A Comparative Study of Digital Banking Platforms in Germany and Botswana Commercial Banks, using Services Quality Models

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Abstract. The widespread influence of technology revolutionized every area of life and fundamentally changed how businesses and organisations functioned, including the banking sector. As technological progress continued, it became necessary for banks to incorporate digital solutions into their services and products to keep up with the constantly evolving expectations of their customers. This study carried out a comparative analysis of digital banking platforms within the commercial banking industries of Germany and Botswana. The main challenge examined was the disruption caused by financial technology companies, which began offering services that were traditionally provided by banks. This shifts pressured banks to either develop their own digital services or collaborate with financial technology firms to make use of emerging technologies.

A mixed methods research approach was adopted, combining qualitative data from interviews with quantitative data from questionnaires. Respondents were selected using judgmental sampling. The findings showed that younger generations adopted digital banking at significantly higher rates, while older generations engaged less due to limited technological skills. Furthermore, access to essential technologies such as internet connectivity and smart devices was a critical factor in digital banking usage. A notable comparison between Germany and Botswana indicated that German banks had more advanced and widely adopted digital banking platforms, supported by stronger infra-structure and higher digital literacy. In contrast, Botswana's banking sector was still in the earlier stages of digital transformation, with adoption levels largely influenced by urban-rural divides and access to technological resources.

Keywords: Digital banking, Omni channels, usage

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1 Introduction

The swift evolution of digital technologies has revolutionised the global financial services sector, catalysing widespread adoption of digital banking platforms and financial technology innovations. This transformation marks a paradigm shift in financial service delivery where banks leverage advanced technologies to gain deeper customer insights, anticipate needs more accurately and provide integrated multichannel banking experiences. Customers today enjoy the flexibility to access financial services through both conventional and digital channels, benefiting from increasingly automated and stream-lined processes (Agbeve, Adukpo and Mensah 2025; Shaktona and Farruxovna 2025).

Digital banking extends well beyond traditional electronic banking. It encompasses real time analytics, mobile applications, cloud services, virtual assistants and wearable technology, all designed to improve both user experience and operational efficiency (Nguyen 2020; Mbama 2018). According to Haralayya (2021) it allows for continuous interaction between banks and customers across multiple devices, enabling instant fund transfers, real time account updates, personalized financial services and access to broader financial ecosystems. These developments reflect a fundamental shift in banking models from reliance on branch based and product led approaches to customer led and digitally driven strategies. Technologies such as artificial intelligence, big data and blockchain are increasingly central to service innovation, helping banks reduce dependence on physical infrastructure while elevating service quality. The global transition to digital banking has been fuelled by increased internet access and smartphone penetration, profoundly reshaping consumer expectations and behaviours. Today's customers demand convenience, immediacy and 24-hour service availability. Generational shifts are also evident, with younger users leading adoption trends. For example, Cuesta and Tuesta (2015) reported that 94 percent of American millennials used digital banking services in 2014 compared to just 40 percent of the general adult population at the time. Similar patterns have emerged globally, highlighting the role of digital literacy, lifestyle and technology access in shaping usage patterns. Despite these global trends, the rise of digital banking has disrupted traditional banking models, especially in developed economies where agile financial technology firms have challenged the dominance of established institutions. Although traditional banks benefit from extensive infrastructure and resources, their efforts to implement standardized digital solutions often struggle across diverse markets due to differences in economic conditions, technological capabilities and cultural preferences (Gaur and Ondrus 2012). The same scholars criticized the lack of customer consultation in digital solution development, which has led to low uptake and user disengagement. Furthermore, the transition to digital banking involves higher initial costs and procedural complexity compared to earlier innovations such as chip enabled cards.

2 Research Gap

Many scholars have examined the extent to which banks are adopting digital banking and the dimensions of service quality, but few have explained why commercial banks in developing countries such as Botswana are increasingly compelled to adopt digital banking (Klus et al., 2019; Omarini, 2017; Dorfleitner et al., 2017). Studies in developed countries such as Germany (Ma, 2012; Singh & Kaur, 2011) have focused on measuring the impact of digital banking on customer satisfaction, concluding that adoption has a positive effect. However, these studies rarely explore the underlying reasons for slow efficiency gains and adoption rates in those markets.

Omarini (2017) discusses the changing role of banks beyond traditional functions such as accepting deposits and issuing loans. With digital disruption accelerating, it is argued that successful financial institutions must focus on three strategic priorities: technology adoption, content personalization, and the building of customer trust. These priorities are essential for narrowing the gap between rising customer expectations and banks' ability to deliver consistent and accessible digital services. In an increasingly fragmented financial services environment, where service delivery is spread across multiple digital platforms, failure to adapt may result in banks becoming sidelined.

While developed markets such as Germany exhibit a high level of digital banking maturity, with customers showing strong technical competence and trust in digital systems (Diener and Špaček 2021), emerging economies such as Botswana present a more complex picture. Botswana's banking sector, shaped by the financial reforms introduced in 1991 in partnership with the World Bank, is profitable by regional standards but still lags behind other middle-income economies in key metrics such as deposit volumes and credit availability (Moffat 2008). Limited physical infrastructure, with only about 500 ATMs and fewer than 200 branches for a population of 1.5 million adults, restricts access to services. Additionally, persistent liquidity pressures, slow credit growth and the economic impact of the COVID 19 pandemic have hampered digital progress (Sathyamoorthi et al. 2020; Sejoe and Mokhurutshe 2020).

Adoption of digital banking in Botswana is shaped by demographic and infrastructural challenges. Usage is mainly concentrated among younger urban residents, while older and rural populations tend to rely on mobile money platforms such as ewallet, MyZaka and Orange Money. In contrast, Germany benefits from strong digital infrastructure, a well-regulated banking environment and a high level of customer digital literacy. These differences make the comparison between Botswana and Germany a valuable opportunity to explore how local factors including technology, regulation and customer preferences influence the growth and implementation of digital banking services.

3 Research Questions

i) What is the status of digital banking platforms use in Germany and Botswana
ii) Comparative study of Digital Banking platforms in Germany and Botswana

iii) What are the similarities and differences of online and face to face interactions concerning customer satisfaction and acceptance
iv) What are the characteristics of Germany and Botswana banks clientele who utilize digital banking platforms

This study explores digital banking platforms in both countries, focusing on adoption and usability patterns in relation to service quality, customer behaviour and institutional capacity. The research aims to contribute a cross contextual understanding of how digital banking evolves in both advanced and emerging economies and the conditions that support its successful integration into national financial systems.

4 Theoretical Framework

This study adopted the ES-QUAL and E-RecS-QUAL models developed by Parasuraman et al. (2005), which have since been widely applied by researchers such as Paschaloudis and Tsourela (2021) and Ulkhaq et al. (2017).

The E-S-Qual model consists of 22-item scale of four dimensions (efficiency, fulfilment, system availability, privacy) while E-RecS-QUAL model consists of an 11-item scale in three dimensions (responsiveness, compensation, contact). In addition, the scales indicate good psychometric properties obtained from their reliability and validity tests. The E-S-QUAL and E-RecS-Qual models were chosen because their variables represent factors that affect implementation of digital platforms in this modern-day era.

The first dimension of the E-S-QUAL model, efficiency, is defined as the easiness and quickness when the users are accessing the website, and is related to minimal input of information, appropriate structuring of website and how simple it is to use and operate. Fulfilment is defined as the degree to which the service provider's promises about order delivery and fulfilment of the availability of the products. System availability, the third E-S-QUAL dimension, refers to the accurate technical functioning of the website, and is related to the ability of the service provider to maintain the website so that it works appropriately. Lastly, the fourth dimension of the E-S-QUAL model, privacy, refers to the level of protection of customer information. The e-service quality is measured by multiplying the weights with the performance scores as follows:

$$E - S - QUAL_J = \sum_{i=1}^{n} WS_{ij} * PS_{ij} \cdots (1)$$

Where:

$ES - QUAL$; the eservice quality score of item statement j

WS_{ij}; the weighting factor of e-service quality of item statement j to an individual i

PS_{ij}; the score obtained from individual I with respect to the performance of e-service quality on item statement j

The Electronic Recovery Service Quality model (E-RecS-QUAL) consists of an 11-item scale covering three dimensions (responsiveness, compensation, and contact).

The scales indicate good psychometric properties obtained from their reliability and validity tests. Responsiveness, the first E-RecS-QUAL model dimension, refers to the extent to which problems are handled effectively through the website and, the second dimension, compensation, refers to the level to which the service provider compensates customers for any problem that might happen. Lastly, the third E-RecS-QUAL model dimension, contact, refers to the

accessibility of any help from the service provider either through an online representative or through a telephone. The e-service quality recovery is measured by multiplying the weights with the performance scores as follows:

$$E - RecS - QUAL_J = \sum_{i=1}^{n} WR_{ij} * PR_{ij} \cdots (2)$$

Where:

$E - RecS - QUAL$; the eservice quality recovery score of item statement j

WR_{ij}; the weighting factor of e-service quality recovery of item statement j to individual i

PR_{ij}; the score obtained from individual I with respect to the performance of e-service quality recovery on item statement j.

This theoretical framework is relevant to digital banking in Botswana and Germany because it pro-motes how banks should provide quality service to clients as well as the protection of customers when using digital banking platforms.

5 Methodology

This study used a mixed method approach and employed a pragmatic research approach that integrated quantitative and qualitative methods to examine digital banking usage in Germany and Botswana. In accordance with Gillespie et al (2024), pragmatism provided a flexible and rigorous analytical framework particularly appropriate for this comparative research. The study focused on two key stakeholder groups comprising bank customers and senior managers from Gaborone, Botswana and Heidenheim, Germany. The mixed methods research design was employed, with a primary emphasis on the quantitative approach to provide diagnostic and predictive insights into digital banking platform adoption and usability patterns across the two national contexts. This involved evaluating the quality of electronic service delivery using established models. Conversely, the qualitative component aimed to explore the underlying reasons for differences in adoption and usage levels between the two countries.

Quantitative data were gathered through a cluster sampling approach targeting bank customers from major commercial institutions in each location. Gaborone, Botswana's capital and financial centre with a population of 208,411 (Statistics Botswana, 2022), was selected due to its concentrated banking activity and diverse customer base. In Germany, the research focused on Heidenheim, a city of approximately 49,526 residents. This location was chosen because the researcher could physically access it from Botswana. It contained multiple major banking institutions and offered practical feasibility for data collection during the post-pandemic recovery period. Participants were drawn from leading commercial banks in each location, including Sparkasse, Volksbank, Deutsche Bank, Commerzbank and DZ Bank in Germany.

The sample size calculation applied Cochran's 1977 formula with a 90 per cent confidence level and 7 per cent margin of error, establishing a target of 150 respondents per country. While the Botswana sample achieved a 91% response rate, with 127 out of 150 distributed questionnaires returned, the German sample yielded only 39 valid responses, primarily due to pandemic-related restrictions that limited public engagement during the data collection period. One hundred questionnaires went out to clients in Germany, and 150 questionnaires went out to clients in Botswana.

The qualitative component complemented the survey data through in-depth interviews with senior bank managers selected via purposive sampling. While initially targeting 10 participants per country, data saturation was achieved with 8 interviews in Germany and 6 in Botswana, all with executives directly involved in digital banking strategy and implementation. These

participants provided expert insights that contextualized the quantitative findings while demonstrating the depth of perspective achievable with smaller, strategically selected samples.
The mixed-methods design enabled comprehensive examination of both usage patterns and their underlying drivers. Although the smaller German customer sample affected statistical generalizability, the qualitative findings reached theoretical sufficiency in both national contexts. All methodological decisions adhered to pragmatic principles, prioritizing actionable knowledge generation while accommodating real-world research constraints. Attention was given to the comparative study design and the practical challenges of cross-national research during the pandemic recovery period.

The questionnaire and interview guide served as the primary research instruments for quantitative and qualitative data collection, respectively. The customer questionnaire incorporated a mix of closed and open-ended questions designed to assess perceptions of digital banking service quality. It was structured based on the E-S-QUAL and E-RecS-QUAL models developed by Parasuraman et al. (2005), ensuring alignment with internationally recognized standards for measuring service quality in electronic environments. The interview guide for bank managers focused on eliciting in-depth insights into digital banking adoption trends, implementation challenges, operational efficiency, cost-related considerations, and customer demographic patterns.

Internal consistency reliability was assessed using Cronbach's alpha coefficient, with all values exceeding the acceptable threshold of 0.7.
Where:
n = (CI*SD)/P) ^2
n- minimum sample size
SD- standard deviation
CI- confidence interval or confidence level
P- precision/margin of error

These reliability analyses were performed using SPSS software. Data collection was carried out through multiple channels to maximize participation. Physical questionnaires were distributed at selected bank branches, while digital dissemination occurred via email and social media platforms, including WhatsApp, Facebook, and LinkedIn. All participants were briefed on the purpose of the research, with clear emphasis on voluntary participation and data confidentiality. Managerial interviews were conducted both face-to-face and virtually, depending on respondent availability and preference.

The study adhered strictly to ethical guidelines prescribed by Botho University and Duale Hochschule Baden Wurttemberg Heidenheim University. Informed consent was obtained from all participants after providing full disclosure about the academic purpose of the research and the procedures for handling data. Anonymity and confidentiality were upheld throughout, with assurances that the data would be used solely for scholarly purposes. This methodological framework enabled a rigorous and ethically sound investigation into digital banking adoption, while accommodating the contextual realities of both developed and developing financial markets.

6 Data Analysis

6.1 Quantitative Data Analysis and Interpretation

This study sought to systematically evaluate both the adoption rates and usability levels of digital banking platforms across customer segments in Germany and Botswana. The investigation assessed the extent to which these platforms have been embraced by users and their practical effectiveness in meeting customer needs, while identifying key factors influencing uptake and ongoing usage patterns. To achieve this, the research employed an integrated analytical framework combining established service quality models with technology acceptance theory. The analysis was structured using the E-S-QUAL and E-RecS-QUAL models as the primary frameworks for assessing digital banking service quality. The E-S-QUAL model evaluated four core

dimensions, which are efficiency, fulfilment, system availability and privacy. In contrast, the E-RecS-QUAL model focused on service recovery by examining responsiveness, compensation and contact mechanisms. Both models were selected for their robust psychometric properties, having demonstrated validity and reliability through extensive empirical testing.

These service quality frameworks were systematically combined with relevant components of the Technology Acceptance Model to provide a comprehensive understanding of customer perceptions and digital banking behaviours. Research instruments were carefully adapted to incorporate all model dimensions while maintaining alignment with study objectives, enabling detailed cross-segmental evaluation of both service quality and platform adoption drivers. Consistent with the study's theoretical propositions, the analysis hypothesized significant positive relationships between each service quality dimension and perceived e-service quality. This multidimensional approach illuminated how technical system attributes and interpersonal service factors collectively shape customer experiences, offering both diagnostic and predictive insights into digital banking platform adoption and usability patterns across the two national contexts.

Table 1 SPSS Results from the ES-QUAL model.

Dimensions	***E-S-QUAL Average per Dimension***	
	Germany	Botswana
Efficiency	1.489919355	1.73399
Fulfilment	2.101382488	4.57684
System availability	2.545967742	3.49638
Privacy	2.455913978	4.27824

Results in Table 1 shows that the dimension of E-S-QUAL with the highest performance rating for Germany is system availability which implies that among all the dimensions, the banks performed best in ensuring that the system reliability of their sites and the ability of banks to maintain so that it works properly. As for Botswana, Fulfilment scored high, meaning that among all the dimensions, the banks in Botswana performed best in ensuring the extent to which their digital platforms promise about delivery and fulfilment of product availability is to the customers expectation.

Table 2 SPSS Results from the E-RecS-QUAL model

Dimensions	E-RecS-QUAL Average per Dimension	
	Germany	Botswana
Responsiveness	1.779354839	0.80
Compensation	1.564157706	1.58
Contact	2.683154122	0.67

Results in Table 2 shows that the dimension with the highest performance average rating in Botswana is compensation, which implies that respondents felt fairly satisfied with regards to the service provided by the banks in terms of provision of feedback and relevant assistance for problems and queries relating to the banks products. Whereas in Germany, contact scored high, implying that respondents feel safe with regards to the service provided by the banks in terms of protection of their confidential information.

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6.2 Thematic Findings from Qualitative Data

6.2.1 Status of Digital Banking Platform Use

Interview data revealed Germany's consistently mature digital banking ecosystem. Participants described omnichannel adoption as normative, with customers fluidly switching between platforms based on transaction needs. One German bank manager noted, "Even our senior customers now use basic mobile banking functions, whereas a couple of years ago they insisted on

branch visits." This contrasted sharply with Botswana's emerging adoption patterns, where mobile money services functioned alongside rather than replacing traditional banking. For instance, one bank manager in Botswana stated that, “There is a greater reliance on mobile financial services such as MyZaka, ewallet and Orange Money as complementary tools, rather than substitutes for conventional banking”.

6.2.2 Infrastructure as a Key Factor

German interviewees highlighted the country’s robust digital infrastructure as a major enabler of widespread digital banking adoption. The bank managers noted that “connectivity issues rarely prevent customers in remote areas from accessing services,” underlining consistent access across regions. In contrast, Botswana’s qualitative data repeatedly identified poor internet access as a barrier, particularly in rural areas. While older German customers were described as reluctant but capable digital banking users, their Botswana counterparts were often characterized as being excluded by infrastructure gaps.

6.2.3 Operational Contexts

The thematic analysis underscored Germany’s operational advantages in digital banking implementation. German interviewees reported seamless integration of digital workflows, contrasting with Botswana’s participants, who noted that productivity gains were often limited by patchy system maturity. Resistance to digital transitions among staff appeared less pronounced in Germany, with one interviewee attributing this to established retraining programs, which were reported as largely absent in the Botswana context. In Botswana, time constraints further limited staff capacity to engage in in-depth training on digital platforms, whereas in Germany, structured online training programs were more widely available and institutionalized.

6.2.4 Digital Banking Regulations and Client Protection

Respondents in Botswana recognised several regulatory measures in place to protect digital banking clients. These included the Cybercrime Act, the Protection of Personal Information Act, Anti-Money Laundering protocols, One-Time Pin mechanisms, and Know Your Customer procedures. The Bank of Botswana was identified as the main regulatory authority, with the Virtual Currency Act of 2022 also playing a role. While the current legal framework was seen as largely effective, participants noted a need for further policy development to align with emerging technological and financial innovations. In contrast, Germany's mature regulatory framework emerged as a critical adoption driver, providing the legal stability necessary for widespread digital banking acceptance.

7 Conclusion

The study results pointed to a plethora of findings that spoke to the status of digital banking in Germany. The study respondents highlighted their preference for Omni channel banking, emphasizing the role of the nature of transactions on this preference. This, as Haralayya (2021: 18) noted, allows bank customers to utilize different types of technological devices such as smartphones, laptops and tablets while also having the option to use traditional face-to face banking. Moreover, the role of COVID-19 in “accelerating” the increased use of technology, more so among older generations was noted in the study, which Köttl et al (2021: 126) attributed to the increased necessity for the older generation to access their funds, do transactions they would normally carry out at banks as well as have access to family and friends through video calling and other social media platforms. On the other hand, the youth have been found to be more tech-savvy and more comfortable with digital banking, hence at an advantage, whilst the older populations, more so those in rural areas, tended to prefer face-to-face banking. As indicated by Köttl et al (2021: 126), COVID 19 brought to light the need for provision of

free internet access in public spaces as well as in socio-economically disadvantaged populations such as the elderly, those in rural areas as well as those in residential care homes.

A marked increase in productivity was highlighted from the study results, attributed to a shifted focus from manual oriented tasks to more digitized tasks, which saved time, which is buttressed by Alkhouli (2017: 1) and Nguyen (2020: 395) who emphasise the less paperwork and lower handling costs brought about using digital banking platforms. However, it was noted in the study the resistance to change by employees, who had a fear of job losses, more so given the closing of bank branches because of reduced operational costs like printing, manual processing of payments, salary costs. Furthermore, the increased costs brought about the use of technological devices and regulatory changes necessitate the closing of bank branches to take advantage of the increased technology use by customers.

Using E-S-QUAL and E-RecS-QUAL an assessment of the digital banking platform service quality as well as the recovery service quality was assessed. The results indicated that the respondents placed the highest importance on privacy of their digital transactions and the least importance to efficiency of the digital platforms. Their perception of service quality of digital banking platforms was, however, highest for system availability, which, given the COVID 19 pandemic, was a necessity. In addition, the respondents indicated the speed with which they can carry out transactions across the various digital banking platforms, but noted the failure of banks, on average, in providing simple to use sites requiring minimum information and structured properly. In addition, the study results highlighted that the respondents placed high importance to the availability of online customer service and perceived their banking experience to be safe with regards to protection of their confidential information and the availability of online customer service facilities.

The study results pointed to age being a strong determining factor of technology use and by extension, the differences in use of online and face-to-face interactions and their role in customer satisfaction and acceptance. Younger people were noted to be more comfortable with using digital banking whilst the older population tended to prefer face-to-face interactions. This, as highlighted by the interviews with bank managers, led to varying degrees of customer retention, with the youth being more prone to changing banks and trying them out, more so with respect to digital banking platforms and their efficiency, convenience, and efficiency. Older populations, however, tended to be more loyal and hence, retained, but concerns over inability and difficulty to use digital banking were noted in the interviews with managers. Omarini (2017: 24) argued that because of possible disintermediation risk, banks need to ensure a transition to technology while ensuring they retain their content and trust levels of customers. Furthermore, R Paudel, RR Chhetri, LK Shrestha (2025) highlight the role that different needs of customers play on satisfaction and speak to the role of waiting times on perception of experience, such that digital banking platforms require good service quality as waiting time is a significant predictor of satisfaction.

The characteristics of German bank clientele was closely related to the preferences of the clientele to online or face-to-face interactions, with age as a strong determining factor younger people are more comfortable with using digital banking whilst the older population tended to prefer face-to-face interactions. Moreover, income and education were noted to not be good indicators of technology use by the interviewed bank

managers, who highlighted that often, older clients tended to be wealthier, and preferred face to face interactions. Furthermore, Diener and Špaček (2021: 129) indicated that in many instances, German banking clients are better equipped in terms of skills to utilize digital banking platform, and in addition, trust the security systems of their banks owing to their reputation and services.

These, as noted from the interviews with managers, spoke to different aspects of digital banking including privacy and security of client information and funds. There was also a noted need for regular policy and law reviews, monitoring, and evaluation.

8 Recommendations and areas for further study

Banks are encouraged to build customer confidence in the responsiveness of digital banking services. Public awareness initiatives, including press campaigns and media advertisements, should be implemented to assure customers of the guarantees provided when transactions are not successfully processed. In addition, customers raised concerns regarding compensation mechanisms, and thus, banks should adopt technologies that promote convenient banking and effectively manage service cancellations to prevent financial losses to customers. Furthermore, regulatory processes should be fast-tracked to ensure customer protection at all levels, particularly given that digital banking platforms are relatively new and present emerging challenges.

Based on the gaps identified in the literature and the issues emerging from the interviews, several directions for further research are recommended. Future studies should consider increasing the sample size to enable more robust quantitative analysis using the E-S-QUAL and E-RecS-QUAL frameworks, particularly for advanced statistical techniques such as factor analysis, correlation analysis and regression analysis.

While the present study provides valuable insights, the quantitative component involved 31 participants and the qualitative interviews included eight participants, which may limit the extent to which the findings can be generalised. Consequently, future research should continue to employ a mixed-methods approach while expanding both quantitative and qualitative samples. Such an approach would strengthen the reliability of the results, enhance analytical depth and improve the generalisability of findings across broader populations.

References

1. Adhabi, E. and Anozie, C.B. (2017) ‘Literature review for the type of interview in qualitative research’, *International Journal of Education*, 9(3), pp. 86–97.
2. Agbeve, V., Adukpo, T.K., Mensah, N., Appiah, D. and Atisu, J.C. (2025) ‘Comparative analysis of digital banking and financial inclusion in the United States: Opportunities, challenges and policy implications’, *Asian Journal of Economics, Business and Accounting*, 25(3), pp. 452–.
3. Alkhouli, S. (2017) ‘The effect of banks’ website service quality and e-satisfaction on e-loyalty: An empirical study on Swedish banks’, *International Journal of Business and Management*, 13(1), p. 1.
4. Alsanousi, H. (2021) ‘Understanding customer behaviours towards the use of electronic banking given customer characteristics and financial portfolios’, *International Journal of Business and Social Science*, 12(1), pp. 5–.

5. Bansal, N. (2020) 'The impact of training programmes of digital banking services on employees of the unorganised sector and their acceptability in India', *International Journal of Electronic Customer Relationship Management*, 12(3), pp. 246–272.
6. Barjaktarovic Rakocevic, S., Rakic, N. and Rakocevic, R. (2025) 'An interplay between digital banking services, perceived risks, customers' expectations and customers' satisfaction', *Risks*, 13(3), 39. https://doi.org/10.3390/risks13030039
7. Bömer, M. and Maxin, H. (2018) 'Why fintechs cooperate with banks—evidence from Germany', *Zeitschrift für die gesamte Versicherungswissenschaft*, 107(4), pp. 359–386.
8. Chiguvi, D., Tadu, R., Mugwati, M. and Jagadeesh, D. (2025) 'Enhancing customer experience and its impact on customer loyalty: Aligning banking sector practices with Sustainable Development Goals (SDGs)', *Journal of Lifestyle and SDGs Review*, 5(2), e03771.
9. Cochran, W.G. (1977) *Sampling Techniques*. New York: John Wiley & Sons.
10. Coolican, H. (2014) *Research Methods and Statistics in Psychology*. 6th edn. New York: Psychology Press.
11. Cuesta, C., Ruesta, M., Tuesta, D. and Urbiola, P. (2015) *The Digital Transformation of the Banking Industry*. BBVA Research. Available at: https://www.bbvaresearch.com/wp-content/uploads/2015/08/EN_Observatorio_Banca_Digital_vf3.pdf
12. Dağaşaner, S. and Karaatmaca, A.G. (2025) 'The role of online banking service clues in enhancing individual and corporate customers' satisfaction: The mediating role of customer experience as a corporate social responsibility', *Sustainability*, 17(8), p. 3457.
13. Diener, F. and Špaček, M. (2021) 'Digital transformation in banking: A managerial perspective on barriers to change', *Sustainability*, 13(4), p. 2032.
14. Dorfleitner, G., Schmitt, M. and Weber, M. (2017) 'The fintech market in Germany', in *FinTech in Germany*. Cham: Springer, pp. 13–46.
15. Gaur, A. and Ondrus, J. (2012) 'The role of banks in the mobile payment ecosystem: A strategic asset perspective', in *Proceedings of the 14th Annual International Conference on Electronic Commerce*, pp. 171–177.
16. Gillespie, A., Glăveanu, V. and de Saint Laurent, C. (2024) *Pragmatism and Methodology: Doing Research That Matters with Mixed Methods*. Cambridge: Cambridge University Press.
17. Haralayya, B. (2021) 'How digital banking has brought innovative products and services to India', *Journal of Advanced Research in Quality Control and Management*, 6(1), pp. 16–18.
18. Klus, M.F., Lohwasser, T.S., Holotiuk, F. and Moormann, J. (2019) 'Strategic alliances between banks and fintechs for digital innovation: Motives to collaborate and types of interaction', *Journal of Entrepreneurial Finance*, 21(1), p. 1.
19. Köttl, H., Tatzer, V.C. and Ayalon, L. (2021) 'COVID-19 and everyday ICT use: The discursive construction of old age in German media', *The Gerontologist*, gnab126.
20. Leedy, P.D. and Ormrod, J.E. (2015) *Practical Research: Planning and Design*. 11th edn. Boston, MA: Pearson.
21. Maxin, H. (2015) *Corporate Venture Capital im Bankensektor: Eine Fallstudie*. Leibniz Universität Hannover, Wirtschaftswissenschaftliche Fakultät.
22. Mbama, C.I. (2018) 'Digital banking services, customer experience and financial performance in UK banks', *International Journal of Bank Marketing*, 36(8), pp. 10–18.
23. Molosiwa, T. (2025) 'The impact of digital transformation on Botswana's banking strategies', *Open Journal of Business and Management*, 13(3), pp. 1519–1551.
24. Mujinga, M. (2020) 'Online banking service quality: A South African ES-QUAL analysis', in *Conference on e-Business, e-Services and e-Society*. Cham: Springer, pp. 228–238.
25. Nguyen, O.T. (2020) 'Factors affecting the intention to use digital banking in Vietnam', *Journal of Asia Finance, Economics and Business*, 8(8), pp. 387–397.
26. Niepmann, F. and Schmidt-Eisenlohr, T. (2017) 'International trade, risk and the role of banks', *Journal of International Economics*, pp. 107–126.

27. Omarini, A. (2017) *The Digital Transformation in Banking and the Role of FinTechs in the New Financial Intermediation Scenario*.
28. Parasuraman, A., Zeithaml, V.A. and Malhotra, A. (2005) 'ES-QUAL: A multiple-item scale for assessing electronic service quality', *Journal of Service Research*, 7(3), pp. 213–233.
29. Paudel, R., Chhetri, R.R., Shrestha, L.K. and Paudel, R. (2025) 'Evaluating e-banking service quality and customer satisfaction: A systematic review in the context of Nepal', *Journal Arbitrase: Economy, Management and Accounting*, 3(2), pp. 44–60.
30. Polit, D.F. and Hungler, B.P. (2013) *Nursing Research: Principles and Methods*. 8th edn. Philadelphia: Lippincott.
31. Saunders, M., Lewis, P. and Thornhill, A. (2019) *Research Methods for Business Students*. 5th edn. London: Pearson Education.
32. Sejoe, S. and Mokhurutshe, K. (2020) *Econsult Economic Review: Quarter 4*. Gaborone: Econsult.
33. Shehadeh, M. and Hussainey, K. (2025) 'Guest editorial: Embracing a new era—digital transformation in accounting and finance', *Journal of Financial Reporting and Accounting*, 23(2), pp. 437–443.
34. Shavkatovna, A.S. and Farruxovna, M.M. (2025) 'The concept and evolution of digital banking services', *Modern American Journal of Business, Economics, and Entrepreneurship*, 1(2), pp. 48–52.
35. William, C. (2016) 'Research methods', *Journal of Business and Economic Research*, 5(3), pp. 1–8