into business process transformation. Horn and Oehler (2020) analyzed whether people took advantage of an automated service provider who uses systems which do rebalancing of a portfolio in addition to the aforementioned properties. Mohamed Asmy Bin Mohammad Thas Thaker et al. (2019) researched on investments on digital lending platform in Malaysia. Further, in a similar study undertaken by Fernandez and Aman (2018), whose aim was to establish whether Robotic Process Automation (RPA) influenced on Global Accounting Services (GAS) using the logical aspect of the institutional window. The results were impressive for the user reaped the expected benefits.

Boateng, (2020) in Ghana, purposed to meet an objective of establishing the degree to which digital banking affected productivity aspect of DT banks. This was in terms of financial performance. In Cameroon, a similar study aimed at establishing the causal effect connection between of digital financial services on the financial performance of commercial banks. This was done by (Ngwengeh, Messomo and Mbu, 2021). Further, digital electronic payment techniques to banks performance connection was interrogated in Nigeria by Arilesere, Olaleye, Asaolu, and Akienabor (2021). The digitized electronic payment aspect was classified as innovation of financial technological nature.

In the local spheres, similar inquiries to that carried out in both globe and regional viewpoints were undertaken by Nekesa and Olweny (2018) which focused on financial innovation and financial productivity aspect for Kajiado County-based DT-SACCO. Electronic retail payment services and financial performance conceptual framework for Kenyan based banks. It was interrogated by Mwawasaa and Ali, (2020). Further Jumba and Wepukhulu (2019) focused on the subject matter of supermarkets and they sought to comprehend the connection between cashless payments and financial performance. This was for supermarkets domiciled in Nairobi County. In a similar study to the aforementioned one was undertaken by Muigai and Gitau (2018) for they investigated on the matter of innovation strategies and financial performance. Their case tackled the commercial banks located in Kenya.

The aforementioned studies portrayed dissimilar research findings even with similar objectives of demonstrating the effect of automated services of financial nature on firm's performance in financial perspective. First, studies depicted contextual gaps for similar predictor variables used in estimating changes in financial performance was for firms in different industries such as commercial banks, microfinance institutions and even in firms in different physical localities. The methodology of measuring the study variables varied from one firm to another. This was also observed on the aspects of sampling and data analysis methodologies. Hence there exists a methodological gap to be filled. By extension, past studies portrayed conceptual gaps for similar study variables were either used as a pure predictor of financial performance while in other studies (Ngwengeh, Messomo and Mbu, 2021; Boateng, 2020; Howell, et al.2022 and Mohamed et al. 2019) the same variable would have been used as a moderator or as the dependent variable. As a result of this backdrop, this study evaluated the influence of payment automation on profitability of Mwalimu National DT-SACCO, Kenya.

Research Hypothesis

There is no significant effect of payment automation on profitability of Mwalimu National DT-SACCO, Kenya.

Theoretical Review

The inquiry being focused on is pegged on conceptual arguments. The theoretical review section addresses the concern of the theories which underpin the conceptual linkages thereof. There are two main supposition which have been considered in this study. hey include; technology acceptance theory and dynamic capabilities theory.

Technology Acceptance Theory

It is a supposition which was developed by three scholars, namely; Davis, Bagozzi and Warshaw (1989). The argument was of the opinion that before the end users of the new technology assimilate it in their daily routine tasks, the ease of usage perceived aspect and the new technology usefulness or merits needs to be incorporated in the decision making. For the concept to work, first the user has to believe or be convinced that the new technological system will be of paramount importance in enhancing the task performance of the user as far as usage is concerned. On the side of the perceived ease of usage of the new technical know-how, it has to do with fastness of capturing the idea and applying it in the place of work (Baker et al., 2015).

As per this concept, the Technology Acceptance Theory (TAT) operates in a manner that first, the aspect of perceived ease of use triggers the perceived usefulness of that technology. Such that the former is termed as the factor that drives the usefulness perception. However, some of the external factors may act as moderating variable on the relationship between perceived ease of usage and the perceived ease of usage such as environmental factors (Baker et al., 2015).

TAT hypothesis is a mainstream argument which supports the current inquiry in that the aspect of attitude of both the SACCO management and the members served through this technology need to be addressed first before achieving of this objective of technology adoption. That is when both parties are in agreement that Perceived usefulness and ease of use of new technology has to be put in place. With this in mind then, the overall usefulness of the technology acceptance translates to increased output.

Dynamic Capabilities Theory

The aforementioned proposition was brought about by Teece, (1997). The hypothetical viewpoint was based on the resources available in a firm and the extent to which the same resources can be utilized to assimilate a new technology which is termed as useful to the organization. The justification as to why the firm can adjust or forge its existing resources to accommodate the new technology is on the basis of the fact that a firm has dynamic capabilities which guarantees decision making to create, expand and adjust its economic wealth for the purposes of transformation to take place in the organization.

The expected transformation is only manageable by use of processes which repre3sents a complexity of connection between the dynamic capabilities and the process aforementioned. The so-called dynamic capabilities refer to a firm being in apposition to develop new financial muscles to improve productivity through adoption of the new technology using the available resources to prompt competitive edge in the business neighborhood (Teece, 1997).

It is already proven beyond any reasonable doubt that competition environment is characterized by its dynamism for it is frequently changing over time. This has been as a result of the increased end user demand levels for goods and services in the market. By extension, improbability has increased in the surrounding environment. Overall, the observed increase and changes in business process are the keynote activities of BPM hence the reason as to why there exists ability to practice BPM initiatives in a successful manner which is paramount organizational feature.

The dynamic competences is the foundational block of competitive advantage arising in a particular area of specialization and it enhances the aspect of transformation Eisenhardt and Martin 2000). This conceptual viewpoint advocates that firms grow due to the predominant state prevailing. Hence, the speed at which firms are transformed via adjustment of the available resources to cater for the new technology translates to the expected outcome which is realized through dynamic capabilities which allow expansion to the prevalent situations (Plattfaut, Niehaves and Becker, 2011). According to the viewpoint of Bandara et al (2010) who advocated for the idea of dynamic capability adoption, they suggested that BPM is a set of technologies to construct, establish and build a firm's business processes or procedures with an aim of achieving a certain objective within the surrounding environment.

The concept of capability dynamism is a representation of the organization's specific power to create, adjust or even camouflage in a competitive environment so as the firm to be able to survive in the business environment. As a result, business (BPM) projects are termed as continuous for they should end up promoting the business procedures or processes (Trkman 2010). In the short period, the organizations are under severe oppression which force them to scale down he operating costs the reason being that the aspect of dynamism capabilities are associated with retrospective movements. As a result, scholars of the likes of Zollo and Winter (2002) and Winter (2003) pinpointed that to sustain dynamism capabilities would call for more costs being incurred by the firm while any efficient change on the other hand would result to less costs (Winter 2003).

This theory is in support of the current study for the financial muscles that one SACCO has may be missing in another peer SACCO financial institution. As a result, those SACCOs with dynamic capabilities becomes a distinguishing firm characteristic which may be associated with overperformance in the market.

RESEARCH METHODOLOGY

Target Population and Sampling

Sample Size and Sampling Procedure

Target Population

Mugenda & Mugenda (2009) was of the idea that the study populace which is also referred to as universe of the study should be the total number of the objects being studied and should have a universal or common characteristics. The target population in this case was the Mwalimu National DT-SACCO head quarter and the 17 branches across the country as indicated in Table 1

Table 1: Population Frame

	Name of the Branch	Physical Location	Rank of the Official	NOs
1	Upper Hill Branch	Nairobi Upper Hill	Chief Manager-Finance	1
2	TSC Branch	Nairobi-Upper Hill	Chief Manager-FOSA	1
3	Tom Mboya Branch	Nairobi-CBD	Manager-Treasury & Investments	1
4	Kisumu Branch	Kisumu	Branch Manager	1
5	Nyeri Branch	Nyeri	Branch Manager	1
6	Kisii Branch	Kisii	Branch Manager	1
7	Webuye Branch	Webuye	Branch Manager	1
8	Mombasa Branch	Mombasa	Branch Manager	1
9	Kitui Branch	Kitui	Branch Manager	1

10	Meru Branch	Meru	Branch Manager	1
11	Eldoret Branch	Eldoret	Branch Manager	1
12	Nakuru Branch	Nakuru	Branch Manager	1
13	Machakos	Machakos	Branch Manager	1
14	Kapenguria	Kapenguria	Branch Manager	1
15	Kakamega	Kakamega	Branch Manager	1
16	Homa Bay	Homa Bay	Branch Manager	1
17	Thika	Thika Town	Branch Manager	1
18	Embu	Embu	Branch Manager	1
	Total no. of branches (inclusive of headquarter)			**18**

Mwalimu National SACCO Data Base, 2023

From Table 1 above, the total population is made up of only one organization, namely; Mwalimu National DT-SACCO which have 17 branches across the country in addition to the main office which is located in Nairobi.

Data Analysis

Data collected was passed through the process of sorting, editing and data entry step by step guide. This procedure aided the actual data analysis process to get initiated effectively. The starting point was descriptive data analysis of the data to assess the general trend thereof of the two study variables, namely; payment automation and profitability. Then inferential data analysis took the Centre stage. The correlation analysis aim was tested the direction and the degree of strength or weakness of the correlations between two study variables. Then the last step in data analysis was simple regression analysis.

FINDINGS

Pearson's Product Moment Correlation

To assess the direction of the relationship between the independent and dependent variables, and also their level of strength, Pearson Product Moment Coefficient Correlation model was utilized. The study variables under consideration were profitability (the outcome variable) and payment automation. The results were implicated in Table 2

Table 2: Results for Correlation Analysis

		Prof	**PayAuto**
Prof.	Pearson Correlation	1	
	Sig. (2-tailed)		
PayAuto	Pearson Correlation	-.321	1
	Sig. (2-tailed)		.225

*. Correlation is significant at the 0.05 level (2-tailed).

According to Table 2, there exists an inverse relationship between profitability and payment automation where by a unit change in payment automation results to 0.321 units change in profitability which is not significant with (p=0.321) at 0.05 significance level.

Simple Regression

The inquiry carried out hypothesis testing to proof or disapprove the claim made by the researcher that payment automation and profitability of Mwalimu national deposit-taking savings and credit cooperative, Kenya was significant. To test the null hypothesis one which stated that "*There is no significant effect of payment automation on profitability of Mwalimu National DT-SACCO, Kenya."* The results were as indicated in Table 3

Table 3: Results of payment automation on profitability of Mwalimu National DT-SACCO, Kenya

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694[a]	.444	.355	.48400

a. Predictors: (Constant), LendAuto, PayAuto, IAA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.906	3	.302	5.290	.023[b]
	Residual	2.811	12	.234		
	Total	3.718	15			

a. Dependent Variable: Prof

b. Predictors: (Constant), LendAuto, PayAuto, IAA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.561	2.029		2.248	.154
	PayAuto	-.870	.477	-.520	-1.826	.003

a. Dependent Variable: Prof

Table 3 showed that the F statistic of model 1 on the degree to which financial process automation influence Mwalimu National D-SACCO profitability. From the results gotten, F assumed 5.290 with p=0.023) value implying that financial process automation and profitability model was conceptual at 95% confidence level for it was statistically significant.

At 95% confidence level the overall model was proved to be an suitable estimator of the variances observed on profitability of Mwalimu National DT-SACCO, Kenya. Further interrogation on the aspects of goodness of coefficient of determination and test of the slope (β). The results are as indicated as follows;

The coefficient of determination for model 1 from Table 3 mentioned above was (Adjusted R^2 =0.355), which portrays that the predictor variable namely payment automation explained 35.5% of changes in profitability of Mwalimu National DT-SACCO, Kenya. Whereas, 65.5% of changes on profitability of those SACCOs was predicted by other variables which were not incorporated in this empirical model.

After carrying out the test of the slope for the payment automation construct, the outcome was as follows; a unit change in payment automation resulted to 0.520 unit change in profitability which was statistically significant and was of indirect nature with (p=0.003).

The following is an empirical expression which represents the actual connection between financial process automation and profitability of Mwalimu National DT-SACCO, Kenya.

Prof= 4.561-0.520PayAuto

Where;
Prof is Profitability
PayAuto is Payment Automation

Mohamad Abou-foul, et al. (2021) sought to establish the degree to which manufacturing firms can turn technology into business process transformation. it was portrayed that digitalization and servitization had a direct influence on a firm's productivity. Therefore, servitization and digitalization played a key role in improving firm financial performance. In other words, the digital process enhanced the customer involvement, decreases time and slashes charge for the producers.

Kiruja and Kimencu (2020) purposed to investigate the extent to which Nairobi County based commercial banks' financial performance was determined by the business process management practices which was considered as the predictor variable. With multiple regression model, the outcome of the study portrayed that the aspect of product innovation statistically influenced productivity of banks in a direct manner. But for the other two aspects of innovation, namely; financial process, institution and financial market innovation did not significantly influence Mombasa County domiciled commercial banks' financial performance.

Again, in USA Brenner and Meyll (2020) was concerned on the extent of relationship that existed between automated financial advisors and demand level for human being financial or investment service provision. They went ahead and used the investors' data to investigate whether investors' demand for human investment advisory services offered by financial service providers, also referred to as Robo-advisors, was reduced by automated financial advisors. The research findings revealed that there was inverse link between Robo-advisor usage by clients and seeking human financial advice. Further, it was shown that effect of substitution nature of Robo-advisors was prompted by investors especially those who feared to be mistreated by investment impostors. Out of the main findings of this research, it was conclusive that Robo-advise based services seemed to offer a valid investment advice alternative, were worried by conflicts of interest which were imminent as far as human financial advice was concerned.

Ruyi Ge, Zhiqiang (Eric) Zheng, Xuan Tian, and Li Liao (2021) endeavored to establish the conceptual connectivity between human investment service provision and the Robot-crowdfunding loan lending. The research outcome showed that the clients were contrary not much in need of the Robot-financial based services as expected by the researchers. So, the connection was weak and not statistically significant. Instead, it was realized that these users of investment advisory services preferred to alter utilization aspects of the service in reaction to recent Robo-advisor outcome.

Howell, Kuchler, Snitkof, Stroebel and Wong (2022) interrogated the linkage between process automation and credit accessibility concept. The researchers considered a contextual scenario where credit riskless methodology referred to as Paycheck Protection Program (PPP), was adopted by private firms were at their discretion to choose the client to serve in their capacity. In the overall, research findings portrayed that the predictor variables under consideration explained racial differences in loan application behaviors, pre-existing banking relationships, firm performance and or fraud rates in a partial manner.

Boateng, (2020) interrogated the degree to which digital banking in terms of check code number line clearing automation, clearing house automation, interbank settlement automation, Gh-Link automation, and mobile money payment automation was concerned had on the financial performance in terms of ROA which was acting as the dependent variable. The study utilized Partial Least Square (PLS) regression model for data analysis. The research findings revealed that Gh-Link automation, and mobile money payment automation independent variables explained variations in ROA in a significant manner and directly for that matter. The rest of the predictors, namely; cheque code line clearing automation, clearing house automation, and interbank settlement automation showed inverse link which was not statistically significant.

CONCLUSIONS

Rejection of the null hypothesis (H_{01}) resulted to acceptance of the alternative hypothesis which states that; “There is significant influence of payment automation on profitability of Mwalimu National DT-SACCO, Kenya.” This portrays that when payment automation such as establishment loan repayment automation, loan top ups automation and account withdrawals automation, this did not improve profitability of Mwalimu National DT-SACCO in a significant manner.

RECOMMENDATIONS

Mwalimu National DT-SACCO top management will benefit from the research findings for the amount of financial resources available or budgeted for payment automation will be optimally allocated to only those lines which are of value addition. This is because the aspect of automation may not be obviously fitting for all loan activities and carefulness is required to ensure that no disutility is experienced.

SASRA as an agency of government will coincidentally take advantage of the outcome of this interrogation for the conceptual viewpoint addressed herein pinpoints areas of payment automation

policy making to create user-friendly enabling environment to encourage advancement in technology amongst the DT-SACCOs. That is, the government through SASRA will be well guided to set credit facilitation policies which accommodate new technology which replaces the traditional way of processing credit products. which will protect the interests of both counterparties so as to increase safe loan portfolios which by extension will promote the social economic advantages of users of these products and by extension increase employability in the country.

This study is one of its kind in the academic frontier for the theoretical concerns of the connection between financial process automation and profitability of firms is a foundation to further establish whether there exists moderating or intervening factors that can be of influence of the current model in this study. Hence further areas of study may be based on the contextual viewpoint where by the same aspect may be further be investigated upon using other financial institutions such as Micro Financial Institutions (MFIs) and commercial banks in mind that they differ in the way they operate.

REFERENCES

Arilesere, M. S., Olaleye, B. R., Asaolu, A. A., & Akienabor, E. (2021). Digital electronic payment and bank performance in Nigeria. *Ann Spiru Haret Univ Econ S*, *21*(4), 327-40.

Baker S. R, Bloom N, Davis S. J. (2015). Measuring Economic Policy Uncertainty.

Bandara, W. I. (2007). Major issues in Business Process Management: An Expert Perspective. BP Trends, 1-8.

Boateng, K. (2020). The impact of digital banking on the profitability of deposit money banks: Evidence from Ghana. The impact of digital banking on the profitability of deposit money banks: Evidence from Ghana. *International Journal of Research in Finance and Management, 3*(1), 144-150.

Brenner, L., & Meyll, T. (2020). Robo-advisors: a substitute for human financial advice?. *Journal of Behavioral and Experimental Finance*, *2*(5), 100-122.

Daniel, M. M., & Abdul, M. F. (2018). Capital structure and the financial performance of deposit-taking savings and credit cooperative societies in Kenya. *International Journal of Current Aspects in Finance*.

Davis F., Bagozzi and Warshaw P. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models; Management Science, (8), 982-1003.

Eisenhardt K M, B. M. (2000). Organizational complexity and computation. Blackwell, UK: Oxford.

Fernandez, D., & Aman, A. (2018). Impacts of robotic process automation on global accounting services. *Asian Journal of Accounting & Governance*, *9*.

Horn, M., Oehler, A. (2020). Automated portfolio rebalancing: Automatic erosion of investment performance?. *J Asset Manag* **21**, 489–505 https://doi.org/10.1057/s41260-020-00183.

Howell, S. T., Kuchler, T., Snitkof, D., Stroebel, J., & Wong, J. (2022). Automation in small business lending can reduce racial disparities: evidence from the paycheck protection program. *Available at SSRN 3939384*.

International Co-operative Alliance, (2021). *Guidance Notes to the Co-operative Principles*. Geneva: ICA.

Jumba, J., & Wepukhulu, J. M. (2019). Effect of Cashless Payments on the Financial Performance of Supermarkets in Nairobi County,Kenya. International Journal of Academic Research Business and Social Sciences, 9(3), 1372–1397.

Kiaritha, H. W. (2015). Determinants of the financial performance of savings and credit cooperatives in the banking sector in Kenya. Jomo Kenyatta university of Technology.

Kinyagu, J. K. (2021). *Diversification Strategy and Financial Performance of Kenya. National Police Deposit Taking Sacco* (Doctoral dissertation, University of Nairobi).

Kiruja, K. C. & Kimencu, L. (2020). Effects of business process management practices on financial performance of commercial banks in Nairobi County, Kenya. *International Academic Journal of Human Resource and Business Administration, 3*(9), 1-26.

Lydia, C. (2018). *Effect of Asset Performance Management on Profitability of Deposit Taking Saccos in Nakuru County* (Doctoral dissertation, JKUAT).

Mohamad Abou-foul, José L. Ruiz-Alba & Anabela Soares (2021) The impact of digitalization and servitization on the financial performance of a firm: an empirical analysis, Production Planning & Control, 32:12, 975-989, DOI: 10.1080/09537287.2020.1780508.

Mohamed Asmy Bin Mohammad Thas Thaker et al. (2019). Factors affecting investors' ntention to invest in a peer-to-peer lending platform in Malaysia: An extended technology acceptance model, ADBI Working Paper Series, No. 998, Asian Development Bank Institute (ADBI), Tokyo.

Mugenda, O. M. & Mugenda, A. G. (2009). Research methods: Quantitative and Qualitative approaches. Nairobi: ACTS.

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*.

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.

Nekesa, S. M., & Olweny, T. (2018). Effect of financial innovation on financial performance: a case study of deposit-taking savings and credit cooperative societies in kajiado county. *International Journal of Social Sciences and Information Technology*, *4*(5), 370-389.

Ngui, A. M. & Jagongo, A. (2017). Capital Adequacy And Financial Performance Of Deposit Taking Savings And Credit Co-Operative Societies In Kenya.

Ngwengeh B.B., Messomo E.S. & Mbu S.A. (2021). The Influence of Digital Financial Services on the Financial Performance of Commercial Banks in Cameroon. *European Scientific Journal, ESJ, 17*(15), 448-465.

Ntoiti, R., & Jagongo, A. (2021). Non-Performing Loans and Financial Stability of Deposit Taking Saccos Regulated by SASRA. *International Journal of Finance and Accounting*, *6*(2), 29-39.

Nyumoo, A. K. (2020). *Effects of Internal Control on the Financial Performance of Saccos in Meru County* (Doctoral dissertation, KeMU).

Plattfaut, R. &. Niehaves & Becker, 2011). Service Innovation Capabilities in IT-Consulting. 20th European Conference on Information Systems (ECIS), 11.

Ruyi Ge, Zhiqiang (Eric) Zheng, Xuan Tian, and Li Liao (2021). Human–Robot Interaction: When Investors Adjust the Usage of Robo-Advisors in Peer-to-Peer Lending. https://doi.org/10.1287/isre.2021.1009.

SASRA SACCO supervision reports (2020). Retrieved from http://www.sasra.go.ke/

Teece, D. (2007). Explicating dynamic capabilities: The nature and micro foundations of (sustainable) enterprise performance. *Strategic Management Journal*, *13*(19)- 13-50.

Winter, S. G. (2003). Understanding dynamic capabilities. Strategic Management Journal, 24(10), 991-995.

World Council of Credit Unions. (2017). About Us. Retrieved from https://www.woccu.org/.
York: John Wiley & Sons, Inc.

Zollo, M. & Winter (2002). Deliberate learning and the evolution of dynamic capabilities. Organization Science, 339-351.