

Research Article

Determinants of Customers' Digital Banking Utilization a Pathway to Cash-Lite Economy: Evidence from Addis Ababa

Abebe Tilahun Kassaye* , Tigist Belachew, Kiros Haftu

Department of Public Financial Management and Accounting, Ethiopian Civil Service University, Addis Ababa, Ethiopia

Abstract

Ethiopia's digital economy is still developing, with only a limited number of private sector companies offering online services and a few government-sponsored initiatives aimed at digitalization. This study explores the factors influencing customers' utilization of digital banking as a pathway to a cash-lite economy, focusing on evidence from Addis Ababa. The research is framed within the Unified Theory of Acceptance and Use of Technology (UTAUT2) and employs a quantitative approach using a descriptive and explanatory research design. We collected primary data from customers of commercial banks in Addis Ababa. Accordingly, 428 questionnaires were distributed to customers of commercial banks in Addis Ababa using the convenience sampling method, and 405 responses were properly filled out with a response rate of 94.62%. The overall reliability, measured by Cronbach's alpha, was found to be 0.913. The findings indicate that performance expectancy, facilitating conditions, hedonic motivation, and habit significantly and positively influence digital banking utilization, supporting the hypothesis. In contrast, effort expectancy, social influence, and price value were found to be insignificant factors. The study concludes that increased digital banking utilization can facilitate progress toward a cash-lite economy. To encourage customers to adopt digital banking services, commercial banks should develop strategies to raise awareness and create incentive mechanisms. Additionally, the national bank should establish a legal framework to monitor and evaluate digital banking transactions within commercial banks, promoting the transition to a cash-lite economy.

Keywords

Determinants, UTAUT2, Digital Banking, Cash-lite Economy, Commercial Banks, Addis Ababa

1. Introduction

Digital banking is revolutionizing daily life in Africa, replacing paper transactions with online [1]. It enhances accountability, tracks government spending, reduces corruption, offers immediate payments, and provides alternative financing [2].

Over 90% of Ethiopia's retail transactions, including low-

and high-value items, are predominantly conducted in cash, with cash purchase orders and checks serving as substitutes for supplier payments [3]. Ethiopia's 2025 digital transformation strategy focuses on five priorities: digital ID, digital payments, e-governance, e-commerce, and cyber security [4]. The National Financial Inclusion Strategy and National Dig-

*Corresponding author: abebetile@gmail.com (Abebe Tilahun Kassaye)

Received: 19 April 2025; **Accepted:** 7 May 2025; **Published:** 16 June 2025



ital Payments Strategy aim to transform the payment ecosystem and support a cash-lite economy.

Despite Ethiopia's long history in the banking industry, it is underdeveloped in terms of technological usage, which is why researchers have been motivated to conduct a study on the topic. Additionally, this study aims to fill the literature gap on digital banking usage in Addis Ababa and provide insights for the banking industry to develop strategies and product offerings.

2. Literature Review

2.1. Theory of Acceptance and Use of Technology (UTAUT2) Model

The UTAUT2 model, developed by [5], is a framework used in information systems and technology research to predict and understand user acceptance and usage behavior of new technologies, incorporating additional factors.

- 1) *Performance Expectancy (PE)*: measures the rate at which technology benefits consumers, and digital banking meets customer expectations, influencing their intention to adopt technology [5, 6].
- 2) *Effort Expectancy (EE)*: measures the ease of using technology, impacting customer effort and time, and digital banking ease increases intention and intensity of usage [5].
- 3) *Social Influence (SI)*: refers to external pressures from family, friends, and acquaintances that influence an individual's perception and behavior, especially in the context of technological innovations [7].
- 4) *Facilitating Conditions (FC)*: measure individuals' belief in adequate facilitation for digital banking usage, particularly in the context of generation Z's excessive technology use, including networks, the internet, and compatible devices [5, 6].
- 5) *Hedonic Motivation (HM)*: refers to the enjoyment or joy derived from using a technology without any addi-

tional benefits. It assumes that arousal inherently makes people excited and willing to use new technologies, making them joyful, positive, and helpful [5].

- 6) *Price value (PV)*: is the ratio of technology costs to benefits, influencing digital banking behavior through innovations, promotions, and service fees [5].
- 7) *Habit (HB)*: refers to daily technology usage, with digitization and mobile devices influencing consumers' online interactions and digital banking usage, increasing their intention to use it [5].

2.2. Digital Banking Utilization

E-banking allows users to access bank accounts remotely, transfer money, and make payments, providing wholesale banking services and big-value electronic payments through electronic channels, in addition to retail banking services [8, 15].

Trends of Digital Banking Utilization in Ethiopia

Digital banking in Ethiopia has shown progress from 2019 to 2023, aiming to make financial services more accessible and affordable, promoting a cash-lite economy. The following Table 1 shows the trends of digital banking utilization in Ethiopia. The data is accessed from the National Bank of Ethiopia (NBE).

2.3. Cash-lite Economy

The global digital payments market is growing rapidly due to internet usage, digital commerce adoption, and technological advancements [9]. The cashless society refers to the dematerialization of money [10]. The global digital society has led to a rapid shift towards a cashless economy, with two-thirds of adults using digital payments globally [11]. This shift, particularly in developing nations, has impacted the global economy, with the escalating accessibility of cashless transactions potentially positively impacting economic activity in the long run [12-14].

Table 1. The number of Transactions and Value in Billion Birr (2019 – 2023)¹.

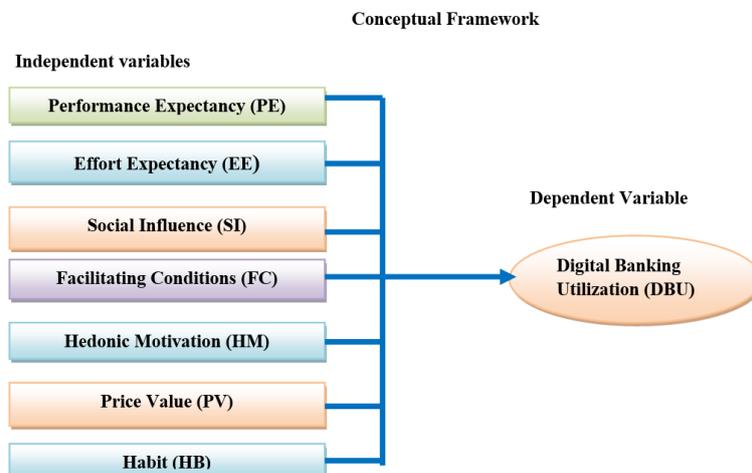
Fiscal Year	ATM		POS		Mobile Banking		Internet Banking	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Jun-19	99,529,312	87.4	2,259,754	5.3	4,697,907	29.7	256,135	15.0
Jun-20	153,191,706	142.1	1,358,651	4.8	11,623,265	68.4	525,284	22.5
Jun-21	225,603,984	236.1	2,951,802	7.4	39,560,999	326.2	2,411,331	26.6
Jun-22	171,068,129	197.5	2,339,255	62.2	88,012,896	1,163.6	1,094,038	129.6
Jun-22	356,384,957	478.3	6,601,796	40.8	474,917,286	3,442.6	5,804,292	358.1

Source: NBE, 2024

¹ One dollar equal to 56.8562 Birr as of April 01, 2024

2.4. Conceptual Framework

Thus, this study aims to measure the level to which the unified theory of acceptance and use of technology 2 (UTAUT2) can affect the use of digital banking in Addis Ababa. Therefore, this study developed a conceptual framework reviewed from the empirical literature depicted on Figure 1 as follows:



Source: Venkatesh et al. (2012)

Figure 1. Conceptual Framework.

3. Methodology

3.1. Research Approaches and Design

The researchers used a quantitative research approach with a descriptive and explanatory study design to address the objectives of the study because the objective of this study is to examine the factors that influence the use of digital banking in Addis Ababa, Ethiopia, using five-point Likert scale questionnaires.

3.2. Data Collection Methods

Researchers collected primary data through five-point Likert scale questionnaires that range from strongly disagree to strongly agree, developed and tested on seven constructs of UTAUT2, to elicit information from potential and actual users of digital banking in Addis Ababa. Empirical data was used to substantiate the results of the findings.

3.3. Population and Sampling Method

Except for those banks that do not have a branch in Addis Ababa, the Development Bank of Ethiopia, and Goh Betoeh Bank, all customers of Ethiopian commercial banks (actual and potential users) in Addis Ababa were considered the target population for this study.

As there is no sample frame and the size of the population is

unknown, the researchers employed the [16] formula as follows:

$$n = (Z)^2(pq)/(e)^2 = (1.96)^2(0.50.5)/(0.05)^2 = 385 \text{ Customers}$$

According to the formula, 385 samples were determined, and 10% of the sample size for non-response questionnaires would be held for compensation. Therefore, the final sample size, considering a 10% non-response rate, was $385/1-0.1 = 385/0.9 = 428$ questionnaires distributed to potential and actual bank customers in Addis Ababa using the convenience sampling method.

3.4. Model Specification and Hypothesis

The model used to make analysis the researchers employed multiple regression models with Pearson’s correlation techniques in addition to descriptive analysis.

Multiple regression models described as follow:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

Where:

β_0 = Constant

β_1, \dots, β_n = Coefficient of the independent variables

X_1, \dots, X_n = Independent variables included in the study

ϵ = refers to an Error terms involved in the study variables

Y = dependent Variable (Intention to use Digital Banking Service Channels)

- X₁ = Performance Expectancy (PE)
- X₂ = Effort Expectancy (EE)
- X₃ = Social Influence (SI)
- X₄ = Facilitating Conditions (FC)
- X₅ = Hedonic Motivation (HM)
- X₆ = Price Value (PV)
- X₇=Habit

Table 2. Summary of Variables, Expected Relationship and Descriptions

Variables	Expected Sign (+/-)	Notations	Description	References
Dependent Variable				
Y	NA	UDS	Usage of Digital Banking Service	[17, 18]
Independent Variables				
X1	+	PE	Performance Expectancy	[19, 5]
X2	+	EE	Effort Expectancy	[20]
X3	+	SI	Social Influence	[21]
X4	+	FC	Facilitating Conditions	[19, 5]
X5	+	HM	Hedonic Motivation	[22, 5]
X6	+	PV	Price Value	[5, 23]
X7	+	HB	Habit	[24, 22]

The above Table 2 shows the explanations of the independent and dependent variables with its sources of references.

The hypotheses are described as follows:

H₁: Performance Expectancy has a negative and significant influence on the usage of digital banking service channels in Ethiopian commercial banks.

H₂: Effort Expectancy has a positive and significant influence on the use of digital banking service channels in Ethiopian commercial banks.

H₃: Social Influence has a positive and significant influence on the usage of digital banking service channels in Ethiopian commercial banks.

H₄: Facilitating Conditions has a positive and significant influence on usage of digital banking service channels in Ethiopian commercial banks.

H₅: Hedonic Motivation has a positive and significant influence on the use of digital banking service channels in Ethiopian commercial banks.

H₆: Price Value has a positive and significant influence on the usage of digital banking service channels in Ethiopian commercial banks.

H₇: Habit has a positive and significant influence on usage of digital banking service channels in Ethiopian commercial banks.

3.5. Reliability and Validity

These are the construct reliability results of the factors in-

fluencing digital banking utilization towards cash-lite economy.

Table 3. Reliability Test for Constructs.

Constructs	Cronbach's Alpha	№ of Items
Performance Expectancy (PE)	0.887	5
Effort Expectancy (EE)	0.883	5
Social Influence (SI)	0.843	5
Facilitating Conditions (FC)	0.844	5
Hedonic Motivation (HM)	0.867	5
Price Value (PV)	0.768	5
Habit (HB)	0.812	5
Digital Banking Utilization (DBU)	0.851	5

Source: Survey April, 2024

According to [25] states that Cronbach's alpha values are categorized into four groups based on the range of values: high (between 0.70 and 0.90), moderate (between 0.50 and 0.70), low (below 0.50), and excellent (above 0.90). A value of more than 0.7 is regarded as appropriate. The constructs displayed in the above Table 3 have a Cronbach's alpha value

ranging from 0.768 to 0.887, exceeding the acceptable threshold of 0.70.

The researchers checked the face validity of the questionnaire through a pilot test distributed to experts in the discipline and handed over the questionnaire to the experts in the area before printing and distributing the final questionnaires to respondents to check the content validity. Construct validity is the degree to which a measurement tool accurately captures the intended theoretical notion, using theoretical presumptions to prove its intended operation [26]. To test the convergent validity of the study, the researchers used correlation analysis and significance values. The Pearson correlation level of significance for all questionnaires is less than 5%, and the validity result of this study is attached in the annex part of this paper.

3.6. Data Analysis Methods

After fieldwork, the questionnaires will be edited and coded for the purposes of transcribing the findings into the computer. Coded data was processed using the Statistical Package for Social Sciences (SPSS Version 29). Quantitative data analysis involved the generation of descriptive statistics, namely mean, standard deviation, frequencies, and percentages, which would be displayed in tabular and charts, and the results of multiple regressions and correlation analysis output would be presented in tabular form, and the results were inferred.

3.7. Ethical Consideration

Researchers collected primary data through questionnaires, maintaining confidentiality, and informing respondents about

the study's objectives and benefits. Verbal consent was obtained before data collection to ensure participant withdrawal at any time. The study adheres to ethical principles such as respect for persons, non-maleficence, beneficence, informed consent, confidentiality, honesty, and avoiding plagiarism, with all references following the APA style.

4. Analysis and Interpretation

The researchers distributed 428 questionnaires through an enumerator to digital banking users in Addis Ababa in April, 2024. Accordingly, the enumerator collected all the questionnaires from the respondents. The researchers organized and coded the collected data; while it was coded, 23 responses were not correctly filled out and discarded from analysis, and 405 questionnaires were properly filled out and made ready for analysis. This revealed a 405/428 (94.62%) response rate, which is considered an excellent response rate.

4.1. Descriptive Analysis

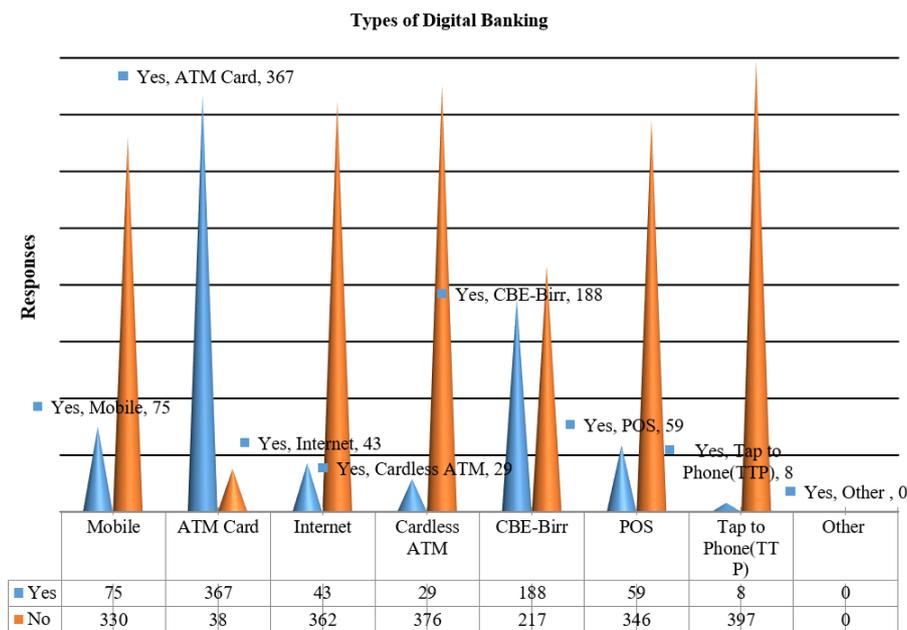
As shown in Figure 2 below, mobile banking, ATM-Card, Internet banking, Cardless ATM, CBE-Birr, point of sale (POS), and tap-to-phone (TPP) were the types of digital banking channels available in Ethiopian commercial banks in Addis Ababa. From the table 4, 90.61%, 46.41%, and 18.51% of the respondents were using ATM, CBE-Birr, and mobile banking, respectively, among the types of digital banking channels. This implies that customers of commercial banks utilize different types of digital banking channels than those using passbook or branch banking services.

Table 4. Types of Digital Banking Utilization.

Statistics	Mobile	ATM Card	Internet	Cardless ATM	CBE-Birr	POS	TTP
Frequency	75	367	43	29	188	59	8
Percentage	18.51	90.61	10.61	7.16	46.41	14.56	2
Rank of Usage	3 rd	1 st	5 th	6 th	2 nd	4 th	7 th

Source: Survey April, 2024

As shown in table 4 above ATM, CBE-Birr and Mobile banking ranked as 1st, 2nd and 3rd utilize digital banking channels in Addis Ababa. A.



Source: Survey April, 2024

Figure 2. Types of Digital Banking.

Table 5. Factors Influencing Digital Banking Utilization towards Cash-lite Economy.

Factors	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
PE	405	1.20	5.00	3.8864	.77622	-.802	.121	.609	.242
EE	405	1.60	5.00	3.8632	.72532	-.500	.121	.146	.242
SI	405	1.00	5.00	3.5590	.74793	-.520	.121	.565	.242
FC	405	1.60	5.00	3.7541	.71557	-.550	.121	.273	.242
HM	405	1.00	5.00	3.6543	.74089	-.298	.121	.274	.242
PV	405	1.40	5.00	3.5180	.69738	-.171	.121	-.139	.242
HB	405	1.40	5.00	3.4672	.73984	-.200	.121	-.007	.242
DBU	405	1.20	5.00	3.8079	.69263	-.421	.121	.203	.242

Source: Survey April, 2024

The average values of each item under the seven different constructs used in this study are used to characterize the data collected from the respondents in this section. A five-point Likert scale was used to gather the data. According to [27], high rank is for mean ratings of 4.0 and higher, middle rank is for mean ratings of 4.0 to 3.5, and low rank is for mean ratings of 3.5 and below.

The above Table 5 shows the average scores and standard deviation values of the respondents'. The six construct independent variables that are performance expectations (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), and price value (PV) have a moderate mean value, while habit (HB) has a

least mean score of 3.4672. Last but not least, the respondents gave the dependent variable, the use of digital banking services, a good appraisal with a mean score of 3.80 and a standard deviation of 0.69. The majority of respondents indicated that they agreed with the item. Conversely, all constructs have standard deviations less than 1, which suggests that respondents' answers to survey questions vary less, thereby giving the study's constructions a close evaluation score.

4.2. Inferential Analysis

All the regression assumptions such as linearity, normality,

autocorrelation, homoscedasticity and outliers test were checked and satisfied.

4.2.1. Correlation Analysis

Table 6. Correlations Matrix.

Pearson Correlation	PE	EE	SI	FC	HM	PV	HB	DBU
PE	1							
EE	.687**	1						
SI	.511**	.516**	1					
FC	.632**	.700**	.606**	1				
HM	.626**	.626**	.625**	.716**	1			
PV	.479**	.460**	.583**	.563**	.589**	1		
HB	.412**	.452**	.540**	.547**	.567**	.602**	1	
DBU	.530**	.497**	.528**	.593**	.631**	.544**	.586**	1

** Correlation is significant at the 0.01 level (2-tailed).

HB: Habit, PE: Performance Expectancy, SI: Social Influence, PV: Price Value, EE: Effort Expectancy, HM: Hedonic Motivation, FC: Facilitating Conditions
Survey April, 2024

The relationship between the constructs of this study was determined by Pearson correlation. The above Table 6 shows the results of Pearson correlations between independent variables and dependent digital banking utilization. The correlation matrix shows that all variables were significantly correlated ($p < 0.01$). All the correlation values were positive, indicating positive relationships among all variables. There were seven independent variables that ranged from 0.497 to 0.631, which have been moderately correlated with the dependent variable (digital banking utilization). From Table 5 above, the relationship between performance expectancy (PE),

effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), price value (PV), and habit (HB) and digital banking utilization (DBU) was found to be ($r = 0.530, 0.497, 0.528, 0.593, 0.631, 0.544, 0.586, p < 0.01$), respectively. Accordingly, hedonic motivation ($r = 0.631, p < 0.01$), followed by facilitating conditions ($r = 0.593, p < 0.01$), is more correlated with digital banking utilization. This implies that a change in the independent variables will change the dependent variable (digital banking utilization) positively in a moderate way.

4.2.2. Regression Analysis Results

Table 7. Model Summary^b.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.717 ^a	.514	.505	.48710	2.131

a. Predictors: (Constant), HB, PE, SI, PV, EE, HM, FC

Dependent Variable: DBU

Survey April, 2024

The above Table 7 shows the R square (R^2) indicates the proportion of variance that can be explained in the dependent variable (digital banking utilization) by the linear combination

of the independent variables, which is included in the model. In this study, R^2 was found to be 0.514. It indicates a linear combination of independent variables or predictors that are per-

formance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), price value (PV), and habit (HB) that explain 51.4% of the variance in digital banking utilization, and the remaining 48.6% are explained by extraneous variables, which have not

been included in this regression model which is denoted by Error Term “e”. Additionally, the Durbin-Watson (D-W) test statistic value was 2.131, as shown in the [table 7](#) model summary, which is closer to 2. This suggests that there isn't any autocorrelation and validates the autocorrelation hypothesis.

Table 8. ANOVA^a.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	99.621	7	14.232	59.983	<.001 ^b
	Residual	94.193	397	.237		
	Total	193.815	404			

a. Dependent Variable: DBU: Digital Banking Utilization

b. Predictors: (Constant), HB: Habit, PE: Performance Expectancy, SI: Social Influence, PV: Price Value, EE: Effort Expectancy, HM: Hedonic Motivation, FC: Facilitating Conditions
Survey April, 2024

[Table 8](#) above shows the ANOVA test whether the regression model is acceptable from a statistical perspective, that is, whether the independent variables are significantly better at explaining the dependent variable, digital banking utilization. In testing its significance level, the study was considered significant if the p value was less than or equal to 0.05. The ANOVA gives a highly significant result (F = 59.983, Sig.

<.001), thereby indicating that performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), price value (PV), and habit (HB) under the study can significantly influence digital banking utilization (DBU).

Fining and discussion of factors influencing Digital Banking Utilization.

Table 9. Regression Coefficients^a.

Model	Unstandardized Coefficients		Standardized Coefficients		T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
1	(Constant)	.812	.156		5.200	<.001		
	PE	.126	.047	.142	2.706	.007	.448	2.234
	EE	-.019	.053	-.020	-.358	.721	.402	2.490
	SI	.048	.046	.052	1.044	.297	.495	2.019
	FC	.127	.058	.131	2.212	.028	.346	2.887
	HM	.216	.054	.231	4.002	<.001	.369	2.711
	PV	.095	.049	.096	1.935	.054	.501	1.997
	HB	.233	.045	.249	5.225	<.001	.540	1.852

Dependent Variable: DBU

Predictors: (Constant), HB: Habit, PE: Performance Expectancy, SI: Social Influence, PV: Price Value, EE: Effort Expectancy, HM: Hedonic Motivation, FC: Facilitating Conditions

From the above [table 9](#), the regression model is written as follows:

$$\text{DBU} = 0.812 + 0.126\text{PE} - 0.019\text{EE} + 0.048\text{SI} + 0.127\text{FC} + 0.216\text{HM} + 0.095\text{PV} + 0.233\text{HB}$$

Performance expectancy, facilitating condition, hedonic motivation, and habit are significant at the 0.05 level of significance, so the model is rewritten as follows:

$$\text{DBU} = 0.812 + 0.126\text{PE} + 0.127\text{FC} + 0.216\text{HM} + 0.233\text{HB}$$

Performance Expectancy (PE): The data presented in [Table 9](#) show that, while holding other variables constant, digital banking utilization increases by an average of 12.6% for every one percent increase in performance expectancy. The p-value for this relationship is 0.007, which is less than 0.05 at the 95% confidence level. The usage of digital banking was discovered to be positively and statistically significantly influenced by performance expectancy. This suggests that digital banking is used by Addis Ababa's commercial bank clients, who see it as an easy and practical instrument to complete tasks. Hence, the hypothesis was accepted. The studies of [\[28\]](#). The result of [\[18\]](#) has been contradicted by this finding. This study, however, agrees with [\[29-31\]](#), who discovered that performance expectancy is an important component for customers because it makes their jobs easier.

Effort Expectancy (EE): Based on the results indicated in [Table 9](#), for every increase in effort expectancy, digital banking utilization decreases on average by 1.9%, holding other variables constant with a p-value of 0.721, which was greater than 0.05 at the 95% confidence level. It was found to have a negative and statistically insignificant influence on digital banking utilization. This implies that customers of commercial banks in Addis Ababa believe that the easiness or effortless of technology would not influence them to utilize digital banking. Therefore, the hypothesis was rejected. This finding has been inconsistent with the findings of [\[29-31\]](#) effort expectancy had a positive and statistically significant effect on digital banking utilization. So, this study finding differs from previous studies.

Social Influence (SI): Based on the results indicated in [Table 9](#), for every one percent increase in social influence, digital banking utilization increases on average by 4.8%, holding other variables constant with a p-value of 0.297, which was greater than 0.05 at the 95% confidence level. It was found to have a positive and statistically insignificant influence on digital banking utilization. This implies that customers of commercial banks in Addis Ababa did not value social influence as a driving factor to utilize digital banking. Therefore, the hypothesis was rejected. The results of [\[32, 33\]](#) that discovered that social impact had a positive and substantial effect on adoption factors in the UTAUT model, have been contradicted by this finding. Researchers [\[18, 34\]](#) discovered that using digital banking had been positively influenced by social

influence. The findings of this study, however, are consistent with those of [\[29\]](#), who discovered that social influence had no noticeable impact on the acceptance of e-banking services, and [\[35\]](#), who discovered that social influence had no noticeable effect on a user's intention to use mobile payments.

Facilitating Conditions (FC): Based on the results indicated in [table 9](#), for every one percent increase in facilitating conditions, digital banking utilization increases on average by 12.7%, holding other variables constant with a p-value of 0.028, which was less than 0.05 at the 95% confidence level. It was found to have a positive and statistically significant influence on digital banking utilization. This implies that customers of commercial banks in Addis Ababa utilize digital banking because they believe that technical infrastructure exist to support use of the system. Therefore, the hypothesis was accepted. The results of [\[36\]](#), who verify a non-significant influence of facilitating conditions in the context of Smartphone apps, have been shown to be contradictory with this finding. This study, however, is consistent with the findings of [\[29, 37\]](#) that discovered that the need to use e-banking services was significantly influenced by the facilitating conditions. Additionally, [\[33\]](#) discovered a positive and significant correlation between adoption parameters in the UTAUT model and facilitating conditions.

Hedonic Motivation (HM): The data indicated in [Table 9](#), show that, while holding other variables constant, digital banking utilization increases by an average of 21.6% for every one percent increase in hedonic motivation. The p-value for this relationship is 0.001, which is less than 0.05 at the 95% confidence level. The use of digital banking was discovered to be positively and statistically significantly influenced by hedonic motivation. This implies that customers of commercial banks in Addis Ababa believe that the appealing features and the pleasure derived from using a technology trigger them to use digital banking. Therefore, the hypothesis was accepted. This finding has been consistent with the findings of [\[12, 30\]](#), found that hedonic motivation had a positive and significant effect on digital banking utilization.

Price Value (PV): The data shown in [Table 9](#) show that, while holding other variables constant, digital banking utilization increases by an average of 9.5% for every one percent increase in hedonic motivation. The p-value for this relationship is 0.054, which is greater than 0.05 at the 95% confidence level. The use of digital banking was discovered to be positively and insignificantly influenced by PV. Therefore, the hypothesis was rejected. This finding has been inconsistent with the findings of [\[29\]](#) who found that price value had a positive and significant effect with adoption factors in the UTAUT model. However, this study's results confirm the findings of [\[30\]](#) who found price value had a positive and insignificant effect on digital banking utilization.

Habit (HB): The data presented in [Table 9](#), show that, while holding other variables constant, digital banking utilization increases by an average of 23.3% for every one

percent increase in habit. The p-value for this relationship is 0.001, which is less than 0.05 at the 95% confidence level. The use of digital banking was discovered to be positively and significantly influenced by habit. This implies that customers of commercial banks in Addis Ababa develop routine and automatic behaviors of using digital banking services. Therefore, the hypothesis was accepted. This finding has been supported with the findings of [22, 30, 38, 39] who found habit had a positive and significant effect on digital banking utilization.

To sum up, performance expectancy, facilitating conditions, hedonic motivation, and habit are positively and significantly influencing digital banking utilization; this implies that the banking industry has to give more attention to these factors so as to enhance digital banking utilization such as Mobile banking, ATM Card, Internet banking, Cardless ATM, CBE-Birr, POS, Tap to Phone (TTP) in Ethiopian commercial banks. Conversely, social influence and price value are positively and insignificantly influencing digital banking utiliza-

tion, but effort expectancy has an inverse and insignificant effect on digital banking utilization. This implies that effort expectancy, social influence, and price value have no significant impact on digital banking utilization in Ethiopian commercial banks.

Finding and Discussion on Most Influencing Factors of Digital Banking Utilization

From the correlation analysis results, hedonic motivation is more correlated, followed by facilitating conditions with digital banking utilization. The regression result shows that performance expectancy, facilitating conditions, hedonic motivation, and habit are positively and significantly influencing digital banking utilization. However, habit has more effect, followed by hedonic motivation, on digital banking utilization. This implies that the commercial banks have to give more emphasis to the features that create pleasure and enjoyment to develop habits of using digital banking routinely for all their transactions.

4.2.3. Summary of Hypothesis Test

Table 10. Summary of Hypothesis Testing Decision.

Explanatory variables	Expected (H _i)	Result	Level of Significance	Decision
Performance Expectancy (PE)	Positive	Positive	Significant	Supported
Effort Expectancy (EE)	Positive	Negative	Insignificant	Rejected
Social Influence (SI)	Positive	Positive	Insignificant	Rejected
Facilitating Conditions (FC)	Positive	Positive	Significant	Supported
Hedonic Motivation (HM)	Positive	Positive	Significant	Supported
Price Value (PV)	Positive	Positive	Insignificant	Rejected
Habit (HB)	Positive	Positive	Significant	Supported

Source: Results of Regression Analysis April, 2024

The table above (Table 10) presents the hypothesis testing decisions derived from the regression analysis results. Notably, performance expectancy (PE), facilitating conditions (FC), hedonic motivation (HM), and habit (HB) all demonstrate p-values below 0.05, confirming that these factors significantly and positively influence digital banking utilization.

In contrast, effort expectancy (EE), social influence (SI), and price value (PV) yield p-values above 0.05, leading to the dismissal of these hypotheses. While both social influence (SI) and price value (PV) exhibit positive relationships with digital banking utilization, their effects are not significant. Furthermore, effort expectancy (EE) reveals a negative and non-significant influence.

5. Conclusions

Based on the analysis of the findings, the following conclusions were drawn:

The descriptive and correlation analysis of the study found that all independent variables, such as performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit, influenced digital banking utilization, suggesting it could lead to a cash-lite economy.

The regression analysis found that performance expectancy, facilitating conditions, hedonic motivation, and habit positively influence digital banking utilization, confirming previous research. This robust evidence underscores their vital

role in enhancing user experience and engagement with digital banking platforms. However, social influence and price value had insignificant effects, and effort expectancy had an inverse effect. Highlighting the need for further exploration into how these factors can be optimized to improve user adoption and satisfaction in digital banking.

5.1. Theoretical Contribution

The study examines the UTAUT2 framework model's application in Ethiopian commercial banks. Most studies were conducted using structural equation model analysis (SEM), while this study was conducted using regression methods. There were no comprehensive studies on digital banking; some studies were limited to ATMs and mobile banking. So, this study provides insights into empirical findings and methodological contributions for academicians to further study in the area.

5.2. Practical Contributions

The study identifies key determinants of UTAUT2 influencing digital banking utilization, highlighting habit as a key factor and effort expectancy as the opposite. Commercial banks should focus on enhancing digital banking habits and designing user-friendly digital banking services to promote a cash-lite economy.

Abbreviations

ATM	Automated Teller Machine
EE	Effort Expectancy
FC	Facilitating Conditions
HB	Habit
HM	Hedonic Motivation
PE	Performance Expectancy
POS	Point of Sale
PV	Price Value
SI	Social Influence
TTP	Tap to Phone
UTAUT	Unified Theory of Acceptance and Use of Technology

Author Contributions

Abebe Tilahun Kassaye: Conceptualization, Formal Analysis, Investigation, Methodology, Software, Writing – original draft

Tigist Belachew: Data curation, Supervision, Validation, Visualization, Writing – review & editing

Kiros Haftu: Data curation, Funding acquisition, Project administration, Resources, Visualization

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Bhan, N. (2014, November 5). *Mobile money is driving Africa's cashless future*. Harvard Business Review. <https://hbr.org/2014/09/mobile-money-is-driving-africas-cashless-future>
- [2] Pazarbasioglu, C., Garcia Mora, A., Uttamchandani, M., Natarajan, H., Feyen, E., Saal, M., & The World Bank Group. (2020). *Digital Financial Services*. <https://pubdocs.worldbank.org/en/230281588169110691/Digital-Financial-Services.pdf>
- [3] NBE. (2017). *National Financial Inclusion Strategy*. National Bank of Ethiopia, Addis Ababa, Ethiopia, 1-121. <https://nbe.gov.et/wp-content/uploads/2023/12/National-Financial-Inclusion-Strategy-II-2021-2025.pdf>
- [4] MoPD. (2021). *A ten years Development plan: A Pathway to Prosperity 2021-2030*. Ministry of Planning and Development, Addis Ababa, Ethiopia, 1-86. https://www.ircwash.org/sites/default/files/ten_year_development_plan_a_pathway_to_prosperity.2021-2030_version.pdf
- [5] Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
- [6] Patil, P., Tamilmani, K., Rana, N. P., & Raghavan, V. (2020). Understanding Consumer Adoption of Mobile Payment in India: Extending Meta-UTAUT Model With Personal Innovativeness, Anxiety, Trust, and Grievance Redressal. *International Journal of Information Management*, 54, 102144. <https://doi.org/10.1016/j.ijinfomgt.2020.102144>
- [7] Tarhini, A., El-Masri, M., Ali, M. and Serrano, A. (2016). Extending the UTAUT model to understand the customers' acceptance and use of internet banking in Lebanon: A structural equation modeling approach. *Information Technology & People*, 29(4), 830-849. <https://doi.org/10.1108/ITP-02-2014-0034>
- [8] Awara, N. F., & Anyadighibe, J. A. (2014). Factors Influencing Banks' Implementation and Consumers' Acceptance of E-Banking of Selected Commercial Banks in Calabar, Cross River state, Nigeria. *International Journal of Managerial Studies and Research*, (IJMSR) 2(9), 1–13. <https://www.arcjournals.org/pdfs/ijmsr/v2-i9/1.pdf>
- [9] Boar, C and R Szemere. (2020). Payments Go (Even More) Digital, Commentary on the CPMI Red Book 2019 Statistics. https://www.bis.org/payment_stats_commentaries/index.htm
- [10] Baubeau, P. (2016). Dematerialization and The Cashless Society: A Look Backward, A Look Sideward. In B. Bâtiz-Lazo & L. Efthymiou (Eds.), *The book of payments* (pp. 85–94). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-137-60231-2_9

- [11] Fabris, Nikola (2019): Cashless Society – The Future of Money or a Utopia? *Journal of Central Banking Theory and Practice*, ISSN 2336-9205, De Gruyter Open, Warsaw, 8(1), 53-66. <https://doi.org/10.2478/jcbtp-2019-0003>
- [12] Tee, H., & Ong, H. (2016). Cashless Payment and Economic Growth. *Financial Innovation*. 2 (1), 1-9. <https://doi.org/10.1186/s40854-016-0023-z>
- [13] Kabir, M. A., Saidin, S. Z., & Ahmi, A. (2017). Analysis of Factors that Influence Electronic Payment Adoption. *Journal of Engineering and Applied Sciences*, 12(3), 6560-6568. https://aidiahmi.com/download/publication/2017_JEAS_kabir_saidin_ahmi.pdf
- [14] Gardachew. (2010). Electronic-Banking in Ethiopia- Practices, Opportunities and Challenges. *Journal of Internet Banking and Commerce*, 15 (2). <https://www.icommercecentral.com/open-access/electronicbanking-in-ethiopia-practices-opportunities-and-challenges-1-8.php?aid=38390>
- [15] Wondwossen, T., & Tsegai, G. (2005). E-payment: Challenges and Opportunities in Ethiopia. *Economic commission for Africa, Addis Ababa Ethiopia*. <https://www.ethioconstruction.net/sites/default/files/Law/Files/ePayment%20Study.pdf>
- [16] Cochran, W. G. (1963). Sampling techniques. *New York: John Wiley & Sons*. https://www.maths.usyd.edu.au/u/jchan/STAT3014/sur15_1_sol.pdf
- [17] Mazhar, F., Rizwan, M., Fiaz, U., Ishrat, S., Razzaq, M. S., & Khan, T. N. (2014). An Investigation of Factors Affecting Usage and Adoption of Internet & Mobile Banking In Pakistan. *International Journal of Accounting and Financial Reporting*, 4(2), Pages-478-501. <https://doi.org/10.5296/ijaf.v4i2.6586>
- [18] Anggraeni, R., Hapsari, R., & Muslim, N. A. (2021). Examining Factors Influencing Consumers Intention and Usage of Digital Banking: Evidence from Indonesian Digital Banking Customers. *Asia Pacific Management and Business Application*, 009(03), 193–210. <https://doi.org/10.21776/ub.apmba.2021.009.03.1>
- [19] Baptista, G., & Oliveira, T. (2015). Understanding Mobile Banking: The Unified Theory of Acceptance and Use of Technology Combined with Cultural Moderators. *Computers in Human Behavior*, 50, 418-430. <https://doi.org/10.1016/j.chb.2015.04.024>
- [20] Thomas, H. (2013). Measuring progress toward a Cashless Society. *Mastercard*. <https://sbgsmedia.in/2014/10/27/f4ba9f88300ddd6f525592f4122bf7ed.pdf>
- [21] Patel, K.J. and Patel, H.J. (2018). Adoption of internet banking services in Gujarat: An extension of TAM with perceived security and social influence. *International Journal of Bank Marketing*. 36(1), 147-169. <https://doi.org/10.1108/IJBM-08-2016-0104>
- [22] Raza, S.A., Umer, A. and Shah, N. (2017). New determinants of ease of use and perceived usefulness for mobile banking adoption. *Int. J. Electronic Customer Relationship Management*, 11(1), 44-65. <https://doi.org/10.1504/IJECRM.2017.086751>
- [23] Raza, S. A., Umer, A., & Shah, N. (2017). New determinants of ease of use and perceived usefulness for mobile banking adoption. *International Journal of Electronic Customer Relationship Management*, 11(1), 44. <https://doi.org/10.1504/ijecrm.2017.086751>
- [24] Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile Payment: Understanding the Determinants of Customer Adoption and Intention to Recommend the Technology. *Computers in Human Behavior*, 61, 404-414. <https://doi.org/10.1016/j.chb.2016.03.030>
- [25] Pallant, J. (2020). *SPSS survival manual: A step by Step Guide to Data Analysis Using IBM SPSS*. McGraw-hill education (UK). <https://doi.org/10.4324/9781003117452>
- [26] Hair, J., Black, W., Babin, B., & Anderson, R. (2019). *Multivariate data analysis* (8th ed.). Cengage. <https://www.cengage.uk/c/multivariate-data-analysis-8e-hair-babin-anderson-black/9781473756540/?searchIsbn=9781473756540>
- [27] Amentie C, Negash E, Kumera L (2016) Barriers to Growth of Medium and Small Enterprises in Developing Country: Case Study Ethiopia. *J Entrepren Organiz Manag* 5: 190. <https://doi.org/10.4172/2169-026X.1000190>
- [28] Purwanto, E., & Loisa, J. (2020). The intention and use behavior of the mobile banking system in Indonesia: UTAUT Model. *Technology Reports of Kansai University*, 62(06), 2757–2767. <https://eprints.upj.ac.id/id/eprint/3323/1/22.%20Jurnal%20-%20The%20Intention%20and%20Use%20Behaviour%20of%20the%20Mobile.pdf>
- [29] Chikondi Daka, G., & Phiri, J. (2019). Factors Driving The Adoption of E-Banking Services Based on the UTAUT Model. *International Journal of Business and Management*, 14(6), 43. <https://doi.org/10.5539/ijbm.v14n6p43>
- [30] Nguyen, T. T., Nguyen, H. T., Mai, H. T., & Tran, T. T. M. (2020). Determinants of digital banking services in Vietnam: Applying utaut2 model. *Asian Economic and Financial Review*, 10(6), 680-697. <https://doi.org/10.18488/journal.aefr.2020.106.680.697>
- [31] Al-Saedi, K., Al-Emran, M., Ramayah, T., & Abusham, E. (2020). Developing a general extended UTAUT model for M-payment adoption. *Technology in Society*, 62, 101293. <https://doi.org/10.1016/j.techsoc.2020.101293>
- [32] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward A Unified View. *MIS Quarterly*. 27 (3), 425-478. <https://doi.org/10.2307/30036540>
- [33] Rajendran, A., Shenoy, S. S., Rao, G. P., & Shetty, K. (2017). Understanding the Customer's Attitude Towards Acceptance and Usage of Online Banking Services Using UTAUT Model. *International Journal of Economic Research*, 14(14), 465–478. <https://www.researchgate.net/publication/326346204>

- [34] Anh Tran, N. (2021). Intention To Use Digital Banking Services of Young Retail Customers in Vietnam. *Journal of Asian Finance*, 8(8), 387–0397. <https://doi.org/10.13106/jafeb.2021.vol8.no8.0387>
- [35] Tang, K. L., Aik, N. C., & Choong, W. L. (2021). A modified UTAUT in the context of M-Payment Usage Intention in Malaysia. *Journal of Applied Structural Equation Modeling*, 5(1), 40-59. [https://doi.org/10.47263/JASEM.5\(1\)05](https://doi.org/10.47263/JASEM.5(1)05)
- [36] Okumus, B., Ali, F., Bilgihan, A. and Ozturk, A.B. (2018) Psychological Factors Influencing Customers' Acceptance of Smart-Phone Diet Apps When Ordering Food at Restaurants. *International Journal of Hospitality Management* [Post-print], 72, pp. 67–77. <http://dx.doi.org/10.1016/j.ijhm.2018.01.001>
- [37] Augustrezcky, D., & Damayanti, S. M. (2021). Factors Influencing the Adoption of Digital Banks Among Generation Z in Indonesia: Based on Extended Unified Theory of Acceptance and Use of Technology (UTAUT2). *The 6th International Conference on Management in Emerging Markets (ICMEM 2021)*, August, 11–13 <http://dx.doi.org/10.26418/jebik.v12i2.67212>
- [38] Septiana, I., Salim, M., & Daulay, M. Y. I. (2020). Analysis the Effect of Habit and Perceived Enjoyment Mediated By Behavioral Intention to Adoption on Students Using Mobile Banking Bni. *Managament Insight: Jurnal Ilmiah Manajemen*, 15(1), 78–94. <https://doi.org/10.33369/insight.15.1.78-94>
- [39] Sharif, A., & Raza, S. A. (2017). The Influence of Hedonic Motivation, Self-Efficacy, Trust and Habit on Adoption of Internet Banking: A Case of Developing Country. *International Journal of Electronic Customer Relationship Management*, 11(1), 1- 22. <https://doi.org/10.1504/ijecrm.2017.086750>