

Technology Complexity And Utilization Of Alternative Banking Channels

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Abstract

Alternative Banking Channels have been found to have positive benefits for financial institutions. Financial institutions such as commercial banks and insurance companies have employed alternative banking channels to a great extent but SACCOs which are an important part of the financial system have been left behind in this respect. Technology complexity plays a role in the utilization of any type of IT innovation including alternative banking channels. The current study therefore sought to determine the effect of technology complexity on utilization of alternative banking channels among deposit-taking SACCOs in Nyeri County in Kenya. This research used a descriptive cross-sectional survey approach. Deposit-taking SACCOs in Nyeri county were the unit of analysis while managers are the unit of observation. Information was gathered via the use of a questionnaire. Descriptive and correlation analysis was used to analyse data with the help of Statistical Package for the Social Sciences. The study found that technology complexity in the alternative banking channels among deposit-taking SACCOs was average. Technology complexity was significantly associated utilisation of alternative banking channels. The study showed that technology posed a significant barrier to the adoption and utilization of ABCs, especially among older, less literate, and rural members who may lack access to necessary gadgets. SACCOs should therefore organize training sessions and educational workshops for members, particularly targeting older, less literate, and rural members to teach basic digital literacy skills and how to use ABCs effectively.

Keywords: Alternative Banking Channels, financial technology, technology, technology complexity, savings and credit co-operative societies

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I. Introduction

The Alternative Banking Channels (ABCs) also referred to as alternative delivery channels (ADCs) or alternate service delivery channels (ASDC) are innovative service delivery modes that offer diversified financial services like cash withdrawal, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests, and other financial enquiries (Elumaro & Obamu, 2018). The main alternative delivery channels in banking sector include Internet Banking, ATM Card, Debit Card, Credit card, Mobile Banking, UPI, and E-wallet etc. Through ABCs, customers can perform banking transactions through ATM / POS / Multi-functional Kiosks, contact the bank's Call Center for any inquiry, access the digital Interactive Voice Response (IVR), perform transactions through Internet Banking, and even on smartphones through mobile banking (Hosseini, 2018). Alternative Banking Channels came into effect to ease the rigors of traditional banking system (Makinwa, 2021). Ease of transaction, safer customer journey, zero waiting time, better experience, and quick service are some benefits of ABCs. The use of ABCs has allowed smooth operation in the financial system. It is now possible to pay for electricity bills, phone bills, phone top-ups, insurance premiums, travelling expenses, and television cable subscriptions using the ABCs anywhere anytime. alternative banking channels have a significant positive influence on customers' satisfaction as well as banks' overall performance and customers are satisfied with the existing channels (Bishwas & Ashrafy, 2020).

Globally the utilisation of ABCs by financial institutions has been growing rapidly. As per Mühlberg (2023), many bank alternatives in the US are neobanks, fintechs, or online-only banks that don't have physical branches. Others may have fewer customer support staff and rely more on automation for customer service. Pew (2021) found that 35 percent of U.S. adults with mobile phones use mobile banking services, a jump from only 18 percent in 2011. Thunes (2023) reports that today, most Chinese consumers have transitioned to mobile money apps like Alipay and WeChat, with bank cards and credit cards also used. The alternative banking channels used in Africa, as mentioned by The MasterCard Foundation (2016) are ATMs and agents, mobile banking, online banking and call centres. According to BPC and Fincog (2021), mobile Money Platforms: Such as MPesa, which serves a large customer base and contributes to financial infrastructure. In addition, despite low penetration rates, mobile internet is crucial for financial services distribution and inclusion goals. In Kenya, the Central Bank of Kenya (2023) reports that Kenyan banking institutions are increasingly focusing on collaboration and partnerships

with Fintech start-ups to provide innovative services and products to customers. Majority of the commercial banks use the different alternate / e-payment channels to carry out the day-to-day business transaction in the commercial banks. However, SACCOs have been left behind in this regard only using a limited number of ABCs.

Alternative Banking Channels have been found to have positive benefits for financial institutions. According to Odhiambo (2018), the customers benefit from the convenience of banking anywhere, anytime affordably and faster, the banks benefit from reduced staff costs and other related operational expenses. Banking channels like the ATM, mobile, agency and internet banking have made it possible for banks to achieve a wider market share across all geographical areas with minimal efforts (Muchiri, 2017). Nazaritehrani and Mashali (2020) found that some of these channels, including internet banking, POS, and TB, positively affect a bank's market share. In Kenya, Motondi and Bula (2020) found out that agency, mobile, internet and ATM banking have a positive influence on performance of commercial banks in Nairobi City county, Kenya.

Financial institutions such as commercial banks and insurance companies have employed alternative banking channels to a great extent to reach out to more clients and lower operational costs (Motondi & Bula, 2020). However, SACCOs which are an important part of the financial system have been left behind in this respect. Currently, no SACCO offers internet banking and the few that have adopted agency banking and mobile banking provide scarce services to its customers in those platforms. Services offered through mobile phones are also very limited compared to what banks offer (SASRA, 2021). Nkonge (2018) also observed that SACCOs have not adopted technology, including electronic banking, at a high rate as compared to commercial banks in Kenya. Failure to adopt ABCs by SACCOs means that these institutions miss out on the many benefits conferred by these innovations. It also subjects the SACCOs to poor performance as they face competition from banks which offer services through these channels for the convenience of customers. The reasons for the low utilization of ABCs among SACCOs phenomenon are not clear. Several researchers have carried out studies into the utilization of alternative banking channels by banking institutions. However, the vast majority of studies on ABCs have been carried out among commercial banks leaving a knowledge gap on how the situation in other financial institutions more so SACCOs.

Technology complexity plays a role in the utilization of any type of IT innovation including alternative banking channels. Complexity refers to the degree to which an innovation is perceived as difficult to understand and use (Berger & Kuckertz, 2016). Technological complexity indicates the needed technological level for the design and manufacture of an industrial product, considering its characteristics and performances. Past research has indicated that an innovation with substantial complexity requires more technical skills and needs greater implementation and operational efforts to increase its chances of adoption (Patel & Patel, 2018). The challenge when designing lies in eliminating the perceived complexity, the confusion and frustration caused to users by poor design, and providing an enjoyable overall user experience (UX). According to Mewes and Broekel (2020), one the one hand, complex technologies offer substantial economic benefits, and on the other, they are difficult to invent and to imitate, and they refuse a fast dissemination.

A study by Machogu and Okiko (2015) revealed that there exists a strong relationship between electronic banking complexities- Ease of Access/Accessibility, Inter-Phase Design, Cost/Fees/Charges, E-Banking Equipment usage, Privacy/Risk/Authentication, and Customer Satisfaction, and customer satisfactions with the female respondents exemplifying higher satisfaction levels than their male counterparts. Similarly, Mungai (2017) concluded that the inception of an agency takes a lot of time which is caused by the laid down guidelines by the banks. The guidelines were not limiting many from being agents. In a study by Odhiambo (2018) discovered a high rate of 68.47% of the respondents reported that e-banking is risky and untrustworthy thereby affecting channel migration efforts by the bank. The current study therefore sought to determine the effect of technology complexity on utilization of alternative banking channels among deposit-taking SACCOs in Nyeri County.

II. Materials And Methods

This research used a descriptive cross-sectional survey approach. Deposit-taking SACCOS in Nyeri county were the unit of analysis while managers are the unit of observation. According to SASRA (2020), there were 8 deposit-taking SACCOS in Nyeri county. Members of the top management teams were the respondents in the study. A census of all 8 deposit-taking SACCOS in Nyeri county was carried out in the study. This is because the total number of SACCOs was small (8) and therefore manageable and Purposeful sampling was used to recruit respondents. From each of the 8 SACCOs, 10 managers were purposefully selected into the study.

Information was gathered via the use of a questionnaire that individuals completed themselves. This research used the use of face validity, content validity, and criteria validity. In order to determine the dependability of the questionnaire in this research, internal consistency was assessed using Cronbach's alpha. For this study, a threshold of 0.7 was used. Items with a coefficient of 0.7 or less was rephrased or deleted to enhance the reliability of the questionnaire (Heo et al., 2015). The proposal got approval from the School of Business at Kenyatta University. The researcher applied for a research authorization from the National Commission for Science, Technology, and Innovation (NACOSTI). Consent was also be obtained from the management of the participating

SACCOs to gather data. Upon obtaining permission, the responder got a link to the questionnaire by email, text message, or WhatsApp. The recipient was provided with a 14-day period to complete the questionnaire. The process of gathering data took a duration of 5 weeks.

The data underwent both descriptive and inferential analysis using SPSS. The descriptive analysis included calculations for frequencies, percentages, mean, and standard deviation. These helped the researcher establish ABCs associated costs, ABCs technology complexity, ABCs security and customer ABCs preferences. The collective impact of several independent factors on the use of ABCs by deposit-taking SACCOs was established using regression analysis. Findings were presented in form of tables.

III. Results

Socio-Demographic Data

A total of 73 members of the top management teams in deposit-taking SACCOs in Nyeri county took part in the study. This represents a response rate of 91.3%. Because this response rate is well above 70% as recommended by Kothari (2017), the response rate in this study is deemed acceptable. Demographic data of respondents which comprised their gender, age, level of education and working experience was collected. The data was then analysed using frequencies and percentages and presented in Table 1. Most (57.5%) of the respondents in the study were male with the female respondents accounting for 42.5% of the sample. Majority (71.2%) of the respondents were in the 31- and 40-years age group. The mean age was 36 years. All respondents in the study had acquired post-secondary education with 89% having a bachelor's degree and 5.5% having acquired a masters degree. The results also show that slightly above half (54.8%) of the respondents had acquired over 10 years of working experience while 20.5% had between 4 and 6 years of working experience. These results show that the respondents on the study were well educated and highly experienced in their work. As such the sample could be relied upon to give resourceful information regarding utilization of alternative banking channels in their deposit-taking SACCOs.

Table 1 Respondents' Socio Demographic Data

		N	%
Indicate your gender	Male	42	57.5%
	Female	31	42.5%
Indicate the group where our age falls	21-30	7	9.6%
	31-40	52	71.2%
	41-50	14	19.2%
Indicate the highest level of education that you have completed	Diploma	4	5.5%
	Degree	65	89.0%
	Masters	4	5.5%
Indicate the number of years you have worked in this SACCO	1-3	8	11.0%
	4-6	15	20.5%
	7-9	10	13.7%
	10+	40	54.8%

Utilization of Alternative Banking Channels

The study sought to find out which alternative banking channels were offered by the deposit-taking SACCOs in the study. Results in Table 2 show that all (100%) the respondents indicated that their SACCO offered mobile banking while 90.5% indicated debit and credit cards. Majority (85.7%) also indicated agency banking was offered in their SACCOs. All respondents (100%) indicated that ABCs were used in cash deposits and withdrawals. The vast majority (95.2%) also indicated that ABCs were utilised for balance inquiries and funds transfer. Slightly below half (45.2%) of the respondents indicated that between 51% and 75% of transactions in their SACCO were through ABCs while 26% indicated over 75%. These results demonstrate that a variety of ABCs were used in the sample of SACCOs in this study however the services offered through ABCs and the level of utilisation differed across SACCOs.

Table 2 Utilization of Alternative Banking Channels

	Response	N	%
ABCs offered	Debit card	66	90.5
	Agency Banking	63	85.7
	ATM	70	95.2
	Credit Card	66	90.5
	Internet Banking	14	19.0
	Mobile banking	73	100.0
ABCs services	Point of sale	35	47.6
	Account opening	17	23.8
	Balance inquiries	70	95.2
	Bill payments	56	76.2

	Cash deposits	73	100.0
	Cash withdrawals	73	100.0
	Funds transfer	70	95.2
	Loan requests	3	4.8
	Mini statement requests	70	95.2
Proportion of services offered through ABCs	Below 25%	7	9.6
	26% - 50%	14	19.2
	51% -75%	33	45.2
	Over 75%	19	26
	Total	73	100

Technology Complexity

To investigate technology complexity in the alternative banking channels among deposit-taking SACCOS, the researcher asked the respondents their opinion regarding ABCs ease of use, timeliness and reliability. Majority (83.6%) of the respondents disagreed that their customers had a hard time using alternative banking channels. An equal number (83.6%) also disagreed that their employees find it difficult to use alternative banking channels. The vast majority (95.9%) of the respondents agreed that ABCs are more timely than traditional banking. As shown in Table 3, all (100%) respondents agreed that alternative banking channels are more convenient than traditional banking. In addition, majority (83.6%) agreed that ABCs are more timely than traditional banking. The average mean (3.01) signifies a moderate agreement with the items in Table 3. This shows that the technology complexity in the alternative banking channels among deposit-taking SACCOS was average.

Table 3 Descriptive Analysis of Technology Complexity

	Agree	Uncertain	Disagree	Mean	SD
Our customers have a hard time using alternative banking channels	5.5%	11.0%	83.6%	1.95	0.780
Employees find it difficult to use alternative banking channels	5.5%	11.0%	83.6%	1.77	0.858
Alternative banking channels are more timely than traditional banking	95.9%	0.0%	4.1%	4.71	0.841
Alternative banking channels are more convenient than traditional banking	100.0%	0.0%	0.0%	4.84	0.373
Alternative banking channels are more timely than traditional banking	83.6%	11.0%	5.5%	4.77	0.858
Average				3.01	0.742

Respondents in the study were asked to indicate how the complexity of technology impact member adoption and utilization of ABCs. Responses revealed that the complexity of technology poses a significant barrier to the adoption and utilization of ABCs, especially among older, less literate, and rural members who may lack access to necessary gadgets. System reliability issues and general resistance to change further exacerbate these challenges.

- "It's a challenge to the older generation but well embraced by the younger members of the community"*
- "Quite a large number are yet to adopt the channels due to system failures and limited amounts per transactions"*
- "Some find it challenging due to illiteracy and lack of modern gadgets"*
- "Technology requires gadgets like smartphones which might not be accessible to rural members. Unlike traditional banking the illiterate and semi-literate might find technology difficult to adopt"*
- "When technology is complex, members may tend to resist the adoption of the ABCs."*
- "If a channel is too complex members are reluctant to utilize it."*

Correlation Analysis

Correlation analysis was conducted between technology complexity and utilization of alternative banking channels among deposit-taking SACCOs in Nyeri County. This was achieved by correlating the scores of technology complexity with those of utilisation. The Pearson's correlation coefficient (r) was found to be .618, which indicates a strong positive correlation between technology complexity and the utilization of alternative banking channels. The Spearman's correlation coefficient (ρ) was .581, also suggesting a strong positive correlation between the two variables. The results are statistically significant, as the p-values for both Pearson's R and Spearman Correlation are less than the significance level of 0.05 (p < .000). These findings suggest that as the complexity of technology increases, the utilization of alternative banking channels among deposit-taking SACCOs in Nyeri County also increases.

Table 4 Correlation of Technology Complexity and Utilization

	Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Interval by Interval Pearson's R	.618	.058	6.441	.000 ^c
Ordinal by Ordinal Spearman Correlation	.581	.087	5.836	.000 ^c
N of Valid Cases	69			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.
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c. Based on normal approximation.

IV. Discussion

The study found that technology complexity in the alternative banking channels among deposit-taking SACCOs was average. Technology complexity was significantly associated with utilization of alternative banking channels. The positive correlation between technology complexity and the utilization of alternative banking channels aligns with the expectation that individuals or organizations may be more likely to adopt alternative channels when they perceive traditional methods to be complex or difficult to use. This result is in support of the Technology Acceptance Model which posits that a person's willingness to use and actual utilization of a technology are determined by their views of the technology's utility and simplicity of use. The result supports the Diffusion of Innovation model which posits that the adoption of an invention is influenced by five primary characteristics: relative advantage, trialability, observability, compatibility, and low complexity. This finding also coincides with Son et al. (2020) finding that customer attitude has a crucial role in reducing perceived risk, which in turn increases confidence and significantly influences users' willingness to participate in online transactions involving money and personal sensitive information. This result also agrees with findings of Machogu and Okiko (2015) and Odhiambo (2018) where complexities of various ICT software influenced their adoption. The strong positive correlation between technology complexity and the utilization of alternative banking channels highlights the importance of technological advancements in the SACCO sector. As SACCOs strive to meet the evolving needs and preferences of their customers, the adoption of more complex technological solutions can enable them to offer a wider range of banking services through alternative channels.

V. Conclusion

Technology complexity affects utilization of alternative banking channels among deposit-taking SACCOs in Nyeri County. The study showed that technology posed a significant barrier to the adoption and utilization of ABCs, especially among older, less literate, and rural members who may lack access to necessary gadgets. These findings have important implications for SACCO managers and policymakers, as they suggest that investments in technological infrastructure can lead to increased utilization of alternative banking channels, which can ultimately enhance the accessibility and convenience of financial services for SACCO members. SACCOs should organize training sessions and educational workshops for members, particularly targeting older, less literate, and rural members to teach basic digital literacy skills and how to use ABCs effectively. They can also utilize community centres or local meeting places to provide hands-on training and support.

References

- [1] Berger, E. S., & Kuckertz, A. (2016). The Challenge Of Dealing With Complexity In Entrepreneurship, Innovation And Technology Research: An Introduction. In *Complexity In Entrepreneurship, Innovation And Technology Research* (Pp. 1-9). Springer, Cham.
- [2] Bishwas, P. C., & Ashrafy, S. (2020) The Role Of Alternative Banking Channels On Banks' Sustainability Through Customer Satisfaction In Bangladesh: Evidence From Covid-19 Pandemic.
- [3] Elumaro, A. J., & Obamuyi, T. M. (2018). Card Frauds And Customers' Confidence In Alternative Banking Channels In Nigeria. *European Scientific Journal*, Esj, 14, 16.
- [4] Heo, M., Kim, N., & Faith, M. S. (2015). Statistical Power As A Function Of Cronbach Alpha Of Instrument Questionnaire Items. *Bmc Medical Research Methodology*, 15(1), 1-9.
- [5] Hossein, C. S. (2018). Alternative Banking Among The African Diaspora. In *Politicized Microfinance* (Pp. 110-133). University Of Toronto Press.
- [6] Machogu, A. M., & Okiko, L. (2015). E-Banking Complexities And The Perpetual Effect On Customer Satisfaction In Rwandan Commercial Banking Industry: Gender As A Moderating Factor. *The Journal Of Internet Banking And Commerce*, 20(3).
- [7] Makinwa, O. O. (2021). Impact Of Alternative Banking Channels On Financial Performance Of Deposit Money Banks In Nigeria (Doctoral Dissertation, Kwara State University (Nigeria)).
- [8] Mewes, L., & Broekel, T. (2020). Technological Complexity And Economic Growth Of Regions. *Research Policy*, 104156.
- [9] Motondi, F. O., & Bula, H. (2020). Alternative Banking Channels And Performance Of Commercial Banks In Nairobi City County, Kenya. *International Academic Journal Of Economics And Finance*, 3(6), 47-65.
- [10] Muchiri, F. N. (2017). Strategic Alternative Banking Channels And Performance Of The Commercial Banks In Kenya (Doctoral Dissertation, University Of Nairobi).
- [11] Mungai, E. H. M., & Omagwa, J. (2017). Challenges Associated With Adoption Of Agency Banking And Bank Performance: A Case Of Selected Commercial Banks In Kenya. *Iosr Journal Of Business And Management*, 19(04), 70-76.
- [12] Nazari, F., Khosravi, F., & Babalhavaeji, F. (2013). Applying Rogers' Diffusion Of Innovation Theory To The Acceptance Of Online Databases At University Zone Of Iran. *Malaysian Journal Of Library & Information Science*, 18(3), 25-38.
- [13] Nazaritehrani, A., & Mashali, B. (2020). Development Of E-Banking Channels And Market Share In Developing Countries. *Financial Innovation*, 6(1), 12.
- [14] Odhiambo, C. O. (2018). An Evaluation Of Adoption Rate Of E-Banking Channels In Kcb Bank Kenya Limited, Kisumu City (Doctoral Dissertation, Maseno University).
- [15] Son, Y., Kwon, H. E., Tayi, G. K., & Oh, W. (2020). Impact Of Customers' Digital Banking Adoption On Hidden Defection: A Combined Analytical-Empirical Approach. *Journal Of Operations Management*, 66(4), 418-440.
- [16] The Mastercard Foundation (2016). *Alternative Delivery Channels For Financial Inclusion: Opportunities And Challenges In African Banks And Microfinance Institutions 2016*. Bfa