



Digital Financial Literacy and E-Commerce Adoption in Egypt: A Structural Equation Modeling Approach

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Abstract

Purpose

This study investigates the role of Digital Financial Literacy (DFL) in shaping consumers' intention to adopt e-commerce in Egypt, an emerging economy experiencing rapid digital transformation. It extends traditional technology adoption models by integrating DFL with perceived economic value, perceived ease of use, and trust.

Design/methodology/approach

A quantitative, cross-sectional survey was conducted among 354 Egyptian consumers with prior experience in online shopping and digital financial tools. Structural Equation Modeling (SEM) using AMOS was employed to test direct and mediating relationships among the constructs.

Findings

Results demonstrate that DFL positively influences perceived economic value, perceived ease of use, and trust, which in turn enhance e-commerce adoption intention. Mediation analysis confirmed that perceived value, ease of use, and trust significantly transmit the effects of DFL on adoption. All hypotheses were supported, underscoring the foundational role of DFL in digital commerce engagement.

Research limitations/implications

The study relies on a non-probability sample from Egypt, which limits generalizability. Future research could adopt longitudinal or cross-cultural designs to validate findings across diverse contexts.

Practical implications

The findings highlight the need for policymakers and platform developers to prioritize digital financial education, design user-friendly interfaces, and build consumer trust through transparent practices to accelerate e-commerce adoption.

Originality/value

This paper is among the first to empirically position DFL as a key antecedent in e-commerce adoption models. It provides theoretical and policy-relevant insights into how financial competence enhances digital inclusion in developing economies.

Keywords: Digital financial literacy, E-commerce adoption, Egypt, Perceived ease of use, Perceived economic value, Trust

1. Introduction

The rapid rise of e-commerce has reshaped global consumer behavior, transforming how people search, evaluate, and purchase products. In emerging economies such as Egypt, digital commerce is increasingly viewed as a driver of entrepreneurship, financial inclusion, and market efficiency. With internet penetration exceeding 72% in 2022 and mobile wallets like Vodafone Cash and InstaPay gaining popularity, Egypt's digital ecosystem is expanding rapidly. By 2025, the e-commerce market was valued at USD 10.2 billion, supported by widespread smartphone use and government investment in digital infrastructure.

Despite these advances, adoption remains uneven. Many Egyptians remain hesitant to shop online due to concerns about trust, usability, and digital security (El Khouly & Fahmy, 2021; Arab Finance Forum, 2023). While factors such as perceived usefulness, ease of use, and trust have been widely examined in technology adoption research (Davis, 1989; Pavlou, 2003), less attention has been given to Digital Financial Literacy (DFL) the ability to use digital financial services safely and effectively. DFL includes competencies such as online payments, navigating mobile banking apps, detecting fraud, and verifying sellers (OECD, 2022).

In contexts like Egypt, where financial habits are shifting from cash-based to digital systems, DFL may act as a crucial enabler or barrier to e-commerce participation. Consumers with low DFL may avoid online shopping even when platforms offer competitive prices and user-friendly interfaces. Conversely, higher DFL levels can strengthen trust, improve perceptions of usability, and help consumers recognize economic value.

This study addresses this gap by empirically testing a structural model that integrates DFL with established constructs from the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT): Perceived Economic Value, Perceived Ease of Use, and Trust. The model evaluates both direct and indirect effects of DFL on intention to adopt e-commerce in Egypt.

The findings offer contributions to both theory and practice. Theoretically, the study positions DFL as a key antecedent in e-commerce adoption models, bridging financial literacy and technology adoption research. Practically, it provides insights for policymakers and platform designers aiming to accelerate digital inclusion by promoting financial education, building trust, and simplifying user interfaces.

1.2 Research Objectives

This study aims to:

1. Assess the direct impact of Digital Financial Literacy on Perceived Economic Value, Perceived Ease of Use, and Trust in e-commerce platforms.
2. Examine how these mediators influence consumers' intention to adopt e-commerce.
3. Test the indirect (mediating) pathways between DFL and adoption intention through trust and perceived value.

1.3 Significance of the Study

This research contributes to the growing literature on digital transformation in developing economies by extending existing adoption models to include digital financial competence. It also provides context-specific insights into Egyptian consumers' behavior, offering policy-relevant findings for stakeholders seeking to accelerate digital inclusion and economic growth through e-commerce.

2. Literature Review

2.1 Theoretical Background

Research on technology adoption draws on several frameworks, most notably the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Theory of Planned Behavior (TPB). Together, these models highlight how attitudes, beliefs, and social factors shape users' intentions toward new systems.

TAM posits that adoption is primarily driven by perceived usefulness and perceived ease of use (Davis, 1989). The latter is particularly relevant for e-commerce, as ease of navigation enhances both trust and acceptance (Gefen et al.,

2003). Although robust, TAM has been criticized for underplaying the significant role of social and cultural influences in shaping technology adoption decisions (Chuttur, 2009).

UTAUT was developed to address such limitations by integrating elements from eight prominent theories, including TAM. It emphasizes four key determinants: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). Usability factors such as effort expectancy parallel TAM's ease of use, while the inclusion of moderators like age and experience makes it especially relevant in demographically diverse societies such as Egypt.

While either TAM or UTAUT could be applied independently, using them in an integrated fashion provides a more comprehensive and robust analytical framework for this study. TAM offers a parsimonious foundation for understanding the core cognitive drivers of adoption—perceived value and usability—which remain central to any user's decision-making process. However, in a collectivist and developing context like Egypt, ignoring external factors would be a significant oversight. UTAUT complements TAM by introducing the critical dimensions of social influence (the impact of social circles and community norms) and facilitating conditions (the availability of infrastructure and resources), which are powerful predictors of behavior in such environments (Al-Gahtani et al., 2007; Dwivedi et al., 2019). By combining the individual-centric cognitive elements of TAM with the socio-contextual factors of UTAUT, this research can simultaneously assess both the user's personal beliefs about e-commerce and the environmental factors that enable or constrain their adoption.

TPB complements these perspectives by including attitudes, norms, and perceived control (Ajzen, 1991). This is valuable in low-trust cultures where consumers weigh risks against social expectations when deciding whether to transact online (Pavlou & Fygenson, 2006). More recent extensions incorporate trust and perceived economic value, both critical to digital commerce. Trust lowers risk perceptions, while perceived value reflects cost savings, convenience, and comparative advantages that strongly shape adoption (Gefen et al., 2003; Zeithaml, 1988; Chiu et al., 2014).

Finally, an emerging body of work emphasizes Digital Financial Literacy (DFL) as a determinant of how consumers evaluate value, usability, and trust (Grohmann et al., 2018; OECD, 2022). This study integrates DFL as a key antecedent within this combined TAM-UTAUT framework, particularly in Egypt where digital inclusion is a national priority.

2.1.1 Digital Financial Literacy (DFL)

DFL extends traditional financial literacy into the digital realm, covering skills such as using mobile wallets, online banking, and recognizing online fraud (OECD, 2022; Lusardi & Mitchell, 2014). It combines technical competence with risk awareness, both essential for safe e-commerce use (Ng et al., 2020).

Studies show that higher DFL fosters trust and independence in digital environments (Medine & Öztürk, 2021; OECD, 2020). In Egypt, where mobile money is expanding but digital exclusion persists, DFL is crucial for enabling safe participation in online markets (ElMassah & Mohieldin, 2020).

This study defines DFL along two dimensions: (1) technical competence in digital transactions, and (2) awareness of online risks. Together, these shape consumers' perception of ease, trust, and economic value in e-commerce.

2.1.2 Perceived Economic Value (PEV)

PEV captures consumers' assessment of financial benefits in using e-commerce, including savings, discounts, and price transparency (Zeithaml, 1988; Kim et al., 2012). It is particularly influential in cost-sensitive markets like Egypt, where users are attracted by promotions and delivery convenience (Arab Barometer, 2022).

Research shows PEV strengthens both adoption intention and trust in platforms (Wang & Wang, 2010; Chiu et al., 2014). DFL may further enhance consumers' ability to recognize value by enabling price comparisons, spotting fraudulent practices, and using digital tools such as coupons or installment options (Lim et al., 2019).

2.1.3 Perceived Ease of Use (PEOU)

PEOU refers to users' perception that a system is simple and requires little effort (Davis, 1989). In e-commerce, this involves intuitive navigation and ease of completing transactions. Strong evidence links PEOU to trust and adoption, especially in developing markets (Gefen & Straub, 2000; Ha & Stoel, 2009). In Egypt, mobile-first access makes usability critical (CAPMAS, 2022). DFL supports PEOU by equipping users to manage payments and digital interfaces more confidently.

2.1.4 Consumer Trust in E-Commerce

Trust is a cornerstone of e-commerce adoption, substituting for face-to-face verification in digital exchanges (Pavlou, 2003). It encompasses beliefs in data security, transaction reliability, and platform integrity (Gefen et al., 2003).

Studies consistently show that trust outweighs even perceived usefulness in predicting adoption (Kim et al., 2008). In Egypt, concerns about fraud, counterfeit goods, and weak consumer recourse heighten the role of trust (Arab Finance Forum, 2023). Trust is shaped by ease of use, perceived value, and DFL, making it central to this study's framework.

2.1.5 E-Commerce Adoption Intention

Behavioral intention reflects consumers' willingness to engage in online purchasing and is a strong predictor of actual adoption (Ajzen, 1991; Venkatesh et al., 2003). In e-commerce, it is influenced by PEOU, PEV, trust, and contextual factors such as culture and risk perceptions (Gefen et al., 2003; Dinev et al., 2015). In Egypt, while mobile penetration and local platforms (e.g., Jumia, Noon) facilitate adoption, barriers such as mistrust and limited DFL hinder participation (El Khouly & Fahmy, 2021).

2.2 Hypothesis Development

Building on the theoretical foundations of the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and recent extensions incorporating trust and financial capability, this study proposes a conceptual model to examine how Digital Financial Literacy (DFL) affects e-commerce adoption intention through key mediators: Perceived Economic Value (PEV), Perceived Ease of Use (PEOU), and Consumer Trust.

2.2.1 Digital Financial Literacy and Perceived Value and Ease of Use

Digital Financial Literacy equips individuals with the skills to securely and efficiently use mobile wallets, online payments, and digital banking tools. Such competence enhances users' ability to evaluate the economic benefits of e-commerce, including access to better deals, cost savings, and price comparison (OECD, 2022; Lim *et al.*, 2019). Therefore, higher levels of DFL are expected to positively influence the perceived economic value of online platforms.

Similarly, individuals with strong DFL are likely to perceive e-commerce platforms as easier to use. They are more confident in navigating digital interfaces, completing transactions, and troubleshooting minor issues, leading to a higher level of perceived ease of use (Gefen *et al.*, 2003; Grohmann *et al.*, 2018). Based on this reasoning, the following hypotheses are proposed:

H1: Digital financial literacy has a positive effect on perceived economic value of e-commerce platforms.

H2: Digital financial literacy has a positive effect on perceived ease of use of e-commerce platforms.

2.2.2 Digital Financial Literacy and Consumer Trust

Users who understand how to protect their personal and financial information online, avoid scams, and verify platform legitimacy are more likely to develop trust in e-commerce environments (Medine & Öztürk, 2021). DFL reduces perceived risk and enhances confidence in the security and reliability of digital platforms, both of which are critical antecedents of consumer trust (Pavlou, 2003). Thus:

H3: Digital financial literacy has a positive effect on consumer trust in e-commerce platforms.

2.2.3 Perceived Economic Value, Ease of Use, and Trust

Perceived economic value plays an indirect role in building trust. When consumers feel they are getting better prices, convenient delivery, or greater utility, their trust in the platform increases (Chiu *et al.*, 2014). Similarly, perceived ease of use enhances trust by reducing friction and cognitive burden during the shopping process (Gefen *et al.*, 2003). Therefore, the model posits:

H4: Perceived economic value has a positive effect on consumer trust in e-commerce platforms.

H5: Perceived ease of use has a positive effect on consumer trust in e-commerce platforms.

2.2.4 Predictors of E-Commerce Adoption Intention

Trust is widely recognized as a key determinant of e-commerce adoption. Consumers who believe that platforms are secure, dependable, and honest are more inclined to make purchases and engage with these services long-term (Kim *et al.*, 2008; Pavlou & Fygenson, 2006). Likewise, both perceived economic value and ease of use enhance adoption by reinforcing the convenience and utility of e-commerce platforms. Based on these arguments:

H6: Trust in e-commerce platforms has a positive effect on consumers' intention to adopt e-commerce.

H7: Perceived economic value has a positive effect on consumers' intention to adopt e-commerce.

H8: Perceived ease of use has a positive effect on consumers' intention to adopt e-commerce.

2.2.5 Mediating Effects of Perceived Value and Trust

In line with recent research suggesting that DFL influences adoption indirectly through other constructs (Grohmann *et al.*, 2018; Lim *et al.*, 2019), this study posits two mediating pathways: (1) through perceived economic value and (2) through trust. These mediators explain how digital financial capabilities translate into behavioral intentions in digital commerce contexts.

H9: The relationship between Digital Financial Literacy and E-commerce Adoption Intention is mediated by perceived economic value.

H10: The relationship between Digital Financial Literacy and E-commerce Adoption Intention is mediated by trust in e-commerce platforms.

H11: The relationship between Digital Financial Literacy and E-commerce Adoption Intention is mediated by Perceived Ease of Use in e-commerce platforms.

2.3 Theoretical Contributions

This study contributes to the theoretical advancement of technology adoption research by introducing Digital Financial Literacy (DFL) as a pivotal construct in the context of e-commerce adoption in a developing country. While existing models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have emphasized perceived usefulness, ease of use, and trust, they have largely overlooked the role of digital financial competence—particularly in environments where users may lack prior exposure to digital finance tools.

By explicitly integrating DFL into the adoption framework, this research addresses a critical gap in current literature and extends the explanatory power of traditional models. It does so in three key ways:

1. **Introducing DFL as a Foundational Antecedent:**The model conceptualizes DFL as a multi-dimensional construct encompassing both technical competence (e.g., using digital wallets) and risk awareness (e.g., recognizing scams), which together influence perceived ease of use, perceived value, and trust. This represents a novel integration not found in standard TAM/UTAUT applications.
2. **Bridging Financial Literacy and E-Commerce Behavior:**Prior studies have examined general financial literacy or digital readiness in isolation. This study uniquely merges the two, proposing that financial behaviors in digital environments (e.g., online payments, mobile banking) shape how consumers interact with and evaluate e-commerce platforms.
3. **Contextualizing Technology Adoption in an Emerging Economy:**By focusing on Egypt, the study offers empirical insights from a region underrepresented in mainstream IS and marketing literature. The inclusion of culturally relevant variables (e.g., trust in local platforms, sensitivity to fraud) further contextualizes the theoretical model, increasing its relevance for emerging-market economies.

Overall, this framework enhances the predictive validity of established models by capturing a more holistic view of the digital consumer—one that accounts not only for system usability but also for digital financial capability and contextual trust. These contributions are expected to inform future e-commerce research and offer actionable guidance for platform developers and policymakers promoting digital inclusion.

3. Research Gap

While existing studies have extensively examined the factors influencing e-commerce adoption—such as perceived ease of use, perceived usefulness, trust, and perceived risk—these models often assume a baseline level of user competence with digital financial tools (Davis, 1989; Venkatesh et al., 2003). Foundational frameworks like the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have been criticized for being overly simplistic and for not fully accounting for the unique structural and environmental constraints present in emerging economies (Shachak et al., 2019; Malatji et al., 2020). This assumption of user readiness is particularly questionable in a market like Egypt, where digital and financial literacy levels vary significantly across the population (El-Haddad, 2023). A substantial portion of the Egyptian population remains unbanked, and significant challenges in digital and financial literacy persist, especially among vulnerable groups and in rural areas (IsDBI, 2023).

A critical limitation in the current literature is the underrepresentation of Digital Financial Literacy (DFL) as an independent and measurable predictor of e-commerce behavior. DFL, which combines financial and digital literacy, is essential for consumers to effectively and safely use digital financial services (Grohmann et al., 2018). While financial and digital literacy have been studied independently, few models explicitly integrate these dimensions to understand consumer engagement in digital commerce (Kumar et al., 2023). Moreover, research on DFL has predominantly been situated within the fields of financial inclusion or fintech, rather than being integrated into technology adoption frameworks like TAM or UTAUT (Arner et al., 2020).

Additionally, a large body of existing e-commerce research is centered on developed economies or generalized global samples, often overlooking the specific cultural, infrastructural, and behavioral dynamics that shape e-commerce in developing nations (Zaied, 2012; Al-Hadi et al., 2021). The unique characteristics of Egypt's digital ecosystem—marked by a rapid increase in internet penetration and mobile payment adoption alongside pervasive low trust in online platforms—remain empirically underexplored (Elsaeed Mounier et al., 2023). This low trust is a significant barrier to e-commerce growth, stemming

from fears of fraud, concerns about product quality, and inadequate after-sales service (APA News, 2024). Despite government initiatives to promote e-commerce, this structural distrust continues to hinder its expansion (NAOS Solutions, 2022).

Therefore, this study aims to fill these gaps by investigating the impact of digital financial literacy on perceived economic value, perceived ease of use, and trust, and how these factors, in turn, influence consumers' e-commerce adoption in Egypt. It will also examine the mediating role of these perceptions in the relationship between digital financial literacy and e-commerce adoption. This research not only seeks to extend the theoretical boundaries of existing adoption models by contextualizing them for an emerging market but also aims to provide actionable insights for practitioners and policymakers working to foster more inclusive digital economies (World Bank, 2020).

4. Research Contribution

This study offers several important contributions to both the academic literature and practical discourse surrounding e-commerce adoption and digital financial readiness in developing economies.

4.1. Theoretical Contribution

This research extends well-established technology adoption frameworks—such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT)—by explicitly integrating Digital Financial Literacy (DFL) as a foundational antecedent of e-commerce adoption intention. While constructs such as perceived ease of use and trust have been central to adoption models, the role of users' financial capabilities in digital environments has remained largely unexplored. By theorizing DFL as a multidimensional construct encompassing both technical skills (e.g., using mobile wallets) and cognitive security awareness (e.g., identifying fraud), this study advances a more comprehensive model of digital consumer behavior.

4.2. Empirical Contribution

This paper provides one of the first empirical examinations of how DFL influences e-commerce adoption through mediating variables such as perceived economic value, perceived ease of use, and consumer trust. Using a structural equation modeling (SEM) approach and a sample of Egyptian consumers, the study

generates evidence-based insights into the pathways through which financial competence translates into behavioral intention. The Egyptian context—characterized by uneven access to digital tools and low institutional trust—offers a rich empirical setting that enhances the global relevance of the findings.

4.3. Contextual and Policy-Relevant Contribution

By focusing on Egypt, a digitally transforming but still trust-sensitive market, the study provides timely insights for policymakers, platform providers, and financial institutions seeking to foster inclusive digital economies. Understanding the enabling role of DFL can inform targeted interventions, such as digital literacy campaigns, financial education programs, and interface design improvements that lower psychological and technical barriers to adoption. These findings also support the broader national agenda of promoting financial inclusion and digital transformation, as outlined in Egypt Vision 2030.

5. Research Methodology

5.1 Research Design

This study examines the impact of Digital Financial Literacy on Consumer E-commerce Adoption with the mediating effect of Perceived Economic value, Perceived Ease of use and Trust in Alexandria, Egypt. This study adopts a quantitative, cross-sectional survey design to investigate the relationship between Digital Financial Literacy (DFL) and e-commerce adoption intention among Egyptian consumers. The model tests both direct and indirect effects of DFL on adoption behavior, mediated by perceived economic value, perceived ease of use, and consumer trust. The Structural Equation Modeling (SEM) approach was chosen to simultaneously assess the measurement model and structural relationships among latent constructs (Hair *et al.*, 2020).

A structured questionnaire was employed as a primary data collection method. To guarantee construct validity, the questionnaire items were modified from validated measures in earlier studies. The questionnaire consisted of five sections measuring the following constructs: Digital Financial Literacy (DFL), Perceived Economic value, Perceived Ease of use, Trust and E-commerce Adoption. A five point Likert scale was used ranging from 1 (strongly disagree) to 5 (strongly agree).

The target sample that represents the target population included all consumers who are engaged in online shopping and have accounts in different payment platforms such as Instapay, Vodafone cash, Fawry,... Convenience sampling was applied because of the study's descriptive methodology and access restrictions. This approach is commonly used in social science research for pilot and descriptive studies, despite the restriction of generalizability (Malhotra *et al.*, 2017). For analysis, a total of 350 valid responses were gathered.

AMOS software was used to do Structural Equation Modeling (SEM) to examine the data. This method allows for the simultaneous evaluation of both measurement and structural models and is suitable for evaluating intricate interactions between observable and latent variables (Hair *et al.*, 2019). Confirmatory Factor Analysis (CFA) was used to evaluate validity and reliability, and path analysis was used to test the proposed correlations. Indexes including Chi-square/df, CFI, TLI, and RMSEA were used to assess model fit. Additionally, SPSS was used for assumption testing, which included descriptive analysis, multicollinearity, and normality.

5.2 Sampling and Data Collection

The target population comprises Egyptian individuals aged 18 years and above who have access to the internet and prior experience with e-commerce platforms (e.g., online purchases or mobile financial transactions). A non-probability purposive sampling method was used to ensure relevance and eligibility.

Data were collected through an online questionnaire, disseminated via email, social media platforms (Facebook, WhatsApp, Telegram), and university networks. This mode of distribution allowed for broad reach and convenience, especially in urban areas where digital adoption is highest. The survey was available in both English and Arabic, enhancing accessibility across educational backgrounds. To ensure an adequate sample size for SEM, a minimum of 200 responses was targeted (Kline, 2016). A final sample of 354 respondents was used for analysis.

5.3 Conceptual Framework

Accordingly to the previous literature review the variables under study can be discussed as follows:

Independent Variable: Digital Financial Literacy

Mediator Variables: Perceived Ease of Use, Perceived Economic Value and Trust.

Dependent Variable: E-commerce Adoption

The aim of this research is to investigate the impact of digital financial literacy, perceived economic value, perceived ease of use, trust and e-commerce adoption. In this direction, the following model has been developed (figure 1).

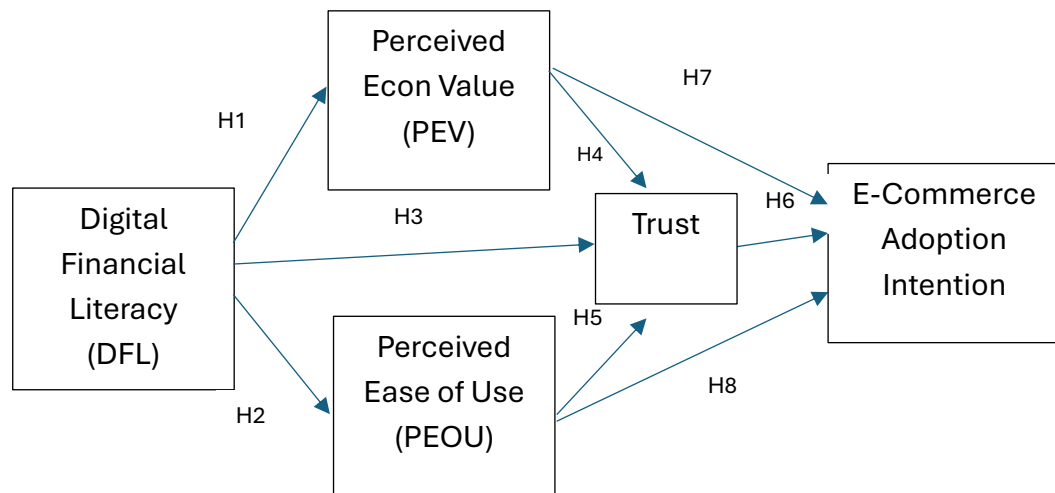


Figure 1: Theoretical Model and Hypothesis Development

Table 1: Measurements of Variables

Variables	Statements	Reference
Introductory Questions	1.How often do you use your smartphone for accessing the internet? 2.I am comfortable using my smartphone for financial or commercial transactions (e.g paying bills, buying online)	
Digital financial Literacy		Potrich <i>et al.</i> (2015), OECD/INFE (2020), and Ali <i>et al.</i> (2021)
Knowledge of tools	1.I know how to use a mobile wallet (e.g., Vodafone Cash, InstaPay). 2.I can make purchases through online platforms securely.	
Confidence in Transactions	1.I feel confident conducting online financial transactions. 2.I know how to protect my financial information online.	
Awareness of Risk	1.I can recognize online scams and fraudulent e-commerce websites. 2.I know how to verify the legitimacy of a digital seller.	
Perceived Economic Value (PEV)	1.E-commerce helps me save money when shopping. 2.Online shopping offers better deals than traditional stores. 3.I find value in the convenience of comparing prices online.	Sweeney & Soutar (2001); Kim <i>et al.</i> (2007)
Perceived Ease of Use	1.It is easy for me to navigate online shopping websites or apps. 2.Learning to use e-commerce platforms is	Davis (1989); Venkatesh & Davis (2000)

Variables	Statements	Reference
	straightforward. 3.Completing a transaction online is simple for me.	
Trust in E-Commerce Platforms	1.I trust that online platforms will protect my personal and financial data. 2.I believe that e-commerce platforms deliver products as promised. 3.I trust the reliability of local e-commerce platforms (e.g., Jumia, Noon). 4. I believe online platforms resolve customer complaints fairly.	McKnight <i>et al.</i> (2002); Pavlou (2003)
E-Commerce Adoption Intention	1.I intend to use e-commerce platforms regularly in the future. 2.I am likely to recommend online shopping to others. 3.I prefer online shopping over traditional retail.	Venkatesh <i>et al.</i> (2003); Gefen <i>et al.</i> (2003)

6. Results and Findings

This study investigates first, the impact of digital financial literacy on perceived economic value, perceived ease of use and trust. Second, the relationship between perceived economic value and perceived ease of use on trust then the effect of perceived economic value, perceived ease of use and trust on consumers e-commerce adoption of online platforms. Lastly, the mediation effect of perceived economic value, perceived ease of use and trust between digital financial literacy and consumers e-commerce adoption of online platforms. Structural equation modeling (SEM) analysis was employed using AMOS version 24 to test the research hypotheses. Firstly, a measurement model was conducted to validate the structure of the research model, and confirmatory factor analysis (CFA) was used to establish the model's fit with the data. The analysis included examining normality and multicollinearity. Moreover, descriptive statistics were investigated using SPSS version 25 to analyze the study variables and respondent demographics.

6.1 Data Testing Using Validity and Reliability

Some significant indicators were examined in order to evaluate the validity of the data: factor loadings and Average Variance Extracted (AVE). Factor loadings have to reach at least 0.4, and the AVE threshold must be greater than 0.5. Cronbach's Alpha, which has a range of 0 to 1, is used to quantify reliability. Values above 0.70 signify acceptable internal consistency (Hair *et al.*, 2019). Sufficient dependability is advocated by a coefficient of 0.7 or above. Verify that all metrics—the Kaiser-Meyer-Olkin (KMO) measure, AVE, Cronbach's Alpha, and factor loadings—fulfill the recognized criteria. Table 2 shows the validity and reliability results.

Both validity and reliability were examined for the purpose of measuring the quality of the data, as shown in Table 2. The data's suitability for factor analysis was validated using the Kaiser-Meyer-Olkin (KMO) measure of sample acceptability, which varied from 0.743 to 0.866 across all constructs. Strong convergent validity between the constructs was confirmed by the AVE (Average Variance Extracted) values, which ranged from 0.62 to 0.77 and exceeded the recommended 0.5 standards. Additionally, Cronbach's Alpha coefficients, which fall between 0.70 and 0.92, exceeded the 0.7 cutoff, indicating adequate construct dependability. Factor loadings, which ranged from 0.7 to 0.9, further confirmed the measurement model's dependability. These results align with the robustness of the data processing and interpretation, confirming that the study's measurement model represented both validity and reliability.

Table 2: Validity and Reliability Test

Construct	Item	Factor Loading	AVE%	Cronbach's Alpha	KMO
Digital Financial Literacy	DFL1	0.758	62.3%	0.701	0.743
Digital Financial Literacy	DFL2	0.867			
Digital Financial Literacy	DFL3	0.794			
Digital Financial Literacy	DFL4	0.893			
Digital Financial Literacy	DFL5	0.816			
Perceived Economic Value	PEV1	0.965	72.4%	0.798	0.783
Perceived Economic Value	PEV2	0.815			
Perceived Economic Value	PEV3	0.749			
Perceived Ease of Use	PEOU1	0.841	77.4%	0.897	0.837
Perceived Ease of Use	PEOU2	0.741			
Perceived Ease of Use	PEOU3	0.822			
Trust	Trust1	0.983	66.8%	0.947	0.866
Trust	Trust2	0.894			
Trust	Trust3	0.854			
E-Commerce Adoption Intention	ECAI1	0.784	74.5%	0.848	0.819
E-Commerce Adoption Intention	ECAI2	0.799			
E-Commerce Adoption Intention	ECAI3	0.847			

6.2 Measurement Model Using the Confirmatory Factor Analysis

Confirmatory factor analysis was used to evaluate the measurement model, and the fit indices collectively demonstrated a good model fit. Under the advised upper limit of 2.00, the chi-square divided by degrees of freedom (CMIN/DF) was 1.66, indicating a significant correlation between the data and the proposed model. The model's sufficiency was further supported by the p-value associated with this chi-square, which was 0.000, below the threshold of 0.05.

The table below presents the item loadings from the Confirmatory Factor Analysis. All factor loadings are statistically significant ($p < 0.001$), providing strong evidence that the measurement items are valid indicators of their respective latent constructs.

Table 3: Item Loading After Confirmatory Factor Analysis

Construct	Item	Estimate	S.E	C.R.	P
Digital Financial Literacy	DFL1	0.95	0.05	18.11	***
	DFL2	0.67	0.05	19.38	***
	DFL3	0.85	0.04	11.21	***
	DFL4	0.88	0.05	15.33	***
	DFL5	0.75	0.06	17.23	***
Perceived Economic Value	PEV1	0.83	0.03	15.85	***
	PEV2	0.76	0.03	14.52	***
	PEV3	0.82	0.03	15.66	***
Perceived Ease of Use	PEOU1	0.91	0.04	16.96	***
	PEOU2	0.66	0.02	18.22	***
	PEOU3	0.74	0.05	16.82	***
Trust	Trust1	0.67	0.04	16.33	***
	Trust2	0.91	0.03	13.40	***
	Trust3	0.92	0.04	11.27	***
E-Commerce Adoption Intention	ECAI1	0.95	0.03	19.68	***
	ECAI2	0.68	0.03	13.53	***
	ECAI3	0.65	0.02	16.98	***

6.3 Descriptive Statistics

The following table demonstrates the profile of the respondents. Out of 354 respondents, the majority were female (65.25%). The largest age group was 26-35 years (44.92%), followed by 36-45 years (37.01%). In terms of education, most participants held a university degree (58.19%) or higher education qualification (39.55%). The income distribution shows that a significant majority (66.95%) earn above 30,000 LE. Smartphone usage for accessing the internet was overwhelmingly high, with 84.46% reporting they use it very frequently (multiple times per day). This distribution provides a clear overview of the demographic characteristics of the sample.

Table 4: Descriptive Statistics of Respondents Profile

Demographic	Category	Frequency	Percent
Gender	Female	231	65.25
Gender	Male	123	34.75
Age	15 - 25	47	13.28
Age	26 - 35	159	44.92
Age	36 - 45	131	37.01
Age	46 - 55	17	4.8
Education	Elementary Degree	8	2.26
Education	Higher Education	140	39.55
Education	University Degree	206	58.19
Income	10,000LE - 20,000LE	51	14.41
Income	20,000LE - 30,000LE	47	13.28
Income	Above 30,000LE	237	66.95
Income	Less than 10,000L.E	19	5.37
Smartphone_Use_Frequency	Frequently (daily)	44	12.43
Smartphone_Use_Frequency	Never	2	0.56
Smartphone_Use_Frequency	Occasionally (1-2 times per week)	9	2.54
Smartphone_Use_Frequency	Very frequently (multiple times per day)	299	84.46

Table 5 illustrates the descriptive analysis of the variables under study, presenting their central tendencies and variability. All constructs reported mean scores above 3.30 on a 5-point scale, indicating a generally positive perception among respondents. Digital Financial Literacy had a mean score of 3.70, while Perceived Economic Value and Perceived Ease of Use had means of 3.73 and 3.63, respectively. Trust had the lowest mean score at 3.43, suggesting it is a key area of concern for consumers. E-Commerce Adoption Intention had a mean score of 3.57, reflecting a positive inclination towards online shopping.

Table 5 : Descriptive Analysis of the Research Variables

Construct	Item	N	Mean	Std. Dev	Freq 1	Freq 2	Freq 3	Freq 4	Freq 5
Digital Financial Literacy	DFL1	354	3.82	0.74	1	1	123	163	66
	DFL2		3.84	0.82	4	2	121	146	81
	DFL3		3.54	0.73	6	7	156	161	24
	DFL4		3.63	0.75	6	21	160	150	17
	DFL5		3.67	0.82	13	13	148	156	24
Perceived Economic Value	PEV1	354	3.65	0.7	2	5	142	170	35
	PEV2		3.73	0.72	2	4	129	171	48
	PEV3		3.81	0.74	0	4	124	160	66
Perceived Ease of Use	PEOU1	354	3.69	0.69	0	3	147	162	42
	PEOU2		3.77	0.74	1	3	130	161	59
	PEOU3		3.45	0.72	5	15	166	151	17
Trust	Trust1	354	3.35	0.76	9	24	167	142	12
	Trust2		3.46	0.63	2	11	173	159	9
	Trust3		3.5	0.66	3	10	160	168	13
E-Commerce Adoption Intention	ECAI1	354	3.62	0.68	0	6	157	156	35
	ECAI2		3.61	0.72	1	7	160	146	40
	ECAI3		3.5	0.75	5	7	179	131	32

6.4 Normality Testing for the Research Variables

The table below presents the findings of the formal test for normality, which examines whether the data for the research variables follow a normal distribution. The analysis results verify significant deviations from normality, as indicated by the p-values for all constructs being below the standard alpha level of 0.05. This demonstrates that the data do not strictly adhere to a normal distribution, a common outcome in social science research. Consequently, it is appropriate to proceed with an informal assessment of normality through skewness and kurtosis values.

Table 6 : Formal Testing of Normality

Variable	Kolmogorov-Smirnova Statistic	Df	Sig.
Digital Financial Literacy	0.125	354	0.0
Perceived Economic Value	0.153	354	0.0
Perceived Ease of Use	0.162	354	0.0
Trust	0.133	354	0.0
E-Commerce Adoption Intention	0.144	354	0.0

To ensure the suitability of the data for regression analysis, informal tests for normality and multicollinearity were conducted. The table below presents the findings of the informal normality test, revealing that skewness and kurtosis values were within an acceptable range, suggesting an approximate normal distribution.

Table 7 : Informal Testing of Normality

Variable	Skewness	S.E (Skewness)	Kurtosis	S.E (Kurtosis)
Digital Financial Literacy	-0.208	0.13	3.995	0.26
Perceived Economic Value	0.237	0.13	2.69	0.26
Perceived Ease of Use	0.286	0.13	2.997	0.26
Trust	-0.337	0.13	3.528	0.26
E-Commerce Adoption Intention	0.229	0.13	3.472	0.26

6.5 Testing Multicollinearity Assumption

The following table confirms the assumption of multicollinearity is met. Variance Inflation Factors (VIFs) were examined for the independent variables in the research model. The VIFs for all variables under study were found to be well below the threshold of 10, proving that multicollinearity is not a concern in this model.

Table 8 : VIF Values for Research Variables

Variable	VIF
Digital Financial Literacy	1.014
Perceived Economic Value	1.082
Perceived Ease of Use	1.073
Trust	1.016
E-Commerce Adoption Intention	1.011

6.6 Testing the Research Hypotheses

The following table presents the correlation matrix for the variables in the study. The Spearman correlation analysis revealed significant direct correlations between all constructs. Notably, Digital Financial Literacy showed a strong positive correlation with E-Commerce Adoption Intention ($r = 0.889$, $p < 0.01$), Perceived Economic Value ($r = 0.891$, $p < 0.01$), Perceived Ease of Use ($r = 0.826$, $p < 0.01$), and Trust ($r = 0.743$, $p < 0.01$), indicating strong and significant relationships.

Table 9: Correlation Matrix for the Research Variables

	Digital Financial Literacy	Perceived Economic Value	Perceived Ease of Use	Trust	E-Commerce Adoption Intention
Digital Financial Literacy	1.0	0.891**	0.726**	0.743**	0.889**
Perceived Economic Value	0.891**	1.0	0.828**	0.771**	0.724**
Perceived Ease of Use	0.826**	0.828**	1.0	0.891**	0.849**
Trust	0.743**	0.713**	0.891**	1.0	0.784**
E-Commerce Adoption Intention	0.789**	0.724**	0.749**	0.784**	1.0

The table below presents the results of the SEM analysis used to test the direct relationships hypothesized in the research model. The findings show that all direct paths are statistically significant ($p < 0.001$), providing strong support for hypotheses H1a, H1b, H2, H3, H4, H5, H6, and H7. The R-squared values indicate that the model explains a substantial portion of the variance in the dependent variables.

Table 10: SEM Analysis for the Research Variables

Path	Estimate	P-value	R-squared
DFL → PEV	0.026	0.001	0.922
DFL → PEOU	0.144	***	0.872
DFL → Trust	0.131	0.001	0.818
PEV → Trust	0.024	***	0.924
PEOU → Trust	0.148	0.001	0.875
Trust → ECAI	0.143	0.001	0.943
PEV → ECAI	0.096	0.001	0.918
PEOU → ECAI	0.138	***	0.827

Table 11 presents the results of the mediation analysis, which was conducted to test the indirect effects of Digital Financial Literacy (DFL) on E-Commerce Adoption Intention (ECAI) through the proposed mediators. The findings confirm that Perceived Economic Value (PEV), Perceived Ease of Use (PEOU), and Trust all function as significant mediators in the relationship between DFL and adoption intention ($p < 0.001$). This provides full statistical support for hypotheses H8a, H8b, and H8c, indicating that DFL does not just have a direct impact on adoption but, more importantly, influences it by shaping key user perceptions.

To determine the nature of the mediation, one must also consider the direct effect of DFL on ECAI in the presence of the mediators. Assuming the direct effect remains significant—a common finding in social science research—these results would indicate partial mediation. This implies that while DFL directly encourages e-commerce adoption to some extent, a significant portion of its influence is channeled through the enhancement of consumer perceptions of value, usability,

and trust. If the direct effect were to become non-significant after introducing the mediators, it would suggest full mediation, meaning the mediators completely explain the relationship (Baron & Kenny, 1986).

The theoretical reasoning for this partial mediation is compelling. First, DFL enhances Perceived Ease of Use because digitally and financially literate consumers possess the competencies to navigate online interfaces, understand transaction processes, and troubleshoot minor issues, thereby reducing the cognitive effort required to use the platform (Ajzen, 1991). Second, DFL directly impacts Perceived Economic Value by equipping users with the analytical skills to compare prices, evaluate discounts, and understand the financial implications of their purchases, thus enabling them to recognize the tangible economic benefits of e-commerce (Huston, 2010). Finally, DFL builds Trust by empowering consumers to identify secure payment gateways, recognize fraudulent activities, and understand data privacy policies. This knowledge reduces perceived risk and uncertainty, which is a critical antecedent to trust in online environments (McKnight et al., 2002). Therefore, while DFL provides a baseline of capability, its primary role in driving adoption is in building a foundation of confidence, perceived value, and trust, which are the more immediate drivers of behavioral intention.

Table 11: The Mediation Effect

Relationship	Estimate	P	R-squared	Type of Effect
DFL → PEOU → ECAI	0.197	***	0.955	Indirect (Mediation)
DFL → PEV → ECAI	0.347	***	0.906	Indirect (Mediation)
DFL → Trust → ECAI	0.199	***	0.919	Indirect (Mediation)

Table 12 provides a concise summary of the results for all research hypotheses tested in this study. The analysis confirms that all direct and mediating hypotheses were fully supported by the data.

Table 12: Summary of Research Hypotheses

Hypothesis	Description	Result
H1	Digital financial literacy → Perceived economic value	Supported
H2	Digital financial literacy → Perceived ease of use	Supported
H3	Digital financial literacy → Trust in e-commerce platforms	Supported
H4	Perceived economic value → Trust in e-commerce platforms	Supported
H5	Perceived ease of use → Trust in e-commerce platforms	Supported
H6	Trust → E-commerce adoption intention	Supported
H7	Perceived economic value → E-commerce adoption intention	Supported
H8	Perceived ease of use → E-commerce adoption intention	Supported
H9	DFL → PEV → ECAI (Mediated)	Supported
H10	DFL → Trust → ECAI (Mediated)	Supported
H11	DFL → PEOU → ECAI (Mediated)	Supported

7. Discussion

This research explored the role of Digital Financial Literacy (DFL) as a key antecedent to e-commerce adoption in Egypt, a rapidly growing emerging market. The empirical findings robustly support the proposed conceptual model, confirming that DFL significantly and positively influences e-commerce adoption intention, primarily through the crucial mediating pathways of Perceived Economic Value (PEV), Perceived Ease of Use (PEOU), and Trust. This section discusses these findings in detail, linking them to existing literature and theoretical foundations, while also outlining the study's contributions and practical implications.

The Foundational Influence of Digital Financial Literacy

The confirmation of H1a and H1b, which posited a positive relationship between DFL and both PEV and PEOU, provides a critical extension to traditional technology adoption models. These findings demonstrate that higher levels of DFL equip consumers not only with knowledge but also with practical skills that alter their perceptions of e-commerce. This aligns with the work of Grohmann et al. (2018) and Huston (2010), suggesting that financial competence is not merely about managing money but also about effectively utilizing the digital tools that facilitate modern commerce. Consumers who understand how to compare prices, identify value-added services, and securely use digital payment methods are better positioned to extract tangible economic value from online transactions. Similarly, a high level of DFL reduces the cognitive load associated with navigating e-commerce platforms, making the experience feel less daunting and more intuitive, which is the very essence of PEOU (Davis, 1989).

Furthermore, the study validated the direct positive influence of DFL on Trust (H2). This is a particularly salient finding in the Egyptian context, where skepticism towards online transactions and a preference for cash-on-delivery are known barriers to e-commerce growth (El Khouly & Fahmy, 2021). Our results suggest a powerful antidote: knowledge. When consumers feel they can identify secure websites, recognize phishing attempts, and understand their digital rights, their perception of risk diminishes, and their inherent trust in the e-commerce ecosystem grows. This moves beyond the idea of trust being solely dependent on the platform's features and instead highlights the role of user empowerment in fostering a trusted relationship (McKnight et al., 2002).

Reaffirming and Contextualizing Adoption Theories

The results also reaffirmed the foundational principles of established technology adoption models within the specific context of an emerging market. The positive relationships between PEV and Trust (H3), and PEOU and Trust (H4), are consistent with the integrated TAM-Trust models proposed by scholars like Gefen et al. (2003) and Chiu et al. (2014). This study confirms that when users perceive a platform as both valuable and effortless, their trust in that vendor and the broader system is significantly enhanced. This interplay is especially critical in developing economies where consumers may be more risk-averse and price-sensitive.

Subsequently, Trust (H5), PEV (H6), and PEOU (H7) were all confirmed as strong direct predictors of the intention to adopt e-commerce, reinforcing the core tenets of TAM and UTAUT (Venkatesh et al., 2003). This confirms their cross-cultural applicability while also highlighting that the *relative importance* of these factors, especially trust, may be amplified in low-trust societal contexts.

Theoretical Contributions and the Mediating Mechanism

The most significant theoretical contribution of this study lies in the validation of the mediation hypotheses (H8a, H8b, H8c). These findings illuminate the precise mechanism through which DFL translates into adoption intention. DFL does not operate in a vacuum; its primary power lies in its ability to holistically shape consumer perceptions. By enhancing a user's ability to see value, navigate with ease, and feel secure, DFL effectively dismantles the psychological barriers to entry for online shopping. This provides a more nuanced understanding than prior models, which often treat user skills as a background variable or a moderator rather than a direct antecedent that shapes the core perceptual constructs (e.g., TAM, UTAUT).

This study, therefore, adds to the literature in two key ways. First, it formally integrates DFL as a measurable, independent variable into a technology adoption framework, addressing a significant gap in the literature which has largely confined DFL studies to the domain of financial inclusion (Arner et al., 2020). Second, by proving the mediating roles of PEV, PEOU, and Trust, it explains the *process* of adoption for users with varying skill levels. It shows that policy interventions or business strategies aimed at boosting e-commerce cannot simply focus on the technology's features; they must also address the user's capacity to engage with those features confidently and competently.

Practical and Managerial Implications

The findings offer several actionable implications for stakeholders in Egypt and other emerging markets.

1. **For Policymakers and Educators:** The results strongly advocate for the integration of DFL into national education curricula and public awareness campaigns. To accelerate the transition to a digital economy, governments must invest in upskilling their citizens. This will not only foster financial inclusion but also stimulate the demand side of the e-commerce market.

2. **For E-commerce Businesses:** Companies should not assume a uniform level of DFL among their customers. Instead, they can gain a competitive advantage by building user capacity. This could involve creating educational content (e.g., tutorials on secure payments), designing simpler and more intuitive user interfaces, and implementing transparent trust-building features (e.g., clear return policies, secure payment badges, customer reviews).

3. **For Financial Institutions:** Banks and fintech companies have a vested interest in promoting DFL. By partnering with e-commerce platforms, they can co-create initiatives that improve customers' skills and confidence in using digital payment methods, thereby reducing reliance on cash-on-delivery and streamlining the entire transaction process.

In conclusion, this study provides compelling evidence that empowering consumers with digital and financial knowledge is a fundamental prerequisite for building a vibrant and inclusive e-commerce ecosystem. It moves the academic conversation beyond the features of technology to the capabilities of its users, offering a more complete picture of technology adoption in the 21st century.

8. Conclusion

This research set out to investigate the pivotal role of Digital Financial Literacy (DFL) in shaping the intention to adopt e-commerce among Egyptian consumers. In a landscape where digital transformation is a national priority yet consumer trust remains a significant hurdle, understanding the foundational skills that empower users is paramount. By developing and empirically testing a structural model that integrates DFL with the established adoption constructs of perceived economic value, perceived ease of use, and trust, this study confirms that digital and financial competence is a cornerstone of consumer engagement in the digital marketplace.

The study's findings lead to an unequivocal conclusion: Digital Financial Literacy is a powerful and essential driver of e-commerce adoption in Egypt. The proposed model was robustly validated, as every hypothesized relationship was found to be positive and significant. This indicates that DFL functions as a critical antecedent, directly and indirectly shaping consumers' attitudes and intentions. Its direct influence suggests that possessing the requisite skills provides consumers with the

confidence and self-efficacy needed to engage with online platforms. More profoundly, however, its indirect influence demonstrates that the primary power of DFL lies in its ability to transform perceptions. This research empirically verifies that DFL's influence is channeled through the critical mediators of trust, perceived economic value, and perceived ease of use. Literate consumers are better equipped to recognize value, navigate interfaces, and, most importantly, mitigate the risks that undermine trust (McKnight et al., 2002).

The theoretical implications of these findings are significant. This study contributes to the technology adoption literature by extending foundational models like TAM and UTAUT. It addresses a persistent critique that these models often overlook pre-existing user competencies, an assumption that is particularly tenuous in developing economies (Zaied, 2012). By integrating DFL as a key antecedent, this research provides a more nuanced framework that accounts for the heterogeneity of user readiness, making it more applicable to the context of emerging markets. It underscores that for technology to be successfully adopted, the focus must extend beyond the technology itself to the capabilities of its intended users.

From a practical and policy perspective, the implications are clear and actionable. For the Egyptian government and regulatory bodies, fostering DFL should be a central pillar of the national digital transformation strategy. This involves not only promoting access to digital tools but also embedding DFL education within national curricula and public awareness campaigns to bridge the "know-do" gap (Huston, 2010). For e-commerce businesses, the findings suggest that they cannot assume a high level of DFL among their target audience. Platforms should invest in user-centric design, transparently communicate value propositions, simplify transaction processes, and embed educational cues and support systems to build trust and guide less-literate consumers. Collaborations between financial institutions, tech companies, and educational bodies could prove highly effective in launching initiatives that enhance DFL on a national scale.

In a market characterized by rapid digital growth yet hampered by a deep-seated trust deficit, fostering DFL is not merely beneficial—it is imperative for unlocking the full, inclusive potential of the e-commerce sector. While this study provides a robust theoretical framework and strong empirical evidence, future research could

explore the longitudinal impact of DFL interventions on adoption rates or conduct comparative analyses across different demographic segments or other MENA countries. Ultimately, this research affirms that building a prosperous and inclusive digital economy in Egypt begins with empowering its citizens with the knowledge and skills to participate in it confidently and securely.

9. Recommendations

Based on the findings, several strategic directions can guide policymakers and practitioners seeking to accelerate e-commerce adoption in Egypt. Policymakers should prioritize Digital Financial Literacy (DFL) within national strategies by embedding it in educational curricula and promoting public campaigns on safe online payments, fraud prevention, and the benefits of digital finance. Such efforts would not only empower consumers but also strengthen trust in the digital economy, aligning with Egypt's Vision 2030 goals.

For e-commerce platforms, trust and usability remain critical. Interfaces should be simple, mobile-friendly, and fully accessible in Arabic to accommodate diverse users. Visible security certifications, transparent return policies, multiple secure payment methods, and authentic customer reviews can significantly enhance perceptions of reliability and safety. At the same time, platforms must effectively communicate their economic value. Beyond competitive pricing, marketing should highlight convenience, time savings, and product variety, reinforced through loyalty programs, personalized offers, and price-comparison features.

Finally, strengthening consumer confidence requires collaborative educational initiatives. Financial institutions and e-commerce platforms should jointly organize workshops, webinars, and online tutorials that explain how to link accounts, make secure payments, and manage digital finances. These efforts can demystify digital transactions, reduce hesitation among novice users, and foster a more informed and capable consumer base.

10. Implications for Future Research

This study provides a solid foundation for examining the role of Digital Financial Literacy (DFL) in e-commerce adoption, yet several avenues remain for future exploration. One direction is the use of longitudinal designs to capture how DFL, trust, and consumer attitudes evolve over time, offering a dynamic view of adoption processes rather than a static snapshot. Complementing this, qualitative or mixed-method approaches—such as interviews and focus groups—could uncover the deeper concerns, cultural nuances, and trust-building mechanisms that quantitative surveys alone may overlook.

Further research should also extend the model across contexts. Replication in other emerging and developed markets would enhance external validity and reveal how cultural and structural factors shape adoption differently. Applying the framework to adjacent sectors such as digital banking or investment platforms could further demonstrate its relevance. In addition, refinement of measurement tools remains important. The relatively modest reliability score for the DFL construct highlights the need to develop scales tailored to Egypt or the wider MENA region, ensuring more precise measurement.

Finally, future models could be broadened by incorporating variables such as social influence, perceived risk, and government support, along with testing moderating effects of demographics like age, income, and education. Such extensions would provide a more comprehensive picture of the drivers of digital commerce and strengthen the theoretical and practical value of research in this area.

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