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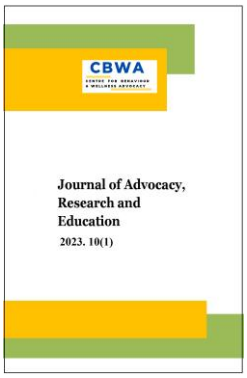

Adoption of Electronic Banking in Ghana: Does Convenience, Management Support, Security and Human Capital Matter?

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Abstract

This study looks into the elements that influence the adoption of electronic banking. The study used a cross-sectional descriptive research design to sample 347 customers who patronise the services of Commercial banks in Ghana. According to the results, users of electronic banking services believe that convenience, management support, and security are three variables that influence the adoption of electronic banking (e-banking) and, hence, the growth of their customer base. Furthermore, the study found that Human Capital, as represented by customers' level of education, impacted whether or not customers of Ghanaian banks adopted e-banking. Customers with greater levels of education appeared to be more prepared to adopt e-banking. The study suggests that marketing initiatives should focus on guiding consumers on how to use e-banking services. Additionally, banks should consider the level of education of their target market share while developing their promotional strategies. Again, commercial banks in Ghana should work to ensure the safety and security of internet transactions. This will significantly boost confidence and encourage the use of e-banking services.

Keywords: Convenience, Electronic Banking, Ghana, Human Capital, Management Support, Security.

1. Introduction

The rapid rate of change in the world of banking and finance has been necessitated by the application of technology (Boohene, Maxwell, 2017). This has brought about some fundamental variances in the banking industry. Presently, banks in advanced countries rely on information and communications technology (ICT). Conversely, this can potentially destroy the traditional ways of bank service delivery (Eshun et al., 2016). Aside from electronic banking's (e-banking) potential impact on service delivery (Guru et al., 2001; Chen et al., 2017), it also has a cost-saving effect on bank operations resulting in revenue growth and thus serving as a risk-mitigating measure for the banking industry. Despite the benefits of e-banking, a bank's decision to take advantage of this will depend on its self-assessment of its profitability and long-term effect on operations (DeYoung, 2012).

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Over the years, ICT has reportedly been extensively used in banking to advance the banking agenda (Hamed et al., 2013; Abor, 2004). To this end, most financial institutions in developing nations adopt these changing trends to stay relevant and keep their clients by providing them with more convenient and effective services. Electronic financial transfers, direct bill payments, automated teller machines (ATMs), mobile and internet (online) banking, and credit cards are just a few of the e-banking platforms and technologies that banks are adopting (Gikandi, Bloor, 2010).

E-banking has played a significant role in Ghana's competitive banking environment for over ten years (Agyei et al., 2022). According to the assessment of Addae-Korankye (2014) on the possible impact of e-banking on banking operations, he stated that banks in Ghana are embracing e-banking in some capacity to acquire a competitive edge in providing services. These e-banking services, as per Hyde (2015), may involve using the following ATMs: the internet, wire transfers, telephone banking, electronic financial transfers, and debit cards, among other things. These services appear to have led to a progressive departure from the conventional business model, defined by physical decentralization and branches positioned throughout populated areas to provide consumers with practical access to conduct business. However, physical banking offers advantages, such as trust associated with in-person service provision going on to show customers that the bank has significant human resources to protect their assets (Agyei et al., 2022).

It is interesting to note that despite the benefits associated with e-banking usage, it is also documented that customers who patronize e-banking services in Ghana experience obstacles such as high e-banking service charges, breakdown of website, low limit on funds transfer and slowness of transactions (Ameme, 2015). These difficulties pressure banks to create and use improved distribution channels to attract more clients and enhance customer loyalty. Thus, applying ICT in the business sector is one of the strategies utilized to address these expanding needs changes. For this purpose, many banks in Ghana continue to make significant investments to introduce and make effective online business services to enhance client happiness and loyalty, ultimately favourably influencing income and profits (Fozia, 2013). This suggests that e-banking has completely changed how banks operate, giving both banks and their clients enormous potential. Due to this, banks now need to switch to electronic banking to survive (Ackah, Makafui, 2014).

Based on these deliberations, this paper investigates the adoption of e-banking among customers in Ghana by introducing a non-traditional variable, human capital and accustomed variables like convenience, management support, and security to ascertain their relevance to the phenomenon. Goldin (2014) defines human capital as a term social scientists use to refer to individual characteristics deemed helpful in production. It includes knowledge, skills, know-how, good health, and education. The human capital an individual gains via education is valuable and responsive to adapt to change (Gibbons, Waldman, 2004) and contributes to an economy's collective good (Boohene et al., 2023). For this reason, this study examines, among other things, the bearing of the level of education and, for that matter, human capital on the adoption of e-banking in Ghana.

Theoretical Review

Researchers and practitioners have widely utilized the Technology Acceptance Model (TAM) to forecast and understand user acceptance of information technology (Marangunić, Granić, 2015). Focusing on cost-effectiveness and theoretical justification, TAM seeks to explain what factors into user behaviour across a wide range of end-user computing systems and user groups. The Theory of Reasoned Action (TRA) asserts that an individual's attitude drives social behaviour and helps anticipate the use of information systems (Luarn, Lin, 2005). The primary system determinants of TAM are two theoretical conceptions: perceived usefulness (PU) and perceived ease of use (PEOU).

The phrase "the degree to which a person feels that utilizing a specific system would boost his or her job performance" is used to describe perceived usefulness, while the phrase "the degree to which a person believes that using a particular system would be free of effort" is used to describe perceived usability (Davis, 1989). Additionally, several outside factors may have an impact on PU and PEOU. The system's features, learner characteristics, and environment could all be considered external variables (Wojciechowski, Cellary, 2013).

Empirical Review

Over the years, several factors have been associated with internet banking acceptability. For example, age and gender served as moderators in a study by Aboobucker and Bao (2018). They focused on barriers to internet banking acceptability in Sri Lanka. According to them, website

usability and perceived trust are potential structuring variables, although security, privacy, and perceived risk are unimportant. Similarly, Zhang et al. (2018) investigated how cultural norms in China affected the acceptance of internet banking. In high power distance countries, people are said to pay more attention to "social influence and trust" than "performance expectancy, effort expectancy, and perceived risk." In contrast, in highly individualistic countries, performance expectancy and trust are given consent in addition to taking advantage of the cultural differences.

Mobile technology and the internet have significantly simplified banking tasks in recent years by reducing the need to visit a bank. The majority of customers have arguably refused to accept mobile banking even though it is believed to be the most advanced method of banking with the benefits of quick transactions and cost-effectiveness because of security and privacy concerns, perceived trust issues, perceived risk issues, resistance, etc. (Asante-Gyabaah et al., 2015; Angenu et al., 2015). In the research on the untapped potential of electronic banking in mobile banking by Afshan and Sharif (2016), they listed trust as one of the most vital establishments. Further, Eshun et al. (2016) assert that Ghanaian banks have embraced e-banking to compete in the banking sector because of the many advantages of doing so. Additionally, clients are embracing e-banking solutions due to the advantages they have when utilizing them. Customers also believed that e-banking made doing business simpler, more convenient, and time-saving.

Again, Alalwan et al. (2016) revealed that the growth of the internet, wireless technologies, and mobile apps have inspired banks to devise innovative strategies for outwitting rivals. So far, it has become obvious that internet banking has exceeded several expectations and comfortably replaced traditional banking systems (Hamed et al., 2013). Inevitably, the fortunes of internet banking abound, and they are complementing other forms of traditional banking. Fozia (2013) posits that in a comparative study of consumer perceptions of e-banking services, customers' different age groups and occupation groups have varying perceptions of the services. The findings of Fozia also proposed that demographic characteristics, particularly occupation and age, considerably impact internet banking behaviour. On the other hand, Hamed et al. (2013) suggested that the internet is no longer a platform reserved for the privileged few but a place where the average person can access anything. Internet banking is now regarded as one of the greatest successes the world has ever known. As a result, modern bankers have made significant investments in various internet banking channels that are paying off greatly.

2. Method

Design

A cross-sectional descriptive research design was used to conveniently sample 347 customers from various Ghanaian commercial banks for the study.

Data Collection Tool

A structured questionnaire was used to collect data from respondents for the study. The first part of the questionnaire included questions about the socio-demographic characteristics of respondents, while the second part focused on the main research questions for the study.

Data analysis

Completed questionnaires were checked for completeness, coded, and entered directly into Predictive Analytical Software version 21. Data cleaning was conducted by computing the frequencies of all variables and checking for missing values and responses that were out of range. The analysis included both descriptive and inferential statistics, which generated statistical tables.

Ethical consideration

The purpose of the study and the right of every participant to withdraw at any stage of the research process without any associated penalties were explained to participants, after which consent was obtained from participants who voluntarily offered to participate. Finally, to ensure privacy and confidentiality, questionnaires were administered to the participants on an individual basis, and the data was only accessible to the authors.

Participants

The respondents in the study were those who patronize Ghanaian commercial banks. Three hundred forty-seven respondents made up the sample for this study. These served as an accurate portrayal of the clients under investigation, whose viewpoints and attitudes influenced the embrace of electronic banking in Ghana. Based on the age distribution of the participants, the majority (195, or 56.2 %) were between the ages of 20 and 29 years, and only (41, or 11.8 %) were above 40 years.

Additionally, 111 (32.0 %) of the respondents were between 20 and 29 years old, while 34 (11.1 %) were between 40 and 49 years old. Also, (248, or 71.5 %) were males, while the remaining (99, or 28.5 %) were females. Also, the majority (118, or 34 %) of the participants were self-employed and, by extension, had mainly a diploma as their educational qualification (136, or 39.20 %). The study captured respondents who patronize the services of commercial banks in Ghana from the Greater Accra Region (35 %), the Eastern Region (40 %), the Ashanti Region (15 %), and the Bono Region (10 %).

Table 1. Demographic characteristics of respondents

Variable		**Frequency**	**Percentage (%)**
Gender	Male	248	71.5%
	Female	99	28.5%
Age Group	20-29 years	195	56.2%
	30-39 years	111	32.0%
	Above 40 years	41	11.8%
Highest level of qualification	O'Level	83	23.92%
	Diploma	136	39.20%
	Degree	105	30.25%
	Masters	23	6.63%
Sector of Occupation	Public Sector	47	13.5%
	Private Sector	51	14.7%
	unemployed	32	9.2%
	Self-employed	118	34.0%
	Student	99	28.5%
Total		347	100%

3. Results

The probability of obtaining the results shown in Table 2 if the null hypothesis were true is represented by the p-value (asymp. sig.). So, if one rejects the null hypothesis, there is a 0% chance they were mistaken. In other words, the normalcy assumption is disproved because the p-value is less than 0.05. As a result, the responses to whether or not "adopting E-banking will be beneficial" do not follow a normal distribution (See Table 2).

Table 2. One-Sample Kolmogorov-Smirnov Test (N = 347)

Normal Parameters[a,b]	Mean	3.75
	Std. Deviation	1.287
Most Extreme Differences	Absolute	.329
	Positive	.166
	Negative	-.329
Test Statistic		.329
Asymp. Sig. (2-tailed)		.000[c]
a. Test distribution is Normal.		
b. Calculated from data.		

Having looked at the e-banking adoption rate, this research shifted attention to customer perception of adopting e-banking services. The study also revealed that 10.4 % of the respondents strongly disagreed (SD) to the benefit of the decision to adopt e-banking services, and 10.7 % of the respondents disagreed (D) to adopt e-banking services. Also, 3.7 % of the respondents had a neutral opinion. On the other hand, 43.8 % of the respondents agreed (A) to adopt e-banking

services, and 31.4 % strongly agreed (SA) to the benefits of adopting e-banking services. This percentage analysis suggests that, to a large extent, respondents perceive that e-banking adoption is beneficial. Furthermore, Cronbach's alpha coefficient measured the customers' responses on 17 items used for the correlation analyses at 0.790. This reflects the high internal consistency reliability for the survey, which exceeds the minimum acceptable level of (0.6).

Table 3. Principal Component Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.	6.049	35.579	35.579	6.049	35.579	35.579
2.	2.162	12.720	48.299	2.162	12.720	48.299
3.	1.500	8.825	57.125	1.500	8.825	57.125
4.	1.482	8.719	65.844			
5.	1.293	7.608	73.452			
6.	1.101	6.474	79.925			
7.	.824	4.847	84.772			
8.	.666	3.919	88.692			
9.	.634	3.728	92.419			
10.	.496	2.915	95.334			
11.	.381	2.238	97.573			
12.	.269	1.581	99.154			
13.	.065	.382	99.536			
14.	.035	.208	99.744			
15.	.029	.170	99.915			
16.	.009	.051	99.966			
17.	.006	.034	100.000			

Table 3 demonstrates the total variance of factors used for the study. It displays the factors and their related eigenvalues. It also shows the percentage of variance explained and their corresponding cumulative percentages. Three (3) factors were extracted as they have eigenvalues greater than 1. The three factors are the convenience-related factor, Management Support-related factor and Security-related factor. The three (3) factors explain (57.125 %) of the total variations.

Table 4. Rotated Component Matrixes

Variables	**Components**		
	1	2	3
Factor 1 - Convenience-Related Factor			
1. E-banking was adopted to reduce long queues at the bank.	0.59		
2. Improved service time affected the adoption of e-banking.	0.38		
3. Convenience affected the adoption of e-banking.	0.42		
4. Flexibility of e-banking influenced me to adopt it.	0.43		
5. E-banking interactions do not need a lot of brain effort.	0.38		
Factor 2 - Management Support-Related Factor			
6. Increase in customer base was a factor in adopting e-banking.		0.37	
7. Efficient and effective customer support was a factor in adopting e-banking.		0.52	
8. Support from Top management influenced e-banking adoption.		0.47	

9. E-banking depends on providing distinctive, integrated, and personalized financial services.		0.40	
10. The bank charges low fees for using e-banking services.		0.78	
11. Availability of e-banking services contributed to the adoption of e-banking.		0.61	
Factor 3 - Security-Related Factor			
12. Security of customers' account details affects e-banking services.			0.33
13. Customer privacy policy of banks leads to the adoption of e-banking.			0.45
14. I feel using the internet/ATM banking is a good idea.			0.98
15. The security features of the e-banking platform are not weak.			0.66
16. I trust in the benefits that the decision to adopt e-banking brings. 17. E-banking is reliable.			0.77 0.37

Notes. Total variance explained=57%; Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

Convenience, management support, security, and E-banking adoption

The rotated component matrix in Table 4 presents a matrix of loadings or correlations among variables and factors. As per this study, pure loadings have loadings of 0.3 on one factor. The factors deduced were convenience-related factor, management support-related factors, and security-related factor. Regarding convenience-related factor issues such as avoidance of joining long traditional and ATM queues at the bank, improved service time, flexibility in the usage of e-banking services, and the fact that e-banking needs less brain effort were noteworthy. It is interesting to note here that although traditional queues tend to be more prevalent compared to ATM queues, the latter can also cause some inconvenience, especially when the other forms of e-banking are incapacitated. On the other hand, Management-related factors had elements such as increased customer base, efficient and effective customer support, support from top management, low charges for e-banking services, and availability of e-banking services. Aside from the other forms of support provided by management, an increased customer base implies that management is eventually forced to integrate e-banking with traditional banking services to reduce the number of customers who troupe to the bank occasionally. Further, on security-related factor, features such as assurance of security of customer details, protection of customer privacy, trust placed in security features by customers on e-banking platforms and reliability of e-banking were also noteworthy.

Human capital in the form of Level of Education and E-banking adoption

Figure 1 shows that diploma and degree holders mainly accept the decision to adopt e-banking services, with 38.82% and 28.24% of respondents agreeing and strongly agreeing, respectively. This accounts for about 66.86% of the total responses on the subject. In comparison, the percentage of those who disagree and strongly disagree with e-banking adoption for both undergraduate and master's degree holders is 0.29%. In contrast, 19.31% of respondents with O'level certificates who have lower education than those with diplomas, undergraduate degrees, and master's degrees either disagreed or strongly disagreed with the decision to adopt e-banking. This shows that those with superior levels of education were more likely to adopt e-banking than those with lower levels of education. Thus, the relationship between the level of education (Human Capital) and the use of e-banking is positive. That is, the higher the educational level of customers, the more likely customers will use e-banking services. This claim is consistent with the findings of a study by Hambrick and Masons from 1984, which showed that an employee's prior education reflected their knowledge bases and cognitive capabilities and that those with higher levels of education appeared to be better prepared to accept new ideas and adapt to changes (Asante Darkwah et al., 2023; Boohene, Maxwell, 2020; Boohene, Maxwell, 2017; Boohene, Maxwell, 2017; Boeker, 1997; Kimberly, Evanisko, 1981). The current study's findings are consistent with those made by Ainin et al. (2007), who discovered that demographic factors like age, gender, personal

income, and educational background impact whether people use e-banking services. A study by José and Inmaculada (2019) found a similar association between educational level and e-banking usage. José and Inmaculada assert that higher levels of education, income, self-employment, increased use of ATMs, increased frequency of banking transactions.

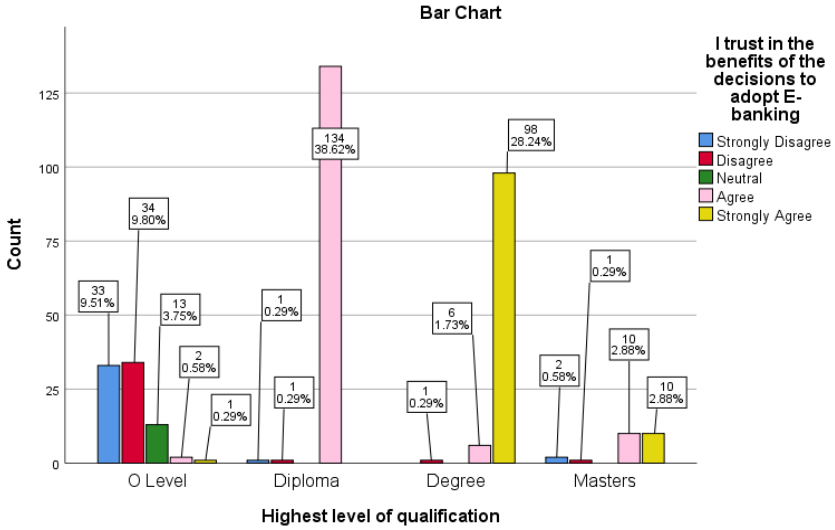

Fig.1. Trust in the Benefits of E-banking Adoption

The extent of the relationship between education level and e-banking adoption is seen in Table 5. As can be observed, the effect size for the correlation between adoption of electronic banking and educational attainment is 0.750, indicating a larger influence of the independent variable, i.e., educational attainment, on the dependent variable, adoption of electronic banking. Therefore, we conclude that a higher level of education has a larger impact on the adoption of e-banking. Additionally, the R Square of the Human Capital component (level of education) for adopting e-banking shows that the prediction ability is (0.530). This suggests a broad justification for changes relating to the two variables.

Table 5. Measures of Association

Association	R	R Squared	Eta	Eta Squared
E-banking adoption * Educational Qualification	.728	.530	.866	.750

4. Discussion

The advent of digital technology has revolutionized the banking industry in Ghana, providing individuals with convenient and accessible alternatives to traditional brick-and-mortar banking. Accessibility is one of the primary conveniences of e-banking in Ghana, as traditional banking is bound by physical branches and limited operating hours, which can be restrictive for customers. In contrast, e-banking allows individuals to access their accounts and perform transactions anytime and anywhere, as long as they have an internet connection. This convenience can cater for the busy lifestyles of most Ghanaians and provide them with the flexibility to manage their finances at their convenience.

Further, as seen from the study, one crucial factor that influences the successful implementation and adoption of e-banking is the support and commitment of bank management. When bank executives and top-level management embrace e-banking as a strategic priority, for example, by advocating for relatively low bank charges contrary to findings of previous studies, it can set a positive tone for the entire organization and, by extension, its cherished customers. Their commitment provides a clear direction and communicates the significance of e-banking to all stakeholders, including employees, customers, and shareholders.

Also, security is a fundamental factor in adopting e-banking in Ghana. The assurance that customers' sensitive data will be protected from unauthorized access, fraud, and identity theft is paramount. Most Banks and financial institutions have tried to implement robust security measures, such as encryption, secure authentication protocols, and firewalls, to ensure the confidentiality and integrity of customer data. By prioritizing security, these financial institutions in Ghana instil trust and confidence in customers, encouraging them to adopt e-banking services.

Furthermore, it is also imperative to note that while technological advancements play a significant role, the influence of human capital, specifically the level of knowledge or educational level and skills possessed by bank customers, can drive the adoption of e-banking services. Bank customers with the digital literacy and skills to navigate online platforms, use mobile applications, and conduct transactions electronically are more likely to embrace e-banking services. These individuals can effectively utilize the features and functionalities of e-banking platforms, ensuring a smooth and seamless user experience. Further, Bank customers aware of the latest technological advancements and demonstrate openness to adopting new digital solutions are more likely to explore and adopt e-banking services. Again, individuals who recognize the convenience, efficiency, and time-saving benefits of e-banking are more inclined to transition from traditional banking methods.

5. Conclusion

To improve the client experience with financial transactions, banks in Ghana set up e-banking platforms. In doing so, these banks also lower operating expenses as e-banking lessens customers' reliance on conventional banking channels. As a result, e-banking offers both banks and clients excellent potential for service delivery. Yet, regardless of this, key elements influence the adoption of electronic banking in Ghana. As per this survey, elements like convenience, management support, security systems, and human capital reflected by the level of education are some of them. Thus, bank customers generally concur that these key factors influence how widely e-banking is used in Ghana.

6. Recommendations

It is advised that marketing initiatives focus on instructing clients on how to use e-banking services, particularly internet banking. Additionally, the target market for online banking needs to be those with a respectable level of education before progressively expanding to capture the rural niche through rigorous training and education. Furthermore, Ghana's commercial banks should work to improve the safety and security of online transactions as it can significantly boost confidence and encourage the use of e-banking services.

7. Declarations

Ethics approval and consent to participate

Ethics approval was from selected commercial banks in Ghana, notably Standard Chartered Bank, Ghana and with informed consent from all participants.

Consent for publication

Not applicable.

Availability of data and materials

Please contact the author for data and materials associated with this study.

Conflict of interest statement

The authors of the manuscript declare that there is no conflict of interest, and all reference materials were duly acknowledged.

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References

Aboobucker, Bao, 2018 – *Aboobucker, I., Bao, Y.* (2018). What obstruct customer acceptance of internet banking? Security and privacy, risk, trust and website usability and the role of moderators. *The Journal of High Technology Management Research*. 29(1): 109-123.

Abor, 2008 – *Abor, J.* (2008). Determinants of the capital structure of Ghanaian firms. AERC.

Ackah, Makafui, 2014 – *Ackah, D., Makafui, R.A* (2014). Adoption of Electronic Banking in Ghana Banking System. Munich, GRIN Verlag. [Electronic resource]. URL: https://www.grin.com/document/284721

Addae-Korankye, 2014 – *Addae-Korankye, I.* (2014). The Impact of E-Banking on Customer Service and Profitability of Banks in Ghana. *Global Journal of Commerce & Management Perspective*. 3(1): 61-65.

Afshan, Sharif, 2016 – *Afshan, S., Sharif, A.* (2016). Acceptance of mobile banking framework in Pakistan. *Telematics and Informatics*. 33(2): 370-387.

Agyei et al., 2022 – *Agyei, J., Sun, S., Penney, E.K., Abrokwah, E., Boadi, E.K., Fiifi, D.D.* (2022). Internet banking services user adoption in Ghana: An empirical study. *Journal of African Business*. 23(3): 599-616.

Alalwan et al., 2017 – *Alalwan, A.A., Dwivedi, Y. K., Rana, N.P.* (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*. 37(3): 99-110.

Ainin et al., 2007 – *Ainin, S., Noor Ismawati, J., Mohezar, S.* (2007). 'An overview of mobile banking adoption among the urban community'. *International Journal of Mobile Communications*. 5(2): 157-168.

Ajzen, 1991 – *Ajzen, I.* (1991). The theory of planned behavior. Organizational behavior and human decision processes. 50(2): 179-211.

Asante-Gyabaah et al., 2015 – *Asante-Gyabaah, G., Oppong, C.N., Idun-Baidoo, N.* (2015). Electronic Banking in Ghana: A Case of GCB Bank Ltd. *European Journal of Business and Management*. 7(12): 239-256.

Asante Darkwah et al., 2015 – *Darkwah, J.A., Boohene, D., Coffie, C.P.K., Addae-Nketiah, A., Maxwell, A., Sarfo, J.O.* (2023). Human development, corruption control, and foreign direct investment revisited: the case of sub-Saharan Africa. Journal *of Enterprise and Development*. 5(2): 137-153.

Asemanyiwaa, 2012 – *Asemanyiwaa, M.C.A.* (2012). Electronic Banking Adoption in Ghana: A case study of Guaranty Trust Bank (Ghana) Limited. Thesis, KNUST Press.

Angenu et al., 2015 – *Angenu, B.B., Quansah, F., Okoe, A.F.* (2015) Determinants of Online Banking Adoption among Ghanaian University Students. *Journal of Service Science and Management*. 8: 183-190.

Hyde, 2015 – *Hyde, A.M.* (2015). E-Banking: Review of literature. *Prestige e-journal of Management and Research*. 2(2): 19-28.

Ameme, 2015 – *Ameme, B.K.* (2015). Internet banking in Ghana: Challenges and Benefits *International Journal of Emerging Science and Engineering*. 3(12): 40-47.

Guru et al., 2001 – *Guru, B.K., Vaithilingam, S., Ismail, N., Prasad, R.* (2001). Electronic Banking in Malaysia: A Note on Evolution of Services and Consumer Reactions. *Electronic Banking*. Vieweg+Teubner Verlag. DOI: https://doi.org/10.1007/978-3-322-86627-1_15

Chen et al., 2017 – *Chen, Z., Li, Y., Wu, Y., Luo, J.* (2017). The transition from traditional banking to mobile internet finance: an organizational innovation perspective-a comparative study of Citibank and ICBC. *Financial Innovation*. 3(1): 1-16.

Boohene et al., 2023 – *Boohene, D., Maxwell, A., Asante-Darkwah, J., Addae-Nketiah, A.* (2023). Human Capital Development Practices In India's IT Industry. *Journal of Modern Management & Entrepreneurship*. 13(2):1-6.

Boohene, Amita, 2020 – *Boohene, D., Amita, M.* (2020). Alternative learning and assessment module for educational institutions subsequent COVID-19 pandemic. *All Nations University Journal of Applied Thought*. 8(1): 127-135.

Boohene, Maxwell, 2017 – *Boohene, D. Maxwell, A.* (2017). HCD practices and its impact on sustainable growth: A study on selected banks in Ghana. *Saudi Journal of Business and Management Studies*. 2(7): 711-715.

Boohene, Maxwell, 2017 – *Boohene, D., Maxwell, A.* (2017). Perception of employee's on HCD Practices in the Indian Information Technology industry. *International Journal of Development Research*. 7(7): 13876-13878.

Boohene, Maxwell, 2017 – *Boohene, D., Maxwell, A.* (2017). Technological applications and it's functionality on HCD Practices. *International Research Journal of Human Resources and Social Sciences*. 4(7): 437-441.

Davis, 1989 – *Davis, F.D.* (1989) Perceived usefulness, perceived ease of use and user acceptance of information technology, *MIS Quarterly*. Pp. 319-340.

De Young, 2001 – De Young, V. (2001). Brand Popularity, Country Image and Market Share; an Empirical Study. *Journal of International Business Studies*. 26(2): 361-386.

Eshun et al., 2016 – *Eshun, R., Adu, S., Wiafe, N.A.*(2016). Adoption of electronic banking. Evidence from Ghana. *European Journal of Business and Management*. 8(8):94-105.

Fozia, 2013– *Fozia* (2013). A Comparative Study of Customer Perception toward e-banking services provided by selected private & public sector bank in India. *International Journal of Scientific and Research Publications*. 3(9):1-5.

Gibbons,Waldman, 2004 – *Gibbons, R., Waldman, M.* (2004). "Task-Specific Human Capital". *American Economic Review*. 94(2): 203-207.

Gikandi, Bloor, 2010 – *Gikandi, J.W., Bloor, C.* (2010). Adoption and effectiveness of electronic banking in Kenya. *Electronic Commerce Research and Applications*. 9: 277-282.

Goldin, 2014 – *Goldin, C.* (2014). A pollution theory of discrimination: male and female differences in occupations and earnings. In Human capital in history: The American record University of Chicago Press. Pp. 313-348.

Hamed et al., 2013 – *Hamed, T., Shamsul, S., Neda, J.* (2013). A review paper on e-service; technology concepts. Elsevier Ltd.

Hambrick, Mason, 1984 – *Hambrick, D.C., Mason, P.A.* (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*. 9: 193-206.

Jose, Inmaculada, 2019 – *José R.Z.J., Inmaculada, A.D.* (2019). Educational level and internet banking. *Journal of Behavioral and Experimental Finance*. 22: 31-40.

Luarn, Lin, 2005 – *Luarn, P., Lin, H.H.* (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behaviour*. 21(6): 873-891.

Marangunić, Granić, 2015 – *Marangunić, N., Granić, A.* (2015). Technology acceptance model: A literature review from 1986 to 2013. *Universal Access in the Information Society*. 14: 81-95.

Wojciechowski, Cellary, 2013 – *Wojciechowski, R., Cellary, W.* (2013). Evaluation of Learners Attitude toward Learning in ARIES Augmented Reality Environments. *Computer & Education*. 68: 570-585.

Zhang et al., 2018 – *Zhang, Y., Weng, Q., Zhu, N.* (2018). The relationships between electronic banking adoption and its antecedents: A meta-analytic study of the role of national culture. *International Journal of Information Management*. 40: 76-87.