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Fintech's Impact on the Digital Transformation of the Qatar Insurance Sector: Opportunities and Challenges

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ABSTRACT

This study provides a comprehensive analysis of Qatar's digital insurance industry using a conceptual framework based on established theories. The study aimed to assess different challenges and opportunities, including the regulatory environment, market dynamics, competitive strategies, and digital payment and financial inclusion in Qatar, and also fill a critical gap in the literature. The study uses a positivist perspective and deductive methodology to explore Qatar's digital insurance sector, revealing diverse demographics and strong correlations between variables like regulations and competitive rivalry, highlighting the positive attitude towards digitization in the industry. The regression model, elucidating 61.7% of the variance, accentuates the pivotal role of "Competitive Rivalry and Enhanced Digital Insurance Sector." Nevertheless, non-significant contributions from "Security Challenges for Digitization" and "Market Competitiveness" beckon further exploration. The study concludes with insightful recommendations for transparency enhancements, digital tool exploration, and addressing new entrant barriers, offering invaluable guidance to industry stakeholders navigating Qatar's dynamic digital insurance landscape.

INTRODUCTION

The worldwide Fintech environment has seen remarkable growth, with investments reaching \$34.5 billion by the end of 2019 (Skoric *et al.*, 2022). However, the Middle East and North Africa (MENA) area, including Qatar, fell behind, accounting for less than 1% of worldwide Fintech investments (Opportunities await: How InsurTech is reshaping insurance, 2016). The COVID-19 epidemic expedited global digital transformations, providing the stage for significant growth in the MENA area (Ibrahim *et al.*, 2020). Particularly because of the National FinTech Strategy and the creation of the Qatar FinTech Hub (QFTH), Qatar, has become a prominent participant in promoting Fintech innovation (Hub, 2021). The country's proactive regulatory strategy, demonstrated by the FinTech Office and the Qatar Central Bank (QCB), establishes it as a possible leader in Islamic FinTech (Ramiah *et al.*, 2023). By introducing the National FinTech Strategy in 2019 and establishing the Qatar FinTech Hub (QFTH) in 2020 (Villegas-Mateos, 2022), Qatar has made significant strides towards creating a strong FinTech ecosystem (Alkhazaleh, 2021; Allen, 2021). Qatar's potential to flourish in Islamic Fintech by harnessing its Islamic financial experience is significant (AlNasr, 2022; Cherqaoui, 2022). Digital payment solutions are made possible by Qatar's expanding e-commerce sector, and digital wallets are becoming vital instruments for advancing financial inclusion as well as financial transactions (Dahdal *et al.*, 2020).

Concurrently, the COVID-19 pandemic has sped up the digital revolution in Qatar's insurance industry. Conventional insurance structures are changing as a

result of the move towards customer-centric strategies and online distribution channels (Feghali *et al.*, 2022). Digital innovations such as smart contracts and telematics devices are transforming claims processing, product creation, and risk assessment (Łyskawa *et al.*, 2019). The insurance industry in Qatar is expected to develop at a 4.7% compound annual growth rate (CAGR) and reach \$1.9 billion by 2026 (Al Malkawie, 2020). As part of this progression, Qatar Insurance Company (QIC) has introduced Insurtech platforms such as Anoud+. The Qatar Financial Centre (QFC), Qatar FinTech Hub (QFTH), and QIC are working together to make it easier for Insurtech startups to enter the Qatari market (El-Masri *et al.*, 2019).

The COVID-19 epidemic has driven insurtech businesses to take the lead in the global insurance market, which is exceeded \$7 trillion in 2022 and expected to reach 9.91 trillion by 2028 (Njegomir & Demko-Rihter, 2023; Statista &, 2023; Tripathy). Fintech has emerged as a viable alternative for small and medium-sized enterprises (SMEs) that are facing financial difficulties. Despite the MENA region's lack of Fintech investment, Qatar's National FinTech Strategy portrays the country as an innovator, laying the groundwork for digital transformation (Eckert & Osterrieder, 2020). Even though the country's Fintech ecosystem is still in its early stage, it has a lot of room to develop if infrastructure and regulations are strengthened (Khan *et al.*, 2023).

Understanding the potential and difficulties that come with this digital transition is essential as Fintech and digital insurance continue to grow in popularity in Qatar (Hujaimi *et al.*, 2022). Addressing this gap in the

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existing research, this study presented a synthesized conceptual framework that integrates relevant ideas to comprehensively analyze the possibilities and challenges in the digital insurance business. The rationale lies in the necessity for a systematic, theoretical investigation to guide the development of the insurance industry through digitalization in the context of Fintech (Eling & Lehmann, 2018).

Furthermore, this study aimed to thoroughly analyse the benefits and difficulties associated with the Fintech landscape's digitization of the insurance sector, with a particular emphasis on Qatar. The study used a grounded conceptual framework to examine several aspects, such as the adoption of technology, legal frameworks, cybersecurity nuances, market dynamics, and the development of digital payment systems. The main objective is to give policymakers, academics, and stakeholders an enlightened perspective on the changing environment of digital insurance. Through this, the study has made a significant contribution to the constantly changing Fintech and digital insurance sector. Given that the insurance business growth in Qatar, it is critical to comprehend the prospects and obstacles in this field. Policymakers may use the results to develop regulatory frameworks, industry participants can use the insights to make strategic decisions, and scholars can add to the academic discussion on digitalization's disruptive potential in the insurance business.

LITERATURE REVIEW

Global Fintech Acceleration and Qatar

The worldwide fintech business has grown at an exponential rate over the last decade, with investments reaching \$34.5 billion by the end of 2019. The Middle East and North Africa (MENA) area, on the other hand, accounted for less than 1% of worldwide investments (Pant, 2020). The COVID-19 epidemic has, therefore, expedited the global financial institutions' digital transition and laid the groundwork for digital growth in the Middle East and North Africa (MENA). The MENA area, which includes Qatar, has seen a notable shift towards online commercial activity and contactless payments throughout the COVID and post-COVID periods (Abidi *et al.*, 2022). Financial regulators in developing fintech countries, such as Qatar, have taken a proactive approach to fintech regulation, assuring consumer safety and financial system stability (Sadigov *et al.*, 2020). In addition, the growing dependence on digital platforms has sparked worries about cyber security threats (Lallie *et al.*, 2021), driving up cyber security expenditures and necessitating coordinated plans to drive digital transformation aggressively (Wilson, 2020).

Furthermore, Qatar has advanced significantly in creating a strong fintech environment. The National FinTech Strategy of Qatar was released in December 2019 and was based on the work of the National FinTech Taskforce that was formed in 2017 (Hub, 2021). Through support from the Qatar Central Bank (QCB), the plan calls for

the creation of the Qatar FinTech Hub (QFTH) in April 2020. Applications for QFTH's incubator and accelerator programs come from all around the world. Additionally, the QCB formed its FinTech Office, whose duties include enacting rules and carrying out fintech goals (Khan *et al.*, 2023).

Consequently, Qatar has an intriguing opportunity to harness its Islamic financial knowledge and gain a competitive advantage in Islamic technology. Opportunities for Qatar to flourish in the Islamic fintech sector include shariah-compliant venture capital investments and Islamic RegTech. Qatar might encourage Islamic venture capital investments in fintechs by providing incentives and collaborating with Islamic investment banks (Muneeza & Mustapha, 2021). Additionally, alternative lenders and Internet banks can reach the SME sector by offering specialized financial facilities and affordable small company loans (Gopal & Schnabl, 2022).

In addition, the expanding e-commerce market in Qatar presents opportunities for providers of payment solutions to meet the growing need for contactless and digital payment gateways (Haron, 2016). With the ability to conduct banking, make payments, and send money without requiring a traditional bank account, digital wallets can also benefit low-income workers who are underprivileged or haven't financed at all (Hassan & Shukur, 2019). Nonetheless, sustained endeavors in regulatory structures, cybersecurity protocols, and global partnerships will be imperative for the expeditious advancement of Fintech in Qatar.

Digitalization in the Insurance Sector

The COVID-19 crisis has catapulted the insurance sector into a critical stage of digital transformation, elevating digitization from a strategic choice to an absolute must. The insurance industry is seeing a transformation in its conventional business structures and value chain due to digitization (Cherqaoui, 2021). Prior to the pandemic, the shift to digital technology was underway, with an emphasis on online distribution channels and customer-centric strategies. Advanced digital technologies, however, aim to enhance market dynamics and competitiveness through openness, comparability, reduced transaction costs, and the expanded reach of online platforms, going beyond efficiency advantages (Aidrous *et al.*, 2021). M. Eling and M. Lehmann assert that the effects of digitization may be seen at every stage of the value chain, from sales and customer service to claim reporting (Eling & Lehmann, 2018).

Furthermore, online platforms and aggregator tools have changed the power balance, allowing customers to access information and evaluate items independently. Conversely, risk assessment, product innovation, and claims processing have seen substantial changes as a result of digital technologies, including telematics devices, big data analytics, and smart contracts (Doss, 2020). The obstacles associated with the insurance sector's digitalization include

the requirement for large-scale, unstructured dataset analysis, ethical and regulatory issues surrounding the use of big data, and the introduction of new and current insurance products (Cappiello & Cappiello, 2018; Eckert & Osterrieder, 2020). The move towards on-demand insurance markets, cyber risk insurance, and telematics insurance is indicative of how digitalization can change industries completely. To guarantee sustainable growth in the digital age, issues with data privacy, cybersecurity, and the moral use of consumer information must be resolved (Bohnsack *et al.*, 2022).

Swiss Re's World Insurance Report projects that by the end of 2022, insurance premiums reached \$8.89 trillion globally, offering a substantial opportunity for insurance companies operating around the globe (Bohnsack *et al.*, 2022). The worldwide COVID-19 epidemic has expedited insurers' digital transition, elevating Insurtech firms to the fore. The insurance market in Qatar is projected to develop at a compound annual growth rate (CAGR) of 4.7% from 2021 to 2026 when it is expected to reach \$1.9 billion (Eckert & Osterrieder, 2020). In an effort to improve operational effectiveness, Qatar Insurance Company (QIC) has also created Insurtech platforms and subsidiaries. The Anoud+ platform is provided by Anoud Technologies, a QIC company that provides IT services with headquarters in QFC. It includes a variety of features, including reinsurance administration and customer relationship management. QIC's endeavors, such as organizing an Insurtech Hackathon and introducing a comprehensive online platform for insurance policies, exhibit a dedication to promoting creativity within the Insurtech domain (Sharar & Earley, 2018).

Furthermore, to facilitate Insurtech businesses' entry into the Qatari market, The Qatar Financial Centre (QFC), Qatar Fintech Hub (QFTH), and QIC work together. These organizations organize seminars and activities that highlight Insurtech's potential in Qatar's finance scene. Qatar has substantial development potential for Insurtech businesses, given its 1% insurance penetration rate. This may be attributed to many factors, such as rising consumer awareness, regulatory laws that facilitate growth, and government initiatives delineated in the National Fintech Strategy (Lynn *et al.*, 2019). The global insurance landscape is changing due to the digitalization of the insurance business, with Insurtech being a key player in this change. Driven by factors including internet penetration, technological acceptance, and government assistance, Qatar's emerging Insurtech business is primed for tremendous development. To guarantee the sustainable expansion of Insurtech in Qatar and throughout the world, the critical evaluation highlights the necessity to address issues with data privacy, cybersecurity, and ethical considerations (Xu & Zweifel, 2020).

Use-Cases and Challenges of Digitization in the Insurance Sector

The insurance sector is currently experiencing a digital transition that presents a range of possibilities and

difficulties for industry participants. The insurance industry is becoming more digitally connected, but there are drawbacks as well (Cappiello & Cappiello, 2018; Svetlana, 2016). For example, there is a need to integrate big data and artificial intelligence (AI), two important technical enablers. Order to transform consumer relationships, boost operational effectiveness, and change the competitive environment, it also entails digging into important numerical data. Its capabilities for gathering, processing, and evaluating vast volumes of client data highlight big data's importance for insurers (Nguyen *et al.*, 2023).

The value of capital invested in insurance tech startups, for example, increased significantly globally throughout 2012–2017, from \$326 million to \$2.134 billion, and the number of acquisitions increased from 86 to 247 (Statista, 2019b; Nicoletti & Nicoletti, 2021). According to Eling and Lehmann (2018), big data analytics improves insurers' comprehension of their clientele by offering insightful information gleaned from semi-structured and unstructured data, including social media. This capacity is essential for producing insights and enhancing decision-making procedures (Eling & Lehmann, 2018).

Moreover, the utilization of artificial intelligence, including machine learning and deep learning, is crucial in obtaining advantages from large and customer data sets. Digitalization of insurance is receiving significant attention from insurance businesses, as seen by the rapid rise in global expenditures on machine learning algorithms and their iterative training procedures (Łyskawa *et al.*, 2019). According to Brenner (2019), artificial intelligence (AI) gives insurers tools for predictive analytics, such as Extreme Gradient Boosting approaches and helps them better segment their consumer base (Brenner *et al.*, 2022). Consequently, insurers employ AI and big data for an array of applications to improve client experiences and optimize workflows. Authorization procedures are made simpler by facial recognition, which improves client satisfaction in both sales and service. By automatically analyzing photographs, claims management uses image recognition to speed up operations. Insurance companies may evaluate consumer emotions during interactions by using convolutional neural networks for emotion identification, which leads to increased customer engagement (Pomazan *et al.*, 2023). However, identifying a single metric for gauging digitalization in insurance firms remains a difficulty, even in light of the sharp increase in worldwide expenditures in this area. Bohnert, Fritzsche, and Gregor (2019) state that insurance firms are investigating new avenues in information technology, including drones, satellites, telematics, voice biometrics, big data analytics, omni-channels, and the Internet of Things (Bohnert *et al.*, 2019).

Both revolutionary possibilities and difficulties are brought about by the insurance industry's overall digitalization, which is fueled by big data and AI. The use cases that were presented highlight the potential advantages of digitalization, and these include client

segmentation, Robo-advisory, and enhanced consumer experiences (Eckert & Osterrieder, 2020). For digital technologies to be used in the insurance industry in a way that is both sustainable and successful, issues like the absence of standardized procedures must be addressed (Bandyopadhyay & Sen, 2011). The data presented suggests that there is a strong and increasing emphasis on the transformative potential of digital technology within the insurance business. Global patterns in insurance digitization are noteworthy (Hanafizadeh & Amin, 2023).

Literature Gap

The presented literature analysis provided an in-depth analysis of global fintech and insurance digitalization trends, with an emphasis on Qatar (Göll & Zwieters, 2018). The lack of a synthesized conceptual framework that incorporates pertinent theories to methodically analyze the potential and difficulties posed in the digital insurance sector, however, creates a significant vacuum in the literature. Closing this gap is essential to a systematic, theoretical investigation of the topic.

Conceptual Framework

The study develops an integrated conceptual model drawing from several established theories to both examine challenges and opportunities within the emerging digital insurance sector as well as guide survey design. However, an overreliance on conceptual abstraction risks limiting the model's practical relevance and ability to generate actionable insights (Johnson *et al.*, 2019). The study applies Rogers' Diffusion of Innovations theory and the Technology Acceptance Model to analyze customer and insurer adoption of digital technologies. While these provide a foundational understanding of adoption drivers, they may only partially capture disruption in immature industries (Ching *et al.*, 2020).

Furthermore, Porter's Five Forces is used to assess competitive dynamics but could overlook issues in rapidly evolving digital landscapes (Ching *et al.*, 2020). The Resource-Based View helps identify capabilities for competitive advantage but also struggles with dynamic markets (Zahra, 2021). Regulatory compliance theories and the TOE framework aim to understand compliance difficulties and cybersecurity measures' organizational/environmental aspects (Zahra, 2021). However, more than these may be needed to anticipate the regulation of novel technologies or future threats.

Lastly, financial inclusion and ethical decision-making theories also inform related opportunities and challenges. While useful baseline perspectives, such established theories alone need to be more incremental to guide disruption. Overall, leveraging diverse conceptual frameworks offers a structured starting point. However, overreliance on established theories could constrain the model's capacity to explore truly disruptive scenarios and generate pragmatic strategy recommendations for navigating ongoing transformation in this complex, uncertain industry domain (Zahra, 2021).

Research Design

The study adopts a quantitative research design to investigate the opportunities and challenges in developing the insurance industry through digitalization in the context of Fintech. A positivist philosophical perspective guides the research, utilizing a deductive approach for hypothesis testing and drawing precise conclusions (Casula *et al.*, 2021). The chosen quantitative methodology ensures objectivity and facilitates the collection of extensive data from a large population (Casula *et al.*, 2021).

Data Collection

Primary data is collected through the distribution of structured survey questionnaires among digital insurance professionals in Qatar. The survey employs a 5-point Likert scale, ranging from "Strongly Agree" to "Strongly Disagree," to gauge perspectives on the opportunities and challenges associated with Fintech and digitalization in the insurance sector (Kimberly *et al.*, 2022). The survey methodology is cost-effective, enabling the collection of diverse opinions from a broad population, thereby minimizing bias in the outcomes (Nayak & Narayan, 2019).

Sampling and Analysis

A purposive sampling technique, a non-probability approach, is employed to select participants with expertise in digital insurance and Fintech within the Qatari context (Tohang *et al.*, 2021). The sample comprises 264 digital insurance professionals, out of which 250 participants' responses were selected for final analysis, ensuring participants possess relevant knowledge and competence related to the study's subject.

SPSS software is utilized for statistical analysis, encompassing descriptive statistics, correlation analysis, and regression analysis to explore variable relationships and test hypotheses (Manzoor *et al.*, 2019). Ethical considerations, including confidentiality and informed consent, are strictly followed throughout the research process (KANG & Hwang, 2021). The final dataset ensures a robust and representative sample for drawing meaningful conclusions regarding the impact of Fintech on the digital insurance landscape in Qatar.

RESULTS AND DISCUSSION

Results

Demographics

The results are illustrated in Figure 1. shows the gender distribution indicates a predominantly male representation (70.5%), while females make up 29.1%. In terms of professional experience, the majority fall within the 3-5 years category (43.8%), followed by 6-7 years (23.5%), 1-2 years (19.1%), and more than 8 years (13.1%). These demographics highlight a diverse range of experience levels within the digital insurance industry, providing valuable insights from professionals with varying tenures in Qatar's Insurance sector.

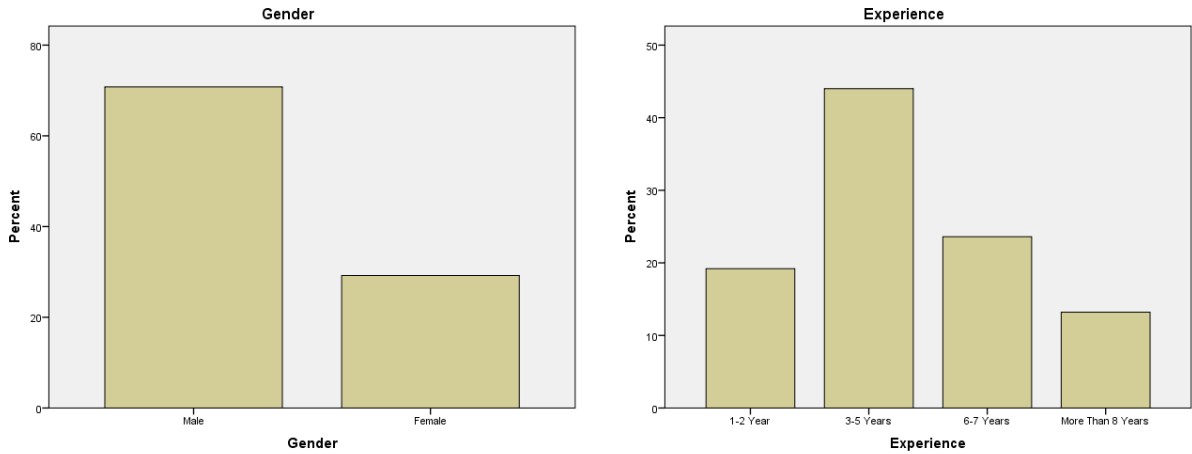


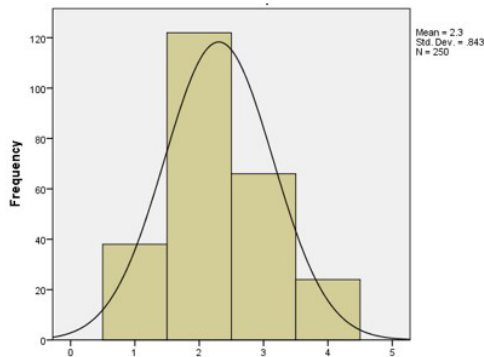
Figure 1: Demographics

Compliance and Digital Integration in Qatar's Insurance Sector

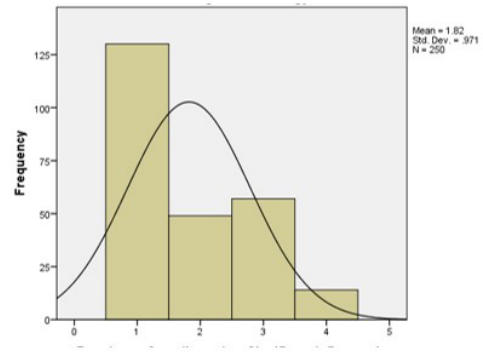
Figure 2. Illustrated survey responses regarding regulatory compliance's role in the growth of the digital insurance industry in Qatar, a noteworthy 64% of participants agree or strongly agree that insurance companies adhere to digital practices as per regulatory frameworks. Moreover, a substantial 71.6% believe that regulatory compliance significantly influences decision-

making processes for digital technology initiatives in the industry. Additionally, 74.4% of respondents acknowledge a good understanding of digital regulations imposed by authorities among insurance professionals, while 62.8% perceive that regulatory compliance enhances the credibility of digital insurance services. These findings emphasize the pivotal role of regulatory frameworks in shaping and enhancing digital practices within Qatar's insurance landscape.

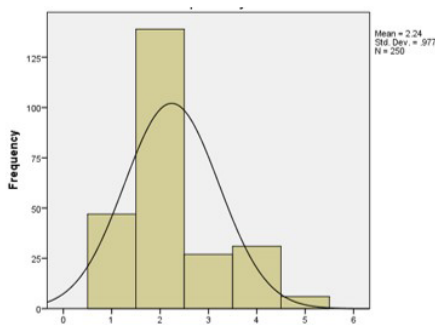
Adherence to Regulatory Frameworks in Qatar's Insurance Companies



Influence of Regulatory Compliance on Decision-Making in Digital Insurance



Industry Understanding of Digital Regulations in Qatar's Insurance Sector



Perception of Regulatory Compliance Impact on Credibility in Digital Insurance Services

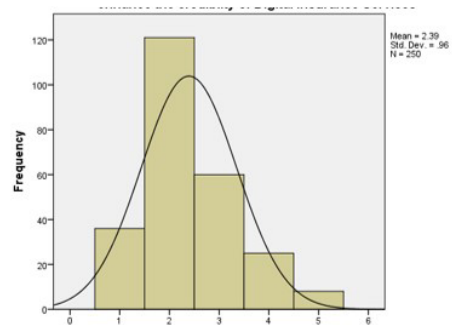


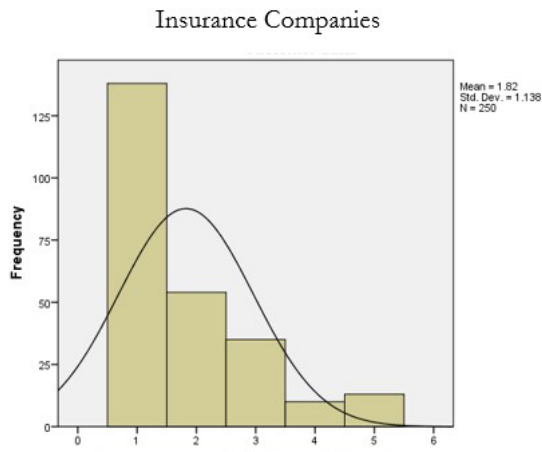
Figure 2: Compliance and Digital Integration

Building Trust through Data Security and Ethical Practices in Qatar's Insurance Industry

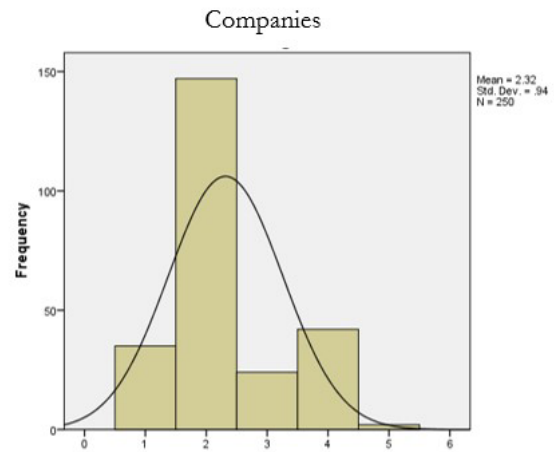
The results are presented in Figure 3. Showing the participant's perceptions on data security and ethical practices, it is evident that a majority (76.8%) strongly agree or agree that insurance companies in Qatar prioritize robust cybersecurity measures. However, concerns arise regarding transparency, with only 14% strongly agreeing that there is transparency in how customer data is handled

and 72.8% agreeing. Moreover, 74% of participants emphasize a strong industry emphasis on ethical considerations in digital practices, while 77.2% believe that ethical practices positively impact customer trust in digital insurance. These results highlight the imperative need for enhancing transparency in data handling processes to foster trust, even as ethical considerations are acknowledged as pivotal in building trust in Qatar's digital insurance landscape.

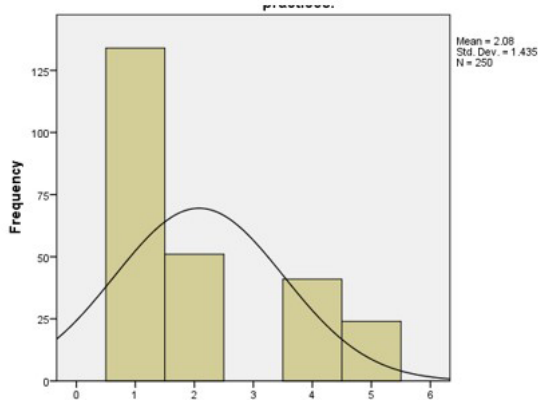
Priority of Robust Cybersecurity Measures in Qatar's Insurance Companies



Transparency in Customer Data Handling by Insurance Companies



Emphasis on Ethical Considerations in the Digital Practices of the Insurance Industry



Perception of Ethical Practices Impact on Customer Trust in Digital Insurance

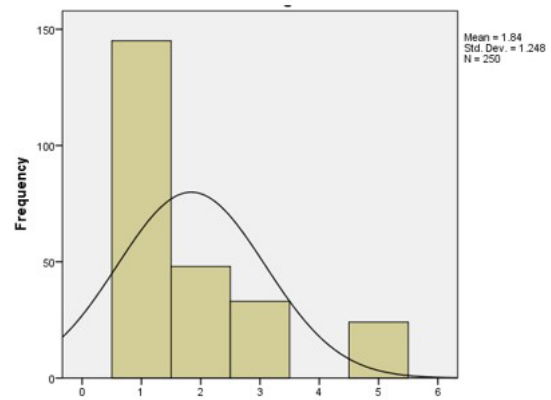


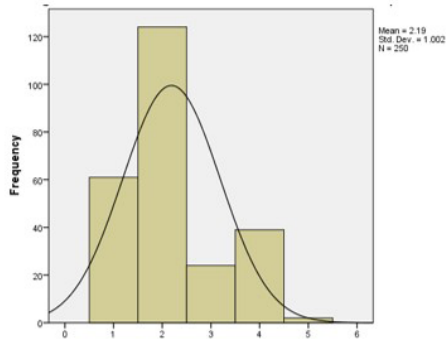
Figure 3: Data Security and Ethical Practices in Qatar's Insurance Industry

Market Dynamics and Digital Competitiveness

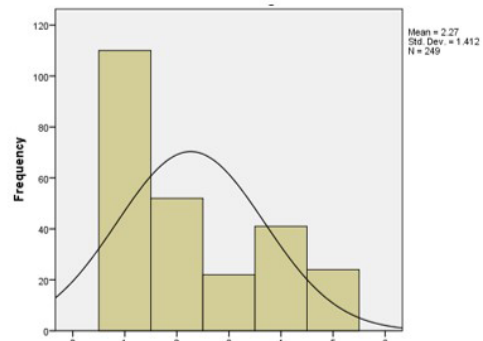
Figure 4. Illustrated the impact of market dynamics and competitiveness in Qatar's insurance sector, which reveals a positive perception toward digitalization. A significant portion (74%) believe that digitalization enhances market competitiveness, emphasizing a transformative influence. Furthermore, 65.1% strongly agree or agree that insurance companies actively leverage digital technologies for a competitive edge, showcasing an industry-wide commitment to digital innovation. Participants (58%)

strongly agree that market dynamics have fundamentally changed due to digital transformation, highlighting the profound impact on the insurance landscape. However, respondents express some reservations, with 90.8% acknowledging the need for further exploration of how digital tools enable the delivery of unique and innovative services. These findings underline the industry's evolving nature and the ongoing quest for innovative digital solutions.

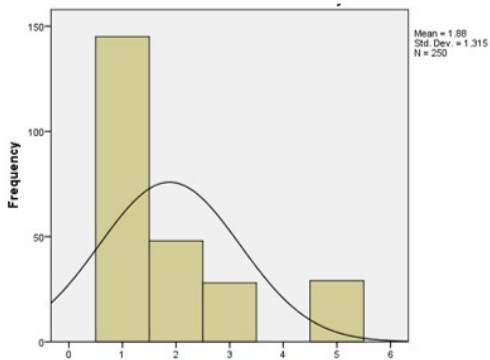
Contribution of Digitalization to Increased Competitiveness in the Insurance Market



Leveraging Digital Technologies for Competitive Advantage in Qatar's Insurance Sector



Significant Changes in Market Dynamics Due to Digital Transformation



Digital Tools Facilitating Unique and Innovative Services in the Insurance Industry

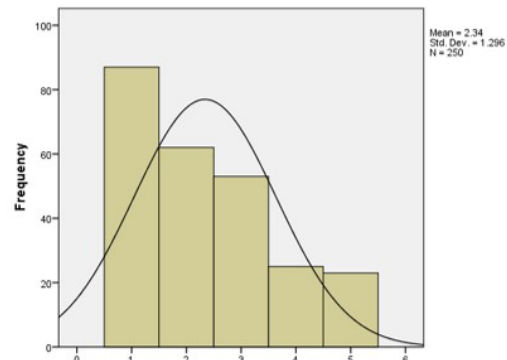


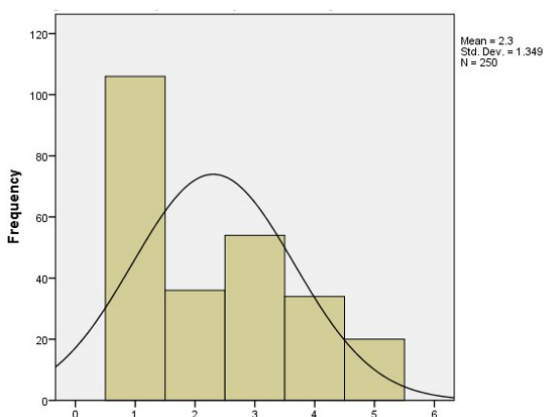
Figure 4: Market Dynamics and Digital Competitiveness

Navigating Competitive Realities in Qatar's Insurance Sphere

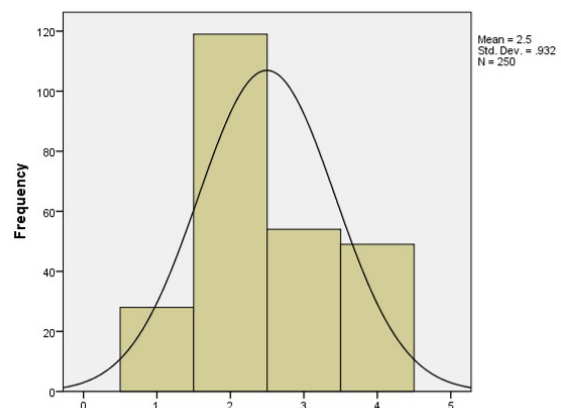
Figure 5 shows insight into participant perceptions on the impact of digital advancement and increasing competitive rivalry in Qatar's insurance sector and unveils insights into industry perceptions. A significant majority (56.8%) acknowledge that digitalization has a substantial impact on competitive rivalry, reflecting an awareness of the transformative effects of digital technologies. Respondents (58.8%) believe that digital technologies

influence the bargaining power of both customers and suppliers, indicating an intricate relationship with stakeholders. Additionally, 67.2% recognize digital resources as contributors to a competitive advantage in the digital insurance market. However, there are reservations, with 88.8% neutrally or affirmatively agreeing that digital advancements pose barriers for new entrants. These results underscore the nuanced dynamics of digitalization, showcasing both its potential benefits and challenges in fostering competitive environments.

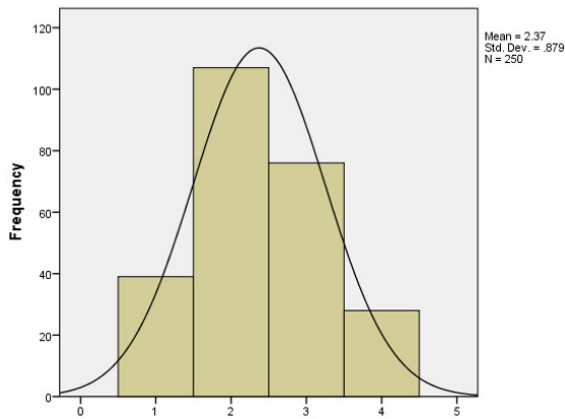
Intensity of Digitalization-Driven Competitive Rivalry Among Qatar's Insurance Companies



Impact of Digital Technologies on Bargaining Power in the Digital Insurance Market



Perceived Degree of Digital Advancements as Barriers to Entry in Qatar's Digital Insurance Sector



Role of Digital Resources in Contributing to a Competitive Advantage in Qatar's Digital Insurance Landscape

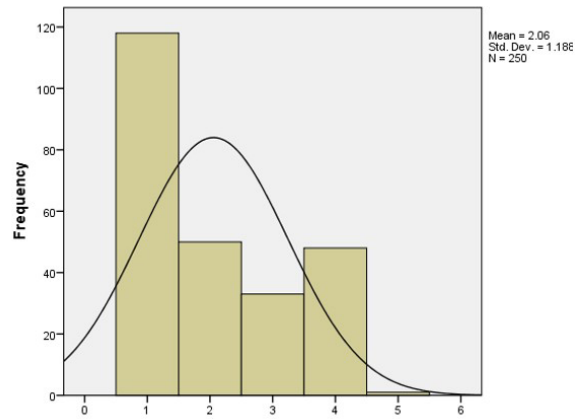


Figure 5: Navigating Competitive Realities in Qatar’s Insurance Sphere

Co-Relation Analysis

The correlation analysis reveals strong and significant relationships among key variables in Qatar’s digital insurance landscape. Challenges and adoption of digitization exhibit positive correlations with the impact of regulatory frameworks ($r = 0.443, p < 0.01$) and competitive rivalry in the digital insurance sector ($r = 0.717, p < 0.01$). Notably, security challenges for

digitization are strongly correlated with challenges and adoption ($r = 0.516, p < 0.01$) and competitive rivalry ($r = 0.719, p < 0.01$). Furthermore, competitive rivalry shows a significant positive correlation with market competitiveness ($r = 0.602, p < 0.01$). These robust correlations underscore the interconnectedness and interdependence of factors influencing the digital insurance landscape in Qatar.

Table 1: Correlations

		Challenges and Adoption of Digitization	Impact of Regulatory Frameworks	Security Challenges For Digitization	Competitive Rivalry And Enhanced Digital Insurance Sector	Market Competitiveness
Challenges and Adoption of Digitization		1	.443**	.516**	.717**	.429**
		250	250	250	250	250
Impact of Regulatory Frameworks		.443**	1	.270**	.189**	.228**
	Sig. (2-tailed)	.000		.000	.003	.000
	N	250	250	250	250	250
Security Challenges For Digitization		.516**	.270**	1	.719**	.811**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	250	250	250	250	250
Competitive Rivalry And Enhanced Digital Insurance Sector	Pearson Correlation	.717**	.189**	.719**	1	.602**
	Sig. (2-tailed)	.000	.003	.000		.000
	N	250	250	250	250	250
Market Competitiveness	Pearson Correlation	.429**	.228**	.811**	.602**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	250	250	250	250	250

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

Model Fit

The model demonstrates a good fit, with a substantial R-square value of 0.617, indicating that approximately

61.7% of the variance in challenges and adoption of digitization is explained by the included predictors, as presented in Tables 2,3 and 4. The ANOVA results are

highly significant ($p < 0.001$), suggesting that the model is a meaningful improvement over the null model. The reliability statistics reveal a Cronbach's Alpha of 0.823,

indicating a high level of internal consistency among the 20 items, enhancing the overall reliability of the model.

Table 2: Reliability

Model	Variables Entered	Variables Removed	Method
1	Market Competitiveness, Impact of Regulatory Frameworks, Competitive Rivalry And Enhanced Digital Insurance Sector, Security Challenges For Digitizationb	.	Enter

a. Dependent Variable: Challenges and Adoption of Digitization

b. All requested variables entered.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.785 ^a	.617	.610	.448	.617	98.496	4	245	.000

a. Predictors: (Constant), Market Competitiveness, Impact of Regulatory Frameworks, Competitive Rivalry And Enhanced Digital Insurance Sector, Security Challenges For Digitization

Table 4: ANOVA^a

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	79.214	4	19.804	98.496	.000b
	Residual	49.260	245	.201		
	Total	128.474	249			

a. Dependent Variable: Challenges and Adoption of Digitization

b. Predictors: (Constant), Market Competitiveness, Impact of Regulatory Frameworks, Competitive Rivalry And Enhanced Digital Insurance Sector, Security Challenges For Digitization

Regression Analysis

The regression analysis is in Table 5. indicates that the model is statistically significant ($F(4, 245) = 98.496, p < 0.001$), suggesting that the included predictors collectively contribute to explaining the variance in challenges and adoption of digitization. Among the predictors, “Competitive Rivalry and Enhanced Digital Insurance Sector” has the most substantial impact ($Beta = 0.721, p <$

0.001), followed by “Impact of Regulatory Frameworks” ($Beta = 0.331, p < 0.001$). However, “Security Challenges for Digitization” and “Market Competitiveness” do not significantly contribute. The constant term is not significant ($p = 0.090$). Overall, the model underscores the importance of competitive dynamics and regulatory influence in shaping digitization challenges in the insurance sector.

Table 5: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.254	.149		-1.701	.090
	Impact of Regulatory Frameworks	.474	.059	.331	8.064	.000
	Security Challenges For Digitization	-.068	.073	-.074	-.942	.347
	Competitive Rivalry And Enhanced Digital Insurance Sector	.651	.051	.721	12.653	.000
	Market Competitiveness	-.023	.073	-.021	-.314	.754

a. Dependent Variable: Challenges_and_Adoption_of_Digitization

Discussion

The study's conceptual framework, grounded in established theories, provides a robust foundation for exploring the complexities of the digital insurance sector

in Qatar. Drawing on Technological Acceptance and Innovation Adoption Theories, the framework illuminates how customers and insurers embrace digital technology, emphasizing strategic innovation opportunities and

addressing resistance factors (Schilling, 2013). Regulatory Environment and Compliance variables are integrated to comprehend the impact of regulatory frameworks on industry practices, allowing insurers to conform to changes proactively (Grima *et al.*, 2020). Cybersecurity and Ethical Considerations, informed by the Technology, Organization, and Environment (TOE) framework, tackle data privacy and ethical digital behavior, which is essential for sustainable growth (Ullah *et al.*, 2021). Market Dynamics and Competitive Strategies are incorporated into the survey to analyze competitive dynamics and identify internal capabilities for a digital edge (Wang & Gao, 2021). This comprehensive assessment set enables us to empirically validate, enhance, or expand these theoretical underpinnings.

Furthermore, the study adopted a quantitative approach, aligning with a positivist paradigm and employing deductive reasoning as its research design. This method ensures objectivity and extensive data collection from digital insurance professionals in Qatar (Al-Qurashi, 2017). The study has utilized a diverse sample, enriching the study's insights with varying experience levels within Qatar's digital insurance industry (Maouchi *et al.*, 2022). The findings on compliance underscore the industry's adherence to digital practices and the pivotal role of regulatory frameworks in shaping digital practices (Maouchi *et al.*, 2022). Furthermore, examining data security and ethical practices, the majority recognize the industry's emphasis on robust cybersecurity measures is positive. However, concerns about transparency in customer data handling reveal a critical need for improvement. The positive correlation between ethical practices and customer trust underscores their interconnectedness, emphasizing the imperative for transparent data processes in fostering trust (Halim *et al.*, 2023).

The study findings also reflect that market dynamics and digital competitiveness reflect a positive industry outlook on digitalization, highlighting its transformative influence (Halim *et al.*, 2023). Acknowledging the need for further exploration indicates an industry aware of ongoing challenges and committed to innovative solutions; navigating competitive realities reveals industry awareness of digitalization's substantial impact on rivalry, bargaining power, and competitive advantage. However, concerns about barriers for new entrants signal a nuanced understanding of digital advancements' potential challenges (Nicoletti, 2020).

The positive correlations identified in the study between challenges and the adoption of digitization, the impact of regulatory frameworks, and competitive rivalry are consistent with Kimwaki's work, underscoring the intertwined dynamics in the digitalization landscape. These findings reinforce the idea that challenges in adopting digitization are not isolated but influenced by regulatory frameworks and the competitive environment (Kimwaki, 2023).

Ibrahim *et al.* (2021) suggest that stringent regulatory frameworks can both catalyze and hinder digital

adoption (Ibrahim & TrubyJon, 2021). The significant correlation between challenges and regulatory impact ($r = 0.443$, $p < 0.01$) suggests that navigating regulatory complexities is a substantial hurdle in the digitalization journey. This aligns with studies emphasizing the pivotal role of regulatory environments in shaping organizational practices during technological transitions (Knight & Wójcik, 2018; Park & Kim, 2020). However, the lack of significance for security challenges and market competitiveness in the regression analysis prompts further exploration. While security challenges may not have a direct impact on digitization challenges in the model, their real-world importance is well-documented (Kshetri, 2018). Future research should delve into the nuanced ways security concerns influence digitalization strategies.

Moreover, the non-significant contribution of market competitiveness in the model contradicts existing literature on the transformative impact of digital strategies on market dynamics (Ali *et al.*, 2023; Rodríguez-Espíndola *et al.*, 2022). This discrepancy necessitates a more nuanced investigation into the specific market conditions influencing the adoption of digital initiatives within the insurance sector. Critically assessing the findings, the positive correlation between challenges and adoption of digitization, impact of regulatory frameworks ($r = 0.443$, $p < 0.01$), and competitive rivalry ($r = 0.717$, $p < 0.01$) aligns with literature highlighting the interconnected nature of these factors in digitalization processes (Demeter *et al.*, 2023; Kumar & Bhatia, 2021). However, the lack of significance for security challenges and market competitiveness in the regression analysis calls for a nuanced exploration of these aspects in future research, considering their potential significance in real-world scenarios.

The high R-square value indicates a substantial proportion of variance in challenges and adoption of digitization is explained by the included predictors, suggesting the model's reliability. Nonetheless, the study could benefit from further exploration of additional variables, such as customer perceptions and external market forces, to enhance its explanatory power. The research design, while robust, could strengthen its theoretical grounding by incorporating qualitative elements to provide a more holistic understanding in future research (Sreedharan V & Saha, 2021; Wiegard & Breitner, 2019). The survey methodology's reliance on self-reporting introduces potential biases, necessitating cautious interpretation of the results. Future studies could employ mixed-methods approaches for a more comprehensive exploration of the digital insurance landscape (Kirkpatrick *et al.*, 2019).

Overall, the study's findings contribute valuable insights into the digital insurance sector in Qatar. The positive industry outlook, coupled with identified challenges, provides a nuanced understanding of the dynamic digital landscape (Ghosh *et al.*, 2022). Based on the study results, transparency improvements, further exploration of digital tools, and addressing barriers for new entrants should

be prioritized by industry stakeholders in navigating the evolving terrain. Building on this foundation, future research could delve deeper into customer perceptions, emerging technologies, and the interplay of external market forces.

CONCLUSION

In conclusion, this study addressed a critical gap by providing a synthesized conceptual framework that incorporates established theories to comprehensively examine the complexities of the digital insurance sector in Qatar. The adoption of a quantitative research design and a robust theoretical foundation allowed for a nuanced exploration of challenges and opportunities. The high R-square value attests to the model's reliability, revealing that approximately 61.7% of the variance in challenges and adoption of digitization is explained by the included predictors. The positive correlations among challenges, regulatory impact, and competitive rivalry align with existing literature, emphasizing the interconnected nature of these factors. However, the non-significant contribution of security challenges and market competitiveness calls for further exploration in future research. The study's findings offer valuable insights for industry stakeholders, guiding efforts to enhance transparency, explore digital tools, and address barriers for new entrants in the ever-evolving digital insurance landscape in Qatar.

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