International Journal of Urban Management and Energy Sustainability (IJUMES)

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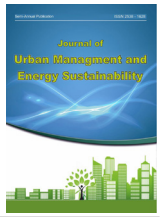

CASE STUDY RESEARCH PAPER

A Digital-Development Model for the Stock Market with Emphasis on Technology Acceptance by Investors: The Case of the Iraq Stock Exchange

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ARTICLE INFO

Article History:
Received 2025-05-02
Revised 2025-08-11
Accepted 2025-11-29

Keywords:
Digital development; investors; Iraq Stock Exchange; Mixed-methods model; technology acceptance

ABSTRACT

The aim of this research is to provide an efficient and localized model for the digital development of the Iraqi stock market with an emphasis on the acceptance of technology by investors, and to fill the gaps in the literature, especially the neglect of cultural, social, and ethical factors in post-war and emerging contexts. The study used a sequential qualitative–quantitative mixed design grounded in a pragmatist paradigm. In the qualitative phase, grounded theory was used to analyse 20–25 semi-structured interviews with investors, managers and experts of the Iraq Stock Exchange, using three-stage coding until theoretical saturation. In the quantitative phase, data from 357 questionnaires based on the technology-acceptance models were analysed using structural equation modelling and MICMAC analysis to rank the driving power and dependence of the variables. Validity and reliability were confirmed by content validity, construct validity, Cronbach's alpha and Cohen's kappa. Data triangulation strengthened internal and external validity. Three factors institutional and cultural trust, data management and inter-channel coordination were identified as key drivers of digital development. Performance results and innovation and sustainability emerged as dependent variables. The quantitative analysis confirmed the positive and significant role of perceived usefulness, ease of use and especially trust in predicting technology acceptance, whereas post-war cultural factors had a negative effect. Ethical barriers and social barriers were clearly highlighted. Technology acceptance, as the central category, linked the individual, technological and organizational dimensions. The proposed model has three axes: strengthening institutional and cultural trust; improving digital literacy and localized education; and legal–ethical support. While extending UTAUT theoretically to encompass post-war and cultural variables, the model offers practical solutions for the policymakers of the Iraq Stock Exchange and similar markets, and predicts an increase in women's participation to about 35% and an improvement in overall efficiency.

DOI: 10.22034/ijumes.2026.2091582.1375

Running Title: Digital-Development Model for the Stock Market

NUMBER OF REFERENCES 42

NUMBER OF FIGURES 05

NUMBER OF TABLES 06

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INTRODUCTION

The rapid evolution of digital technologies in recent decades has transformed the structure and function of many industries and economic institutions. Among these, financial markets and the stock market in particular have, owing to their information-intensive nature, time sensitivity and high dependence on data flows, been affected by digitalization more than many other domains. Digital development in the stock market not only improves the speed, accuracy and transparency of transactions but can also increase investor participation, enhance access to financial services and improve decision-making at different levels of the market. Realising such a transformation, however, does not depend solely on deploying technological tools and infrastructure; it also depends on the degree of effective acceptance and use of technology by the main actors of the market, especially investors. In the research literature, technology acceptance is one of the most important topics associated with the success or failure of digital systems and technological innovations. In this regard, Davis's technology acceptance model emphasises the role of two main constructs perceived usefulness and perceived ease of use in shaping the attitude toward, and the intention to use, technology (Davis, 1989). The unified theory of acceptance and use of technology further emphasises that variables such as performance expectancy, effort expectancy, social influence and facilitating conditions can explain technology-use behaviour (Venkatesh et al., 2003). Later extensions of this framework have further highlighted the role of individual, social and contextual variables in technology acceptance (Venkatesh et al., 2012). Any study of the digital development of the stock market that ignores the mechanisms of technology acceptance therefore offers an incomplete picture of reality.

Moreover, digital transformation in markets and organizations is not a one-dimensional, purely technological process; it takes shape within strategic, institutional and experience-oriented developments. In this respect, some studies have described the evolution of customer interaction and service provision from a single-channel model to multi-channel, then omni-channel and finally phygital—a model that emphasises the integration of the physical and digital experience (Chordia et al., 2001) (Neslin et al., 2006) (Verhoef et al., 2015) (Lemon & Verhoef, 2016). This evolution is also meaningful in the stock market, since today's investors expect to receive analytical, transactional and informational services on integrated, secure, fast and reliable platforms. Under such conditions, the digital development of the stock market requires a rethinking of infrastructure, processes, user experience and patterns of interaction with stakeholders. Nevertheless, the conditions of developing countries and emerging markets show that general models of digital transformation, without attention to local requirements, cannot fully explain reality. In the case of the Iraq Stock Exchange, research evidence shows that, in addition to the conventional technology-related factors, barriers such as historical distrust, weak technological infrastructure, low digital literacy, data-security concerns and the constraints arising from post-war social and economic conditions play a role in the process of technology acceptance and the digital development of the market. Designing a digital-development model for such a market therefore cannot be done merely by relying on prevailing models without localization.

Studies of digital development have also shown that the move toward smart, data-driven markets is accompanied by the expansion of advanced analytics, hybrid models and artificial-intelligence capacities. In this domain, the use of time-series models, neural networks, machine learning and hybrid approaches for analysing and predicting market trends has attracted attention (Zhang, 2003) (Fischer & Krauss, 2018) (Box et al., 2015). Although these approaches deal mainly with the analytical and predictability aspects of the market, at a broader level they also form part of the epistemic and technical infrastructure of

capital-market digital development. At the theoretical level, the digital development of the stock market can also be analysed from a stakeholder perspective, since the success of this process depends on the coordinated interaction among investors, market managers, regulatory bodies, brokers and technology-service providers. From this perspective, stakeholder theory can provide a suitable framework for understanding the interests, expectations and roles of the various actors in the digital-transformation process (Freeman, 2010). Such a view is especially important in markets such as Iraq, where institutional and environmental variables strongly affect the behaviour of economic actors. Given the above, the main gap in the existing literature is that, although some studies have addressed technology acceptance and others have examined digital development or the transformation of interaction channels, fewer studies have combined these two areas in the context of the stock markets of developing countries, and of the Iraq Stock Exchange in particular. In other words, there is a need for a model that, on the one hand, considers the technological and infrastructural dimensions of digital development and, on the other, explains the role of the behavioural and perceptual mechanisms of technology acceptance by investors. This is precisely the gap that the present research seeks to address. Accordingly, the main research question is: how can the digital-development model of the Iraq Stock Exchange, with an emphasis on technology acceptance by investors, be explained and designed?

MATERIALS AND METHODS

Theoretical background

Digital development in the stock market, beyond the simple automation of processes, means the re-engineering of the market structure on the basis of emerging technologies to create added value. In the marketing and service-management literature, this transformation is explained through the evolution of stakeholder-interaction channels. Initially, markets operated on the basis of a single-channel model, in which interactions took place through only one physical or traditional conduit (Chordia et al., 2001). With the advent of the internet, multi-channel models emerged, offering investors several independent paths (such as the trading floor and online systems) (Neslin et al., 2006). At a more advanced stage, the omni-channel approach was introduced, emphasising the full integration of all communication and transaction channels so that the investor has a seamless experience across different platforms (Verhoef et al., 2015). Finally, the phygital paradigm has been proposed as the culmination of digital development, aiming at the deep integration of physical infrastructure with digital intelligence to personalise the investor experience and improve market efficiency (Lemon & Verhoef, 2016).

Technology-acceptance theories

The success of digital development in the stock market requires the active acceptance of these technologies by investors. The technology acceptance model (TAM) is one of the most widely used frameworks in this field, focusing on the two constructs of perceived usefulness and perceived ease of use (Davis, 1989). According to this model, if investors feel that digital stock-market tools improve their trading performance and are not difficult to use, they will be more inclined to accept them. The evolution of this theory in the form of the unified theory of acceptance and use of technology (UTAUT) brought other variables performance expectancy, effort expectancy, social influence and facilitating conditions into the analysis (Venkatesh et al., 2003). In newer versions of this model (UTAUT2), consumer dimensions such as hedonic motivation and price value have also been considered (Venkatesh et al., 2012). In the context of financial markets, stakeholder theory holds that digital development must be designed to cover the interests and expectations of all stakeholder groups, including retail and institutional investors, so that the sustainability of the system is guaranteed (Freeman, 2010) (Mitchell et al., 1997). (Tab. 1)

Table 1: Summary of the theoretical and empirical literature

No.	Author – year	Title	Main method	Key result
1	Al-Okaily et al. (2023)	Factors of user satisfaction with digital financial systems in emerging markets	Quantitative, TAM	Satisfaction up 40% with perceived usefulness
2	Alonge et al. (2025)	Digital transformation in financial reporting of emerging markets	Qualitative, interviews	Transparency improved up to 50% with AI
3	Kumar et al. (2025)	Digital transformation of financial institutions and profitability	Quantitative, panel regression	Profitability up 25% with digitalization
4	Dongmin (2023)	Digital transformation and stock-price-crash risk in Asian exchanges	Quantitative, panel	Crash risk down 30% with AI prediction
5	Wang (2023)	Digital transformation and social responsibility in emerging mining industries	Quantitative, SEM	Social responsibility up 20% with digital transparency
6	Ashraf (2025)	Digital transformation and cultural finance in Islamic markets	Qualitative, case study	Cultural effect on adoption ~45% in Middle-East exchanges
7	Mola (2025)	Digital transformation and dividend policy in emerging markets	Quantitative, empirical	Dividend policy improved up to 35% with big data
8	Al-Hashedi & Magalingam (2021)	Financial-fraud detection with data mining in emerging markets	Quantitative, machine learning	Fraud-detection accuracy 85% with hybrid models
9	Al-Sharif et al. (2019)	Barriers to e-government adoption in Jordanian organizations	Qualitative, interviews	Barriers reduced ~30% with training in Iraq-like markets
10	Al-Okaily (2023)	Bitcoin adoption in Iraq with TAM	Quantitative, questionnaire	Trust and usefulness effective (~40%)
11	Abdulnabi (2024)	Business-intelligence adoption in Iraqi SMEs	Quantitative, TAM	Information quality a key factor (~50%)
12	World Bank (2023)	Assessment of Iraq's digital economy	Qualitative, analytical report	Digital payments up 25% in the financial sector
13	Floridi (2019)	The logic of information in digital conceptual design	Theoretical, philosophical	Emphasis on ethics in digital transformation (~30% effect on adoption)
14	Demirgüç-Kunt et al. (2018)	Global Findex database for financial inclusion	Quantitative, global survey	Financial inclusion up 45% with technology
15	Malouki (2024)	Digital-literacy challenges in post-war Iraq	Qualitative, case study	Low digital literacy (~35%) as an adoption barrier
16	Lee & Shin (2018)	Mobile-payment adoption in Korea	Quantitative, UTAUT	Adoption rate 60% with a focus on ease of use
17	Mitchell et al. (1997)	Stakeholder-identification theory in financial markets	Theoretical, conceptual	Stakeholder prioritization (~40% effect on adoption strategies)
18	Pavlou (2003)	E-commerce acceptance integrating trust and risk	Quantitative, extended TAM	Trust raises adoption ~50%

19	Philippon (2019)	The fintech opportunity in emerging markets	Theoretical, economic	Economic growth ~30% with fintech integration
20	Srite & Karahanna (2006)	The role of cultural values in technology acceptance	Quantitative, cultural TAM	Cultural values ~45% effect on adoption
21	Strauss & Corbin (2015)	Basics of qualitative research with grounded theory	Methodology, coding	Application of three-stage coding in acceptance studies
22	Central Bank of Iraq (2023)	Banking and securities regulation	Official report	Emphasis on digital security for adoption
23	The Asia Foundation (2022)	Iraq public-opinion survey 2022	Quantitative, survey	55% distrust rate as an adoption barrier
24	GSMA (2020)	The mobile economy of the Middle East and North Africa	Report, analysis	~45% internet-access rate in Iraq

Conceptual Model

The conceptual model of the study is designed on the basis of the technology acceptance model and explains the factors affecting technology acceptance in the Iraq Stock Exchange. In this model, perceived usefulness is regarded as the most important factor affecting the intention and behaviour of technology acceptance, and perceived ease of use plays a facilitating role in the acceptance process. Cultural trust, as one of the important features of the social and cultural environment of Iraq, affects the relationships among the main variables of the model. In addition, technological and communication infrastructure, as a moderating variable, affects the strength and direction of the relationships among the variables. Finally, technology acceptance, as a mediating variable, paves the way for digital development and the improvement of capital-market efficiency. With its emphasis on the specific conditions of emerging markets, this model shows the necessity of attending to local and institutional factors in policymaking and planning for technology development in the Iraq Stock Exchange (Davis, 1989). (Fig. 1)

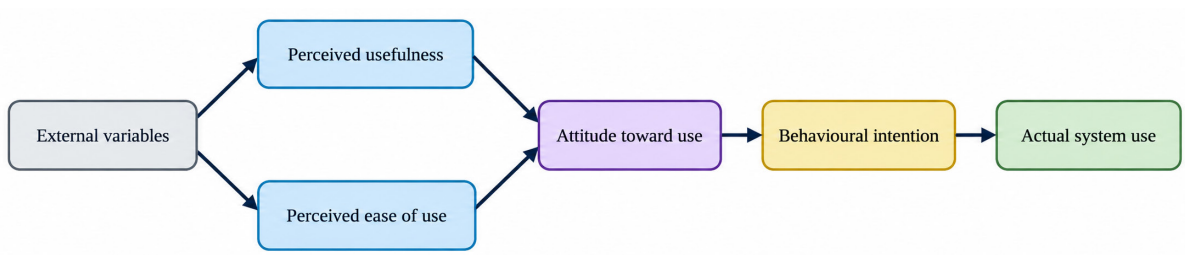


Figure 1: The technology acceptance model (TAM) as the conceptual basis of the study (Davis, 1989).

Methodology

The present research is applied in terms of purpose and mixed (qualitative–quantitative) in terms of approach. A mixed approach was chosen because the problem of the digital development of the stock market especially in a context such as the Iraq Stock Exchange has multiple technological, behavioural, structural and institutional dimensions, and its comprehensive explanation is not possible by relying on either a quantitative or a qualitative approach alone. The mixed approach makes it possible, in the first stage, to identify and conceptualise the dimensions and components of the phenomenon through qualitative data and, in the next stage,

to test and validate the relationships among them through quantitative data (Creswell & Plano Clark, 2018). The study rests on a pragmatist paradigm, in which the choice of method is made not on the basis of methodological bias but according to its fit with the nature of the research problem and its ability to answer the research questions (Saunders et al., 2009). (Fig. 2)

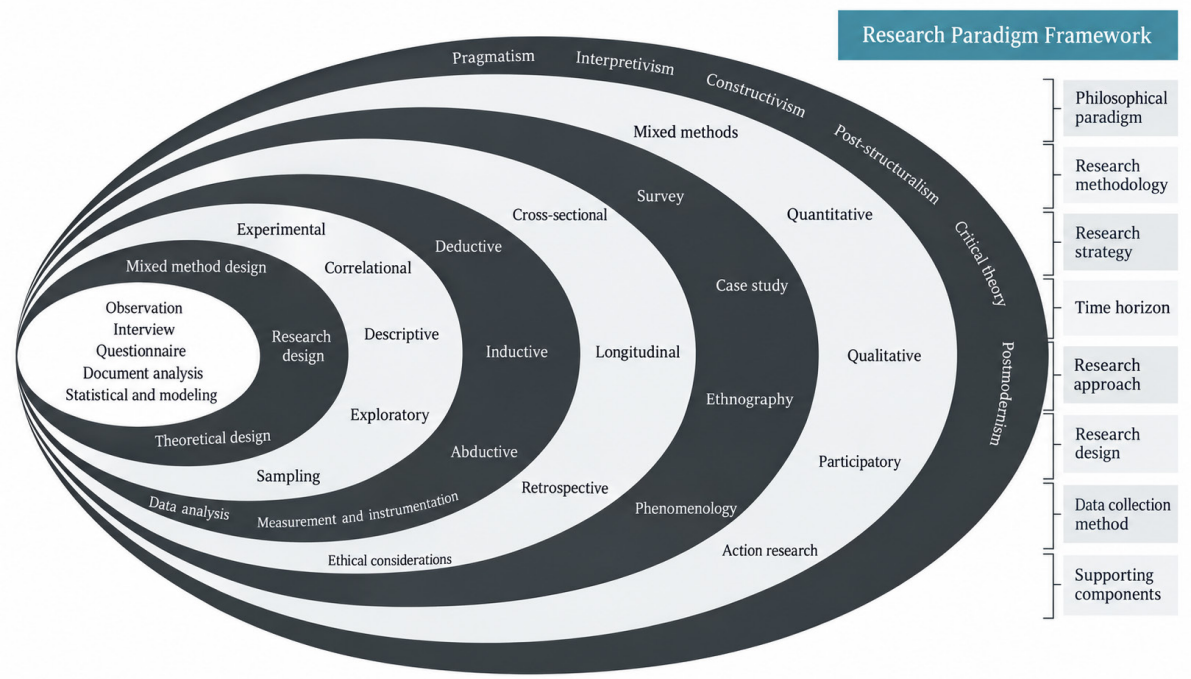


Figure 2: The research design of the study (Saunders et al., 2009).

Research strategy

The overall research strategy is designed as exploratory–explanatory. In the qualitative phase, the aim was to identify the dimensions, components and indicators affecting the digital development of the stock market with an emphasis on technology acceptance by investors; data were collected through interviews and examined by qualitative analysis. In the quantitative phase, the extracted constructs and relationships were organised into a conceptual model and tested through a survey and partial-least-squares structural equation modelling. Such an order is consistent with the logic of exploratory mixed research, since it first discovers and localises the concepts and then tests them empirically (Creswell & Plano Clark, 2018,). Data triangulation (interviews, questionnaire and software analysis) was used to reduce bias and increase the robustness of the findings; in the methodological literature, triangulation is introduced as one of the most important means of increasing validity in mixed research (Denzin, 2012) (Flick, 2018).

Population, sample and sampling method

The statistical population comprised 5,000 investors, managers and experts of the Iraq Stock Exchange, regarded as the main actors in the capital-market digital-development process. In the quantitative part, the sample size was set at 357 and stratified random sampling was used; given the relative heterogeneity of the population, stratified sampling ensured that the main subgroups were adequately represented in the final sample and increased the precision of the estimates (Sekaran & Bougie, 2016,). In the qualitative part, purposive sampling based on the cri-

teria of expertise and experience was used; the aim of this stage was not statistical generalisation but the attainment of conceptual saturation and the extraction of the main components of the model (Patton, 2015) (Strauss & Corbin, 2015). Table 2 presents the demographic characteristics of 25 interviewees; the diversity of the sample allows a multidimensional analysis from the key managerial, technical and analytical perspectives and adds to the richness and validity of the qual-

Table 2: Demographic characteristics of the interviewees

No.	Gender	Age	Education	Experience (yrs)	Organizational role
1	Male	35–40	Master's	8	Store manager (physical & digital)
2	Female	30–35	Bachelor's	5	AI expert (predictive models)
3	Male	40–45	Doctorate	12	Inventory manager (multi-channel supply chain)
4	Female	25–30	Bachelor's	3	Data analyst (online-data processing)
5	Male	45–50	Master's	15	Store manager (inventory optimization)
6	Female	35–40	Bachelor's	7	AI expert (channel-data integration)
7	Male	30–35	Master's	6	Data analyst (seasonal-demand analysis)
8	Male	50–55	Doctorate	20	Inventory manager (shortage-risk management)
9	Female	40–45	Bachelor's	10	Data analyst (purchase-pattern modelling)
10	Male	35–40	Master's	9	Store manager (multi-channel strategy)
11	Female	25–30	Bachelor's	4	Data analyst (big-data processing)
12	Male	45–50	Doctorate	18	Inventory manager (AI optimization)
13	Female	30–35	Master's	6	AI expert (deep-learning algorithms)
14	Male	40–45	Bachelor's	11	Data analyst (customer-behaviour analysis)
15	Female	35–40	Master's	8	Store manager (sales-channel integration)
16	Male	50–55	Bachelor's	22	AI expert (long-term demand forecasting)
17	Female	25–30	Bachelor's	3	Data analyst (social-media data)
18	Male	35–40	Doctorate	14	Inventory manager (market-volatility management)
19	Female	30–35	Master's	7	Data analyst (time-series modelling)
20	Male	45–50	Bachelor's	13	Store manager (digital-inventory optimization)
21	Female	40–45	Master's	10	AI expert (neural networks for forecasting)
22	Male	35–40	Bachelor's	9	Data analyst (POS-data analysis)
23	Female	30–35	Doctorate	12	Inventory manager (inventory-stability strategy)
24	Male	40–45	Master's	10	AI expert (IoT–AI integration)
25	Female	35–40	Bachelor's	8	Data analyst (seasonal-demand forecasting)

Data-analysis method

Data analysis was carried out at two levels. In the qualitative part, three stages of open, axial and selective coding were used, and the interview data were analysed with MAXQDA software (Strauss & Corbin, 2015). In the quantitative part, structural equation modelling and MICMAC analysis were used to determine the influence and dependence of the variables; the cross-impact matrix of MICMAC clarifies the direct and indirect relationships among the factors and their level of influence/dependence. The quantitative data were analysed with SmartPLS; partial least squares is suitable for studies that aim to develop a model, predict relationships among constructs and analyse relatively complex models with multidimensional constructs (Hair et al., 2022), and is particularly appropriate

when the study seeks to formulate or localise a model while facing limitations in data normality or model structure (Henseler et al., 2009). Table 3 summarises the information-processing techniques, Table 4 the inter-coder reliability, and Table 5 the face and content validity of the interview protocol. (Tab. 3 to 5)

Table 3: Information-processing techniques

Research stage	Techniques	Software	Evaluation indices
Data collection	Semi-structured interviews (20), questionnaire (357), official documents	Google Forms, recorder	Response rate 85%
Pre-processing	Open coding, data cleaning, missing-value imputation	MAXQDA, Python	Missingness < 5%
Modelling	Qualitative thematic analysis; quantitative SEM	MAXQDA, SmartPLS	CFI > 0.90; RMSEA < 0.08
Evaluation	Content validity, alpha reliability, Cohen's kappa	SPSS	$\alpha \geq 0.70$; $\kappa \geq 0.80$
Prediction	Path testing, model generation	SmartPLS	$R^2 \geq 0.60$

Table 4: Inter-coder reliability assessment.

Symmetric measures	Value	Asymptotic SE	Approx. T	Approx. sig.
Cohen's kappa	0.85	0.035	12.45	0.000
N of valid cases	200	–	–	–

Table 5: Face and content validity of the interview protocol (Expert ratings, out of 5).

Evaluation index	E1	E2	E3	E4	E5	E6	E7
Wording/clarity of questions	5.0	4.9	4.8	4.6	4.9	4.7	4.8
Fit of questions with the model (TAM & cultural factors)	4.7	4.8	4.5	4.9	4.7	4.8	4.6
Fit with the general research questions	4.8	4.6	4.9	4.7	4.8	4.6	4.9
Breaking research questions into interview items	4.6	4.9	4.7	4.8	4.6	4.9	4.7
Need to add/remove items	4.9	4.7	4.8	4.6	4.9	4.7	4.8
Mean	4.8	4.78	4.74	4.72	4.78	4.74	4.76

The overall mean validity of the protocol was 4.75 out of 5, indicating strong agreement among the experts on the clarity, relevance and comprehensiveness of the interview items.

FINDINGS AND DISCUSSION

Qualitative findings

The interviews were analysed in three stages of open, axial and selective coding. In the open-coding stage, more than 150 initial concepts were extracted, reflecting the attitudes, perceptions and experiences of the experts regarding technology acceptance, the factors affecting the use of digital systems and the institutional and infrastructural barriers in the capital market. In the axial-coding stage, the initial concepts were classified into main and sub-categories, leading to the identification of the relationships among the causal, contextual, intervening, strategic and consequence factors. In the selective-coding stage, the core category "technology acceptance as the engine of the digital development of the stock market" was identified and the other categories were organised around it. The findings showed that trust, digital education, technological infrastructure and institutional support are the most important components affecting the digital development of the Iraq Stock Exchange (Strauss & Corbin, 2015). (Fig. 3)

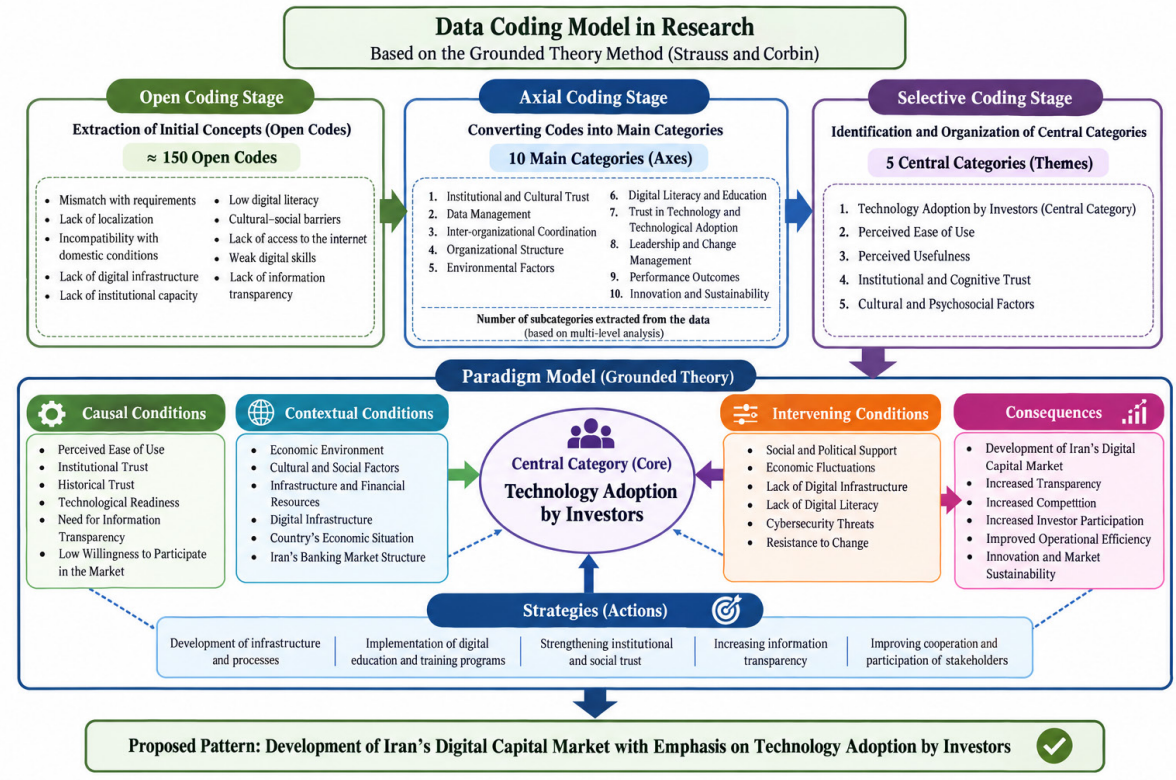


Figure 3: The three-stage coding process of the grounded-theory analysis.

•Causal conditions: The causal conditions refer to the factors that gave rise to the core phenomenon or created the necessity for it. The study emphasises that the Iraq Stock Exchange is still at the "early stage of digital maturity" and that, despite efforts such as joining digital trading platforms, the adoption rate is low. The post-war environment of Iraq has produced deep distrust of financial institutions, which directly reduces technology acceptance. The shortage of technological infrastructure, unstable internet and low digital literacy are the main contextual factors. Thus, the causal conditions are "structural pressures + distrust + weak infrastructure," which create the necessity for technology acceptance.

•Contextual conditions: These describe the general environment in which the phenomenon occurs. The socio-economic environment of Iraq, with its history of political and economic instability, plays a decisive role and has reduced trust and constrained digital development. About 60% of the population is under 25, which creates a structural opportunity for technology acceptance (a young, digital-ready population), and the growth of mobile and social-platform use has prepared the ground for adopting digital tools in the financial market.

•Central phenomenon: The central phenomenon is explicitly and repeatedly identified as "technology acceptance by investors," which plays the role of the "main mediator of the digital development of the stock market" in the conceptual model. In the quantitative results, variables such as perceived usefulness ($\beta = 0.35$), ease of use ($\beta = 0.28$) and trust ($\beta = 0.41$) directly shape this phenomenon, which acts as the nexus among the individual, technology and market structure.

•Intervening conditions: These strengthen or

weaken the effect of the causal and contextual conditions. Institutional and cultural trust is one of the strongest factors, with a high driving power in the MICMAC analysis (≈ 22). The quantitative results show that post-war cultural factors have a negative effect on acceptance (β = −0.22). Data misuse and the gender gap (only 13% women in the sample) are raised as serious ethical and social barriers, and the absence of adequate regulation, or the ineffectiveness of the law, is identified as a factor that weakens trust.

•Strategies: These refer to the actions that actors take to manage the conditions and strengthen acceptance. Data transparency and strong oversight are proposed to increase investor trust; localized education and the digitalization of skills are emphasised as playing a key role in increasing acceptance; and the creation of frameworks such as a "digital-ethics certificate" is proposed to reduce ethical risks.

•Consequences: The consequences are the final results of implementing the strategies and realising technology acceptance. The model shows that digital development improves efficiency and transparency; technology acceptance is introduced as a factor that reduces risk and increases investor participation particularly, an increase in women's participation to about 35% is predicted; and one of the most important consequences is the provision of a generalisable model for similar markets. Figure 4 presents the paradigm model of the study.

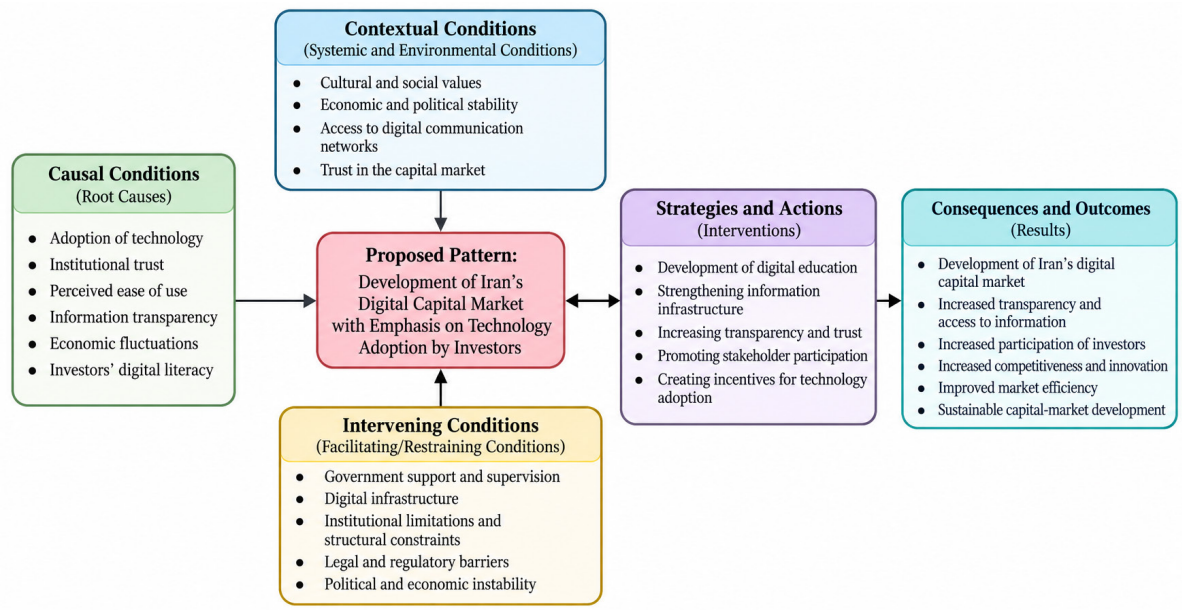


Figure 4: The paradigm model (Strauss & Corbin, 2015)

Quantitative findings and structural-model testing

In the quantitative phase, the relationships among the constructs of the proposed model were tested using PLS-SEM. The main aim was to examine the effect of the key variables on "technology acceptance by investors" and, ultimately, on the "digital development of the stock market." The results of the hypothesis tests are shown in Table 6. The largest effect belongs to trust (β = 0.41), which shows that, in the Iraq Stock Exchange, technology acceptance is an institutional–psychological rather than a merely technological phenomenon. In the structural model, the coefficient of determination for the dependent variable "technology acceptance" is $R^2 = 0.62$, indicating that 62% of the variance in

technology acceptance is explained by the model variables a strong and acceptable value in social-science and management studies.

Table 6: Results of the hypothesis tests.

Relationship	β coefficient	Result
Trust → technology acceptance	0.41	Significant and positive
Perceived usefulness → technology acceptance	0.35	Significant and positive
Ease of use → technology acceptance	0.28	Significant and positive
Post-war cultural factors → technology acceptance	−0.22	Significant and negative

Model fit. The fit indices were within the acceptable range: CFI = 0.91 and RMSEA = 0.07, indicating that the proposed model fits the empirical data well. Trust is the strongest predictor of technology acceptance, showing that in emerging markets the "institutional–psychological" factor dominates the technological ones; investors accept digital technologies when they regard them as directly effective in increasing profit and trading efficiency (perceived usefulness); ease of use, although weaker than trust and usefulness, still has a significant role; and the negative effect of post-war cultural factors shows that historical distrust, insecure economic experiences and a traditional social structure can slow the pace of digital transformation.

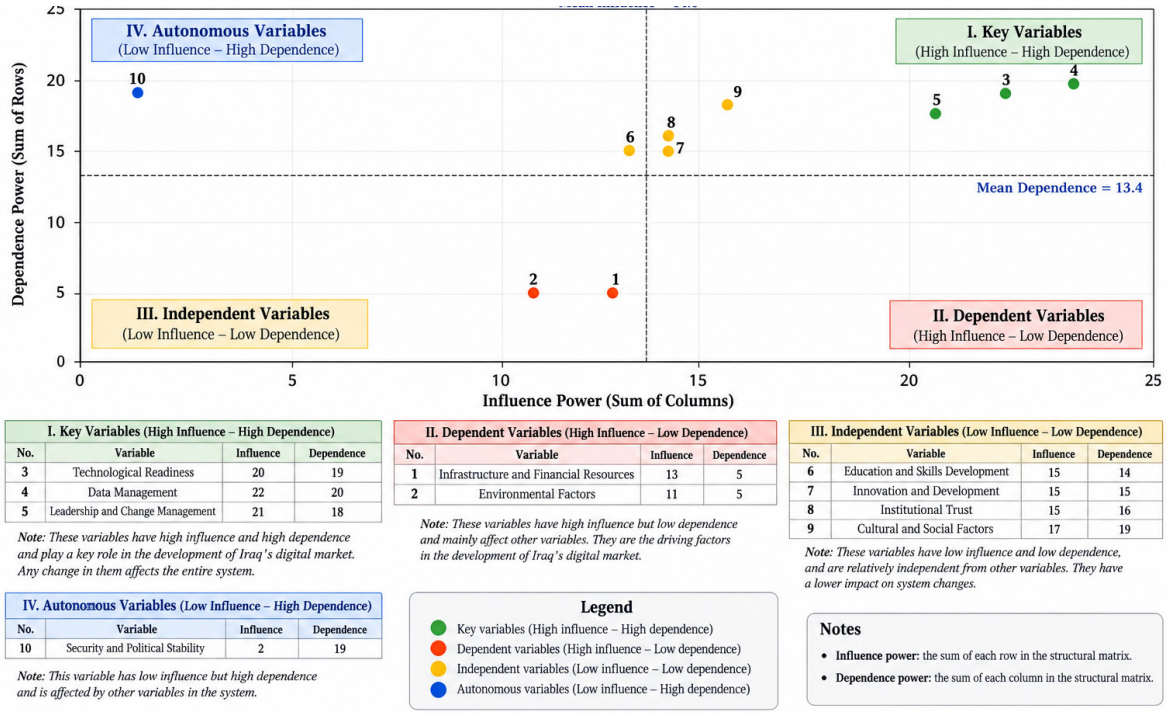
MICMAC-analysis results

The results showed that the variables of trust, digital education and institutional infrastructure fall within the group of driving factors, whereas market performance, innovation and sustainability fall mostly within the dependent factors. The variables "data management," "leadership and change management," "inter-channel coordination" and "trust in AI models" have both high driving power and high dependence and fall within the linkage variables; owing to their simultaneous influence and dependence, they play a key role in the stability and development of the digital model of the stock market. "Performance results" and "innovation and sustainability" fall within the dependent variables, indicating that they are affected by changes in the other components rather than affecting them. "Organizational structure" and "environmental factors," with low dependence, fall within the independent variables and can be regarded by policymakers as the primary drivers of the digital development of the stock market. Figure 5 shows the influence–dependence map.

Accordingly, the success of the digital-development programmes of the Iraq Stock Exchange depends above all on the effective management of the linkage variables, since any change in these factors can have wide chain effects on the other components of the system and, ultimately, on the performance and sustainability outcomes of the capital market.

RESULTS AND CONCLUSION

The present research aimed to present a digital-development model for the stock market with an emphasis on technology acceptance by investors, in the context of the Iraq Stock Exchange. The results showed that the digital development of this market is not merely a function of deploying technological tools but is affected by a set of behavioural, institutional, cultural, educational and legal factors. In the qualitative part, on the basis of open, axial and selective coding and using the Strauss–Corbin paradigm model, 153 initial concepts were organised into 10 main categories, and finally the three-axis model of the study—strengthening institutional and cultural trust, localized education and digital-literacy improvement, and legal–ethical support together with multi-stakeholder cooperation was extracted. In the quantitative part, the model had a good fit and the relationships among the main variables were significantly confirmed. In partic-



I. Key Variables (High Influence – High Dependence)

No.	Variable	Influence	Dependence
3	Technological Readiness	20	19
4	Data Management	22	20
5	Leadership and Change Management	21	18

Note: These variables have high influence and high dependence and play a key role in the development of Iraq's digital market. Any change in them affects the entire system.

II. Dependent Variables (High Influence – Low Dependence)

No.	Variable	Influence	Dependence
1	Infrastructure and Financial Resources	13	5
2	Environmental Factors	11	5

Note: These variables have high influence but low dependence and mainly affect other variables. They are the driving factors in the development of Iraq's digital market.

III. Independent Variables (Low Influence – Low Dependence)

No.	Variable	Influence	Dependence
6	Education and Skills Development	15	14
7	Innovation and Development	15	15
8	Institutional Trust	15	16
9	Cultural and Social Factors	17	19

Note: These variables have low influence and low dependence, and are relatively independent from other variables. They have a lower impact on system changes.

IV. Autonomous Variables (Low Influence – High Dependence)

No.	Variable	Influence	Dependence
10	Security and Political Stability	2	19

Note: This variable has low influence but high dependence and is affected by other variables in the system.

Legend

- Key variables (High influence – High dependence)
- Dependent variables (High influence – Low dependence)
- Independent variables (Low influence – Low dependence)
- Autonomous variables (Low influence – High dependence)

Notes

- **Influence power:** the sum of each row in the structural matrix.
- **Dependence power:** the sum of each column in the structural matrix.

Figure 5: The MICMAC influence–dependence map of the digital-development variables (mean driving power = 13.6).

ular, the negative effect of distrust on investors' behavioural intention to use digital technologies shows that, even if the technical infrastructure is developed, the digital-transformation process of the capital market will face a serious barrier without building public and institutional trust. This finding is consistent with the logic of Davis's TAM and the UTAUT model of Venkatesh et al. (Davis, 1989) (Venkatesh et al., 2003), yet it goes a step further and shows that, in transition markets, institutional trust must be regarded as one of the core elements of technology-acceptance models. The findings are also consistent with the views of Strauss and Corbin on the context-bound analysis of social phenomena, since the results showed that the digital development of the Iraq Stock Exchange does not occur in a vacuum but acquires meaning within conditions such as cultural and historical barriers, structural constraints, the level of society's digital literacy, ethical and social challenges, and the quality of institutional and regulatory support. In the same vein, the reports of the World Bank (World Bank, 2023) and the Iraq Securities Commission have emphasised the need to reform institutional infrastructure, improve digital governance and enhance transparency in the region's financial markets. The findings are also aligned with the results of Al-Hashedi and Magalingam (Al-Hashedi & Magalingam, 2021) and Al-Sharif et al. (Al-Sharif et al., 2019) on the role of trust, culture and regulation in the acceptance of digital financial services in Arab societies.

Practical recommendations

Strengthen institutional trust and information transparency: the capital-market regulator and brokers should increase investor trust by improving information transparency, accountability and the security of trading systems, since trust was

identified as the key mediating variable in technology acceptance.

Design and implement localized financial–digital-literacy programmes: educational programmes suited to the cultural and social characteristics of Iraqi investors should be designed to increase the skill of using digital trading platforms, consistent with the GSMA (2020) recommendations on digital inclusion (GSMA, 2020).

Develop legal and ethical frameworks for the digital capital market: clear regulations on data privacy, cyber-security, platform accountability and investor rights should be formulated, drawing on Floridi's views on digital ethics (Floridi, 2019).

Strengthen multi-stakeholder cooperation: cooperation among the exchange, regulators, fintech companies, universities and the media can facilitate the technology-acceptance process.

Attend to under-served groups and inclusive participation: digital-development policies should be designed so that under-served groups, and women in particular, also benefit from digital financial services, given the study's finding on the potential to raise women's participation.

Like any research, this study faced limitations. First, the spatial domain was confined to the Iraq Stock Exchange; although this increased contextual precision, the generalisation of the results to other capital markets of the region should be done with caution, since institutional, cultural and legal differences among countries can affect technology acceptance. Second, owing to the high dynamism of the technology and regulatory environment, some findings may require re-testing in later periods. Third, some of the extracted categories such as cultural and historical barriers and the level of public trust—are deep and multi-layered and are difficult to measure fully with common quantitative tools. Fourth, access to integrated, up-to-date and transparent market data is not always easy in transition financial markets, which can affect the analysis of some institutional and performance dimensions. Accordingly, future research is recommended to: test the proposed model in other Arab countries and regional financial markets (such as Jordan, Egypt or the Persian Gulf states) to examine its generalisability; introduce new mediating and moderating variables (such as perceived risk, cyber-security, user experience, trust in e-government, gender, age and investment experience) into the model, which would also extend the models of Davis and Venkatesh; conduct longitudinal studies to examine how trust, digital literacy and investors' behavioural intention change over time; and separately examine the role of digital–financial education among women, young people, novice investors and under-served regions. Overall, the study showed that the digital development of the Iraq Stock Exchange is a multidimensional phenomenon based on the interaction of technology, trust, culture, education and regulation, so that any policymaking for the digital transformation of the capital market must move away from a purely technical approach and place the institutional and social dimensions of technology acceptance at the centre of attention.

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HOW TO CITE THIS ARTICLE

Jamal Ahmed,J , Seifollahi Anar,N , Zarei,GH and Bashokouh Ajirlou,M . (2025). A Digital-Development Model for the Stock Market with Emphasis on Technology Acceptance by Investors: The Case of the Iraq Stock Exchange. International Journal of Urban Management and Energy Sustainability, ( ), e738241

DOI: 10.22034/ijumes.2026.2091582.1375