

Profitability and Resilience: Comparative Analysis of the Performance of Islamic and Conventional Insurance Companies in the GCC Region

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ABSTRACT

Fueled by a remarkable year-on-year growth in 2022, reaching USD 30 billion, the global Takaful industry is experiencing a surge. The Gulf Cooperation Council (GCC), contributing a dominant 55.7% of global Takaful contributions, stands as a cornerstone of this growth. This study compares the financial metrics of Islamic (Takaful) and conventional insurance companies within the GCC region. Employing the System Generalized Method of Moments (SGMM) panel data estimator on a 10-year (2013-2022) sample of 85 insurance companies across six countries, the analysis reveals significant differences in the performances of the two insurance segments. Takaful companies generally exhibit lower capitalization, leverage, solvency, claim ratios, and firm size but demonstrate higher premium growth than their conventional counterparts. Furthermore, the study identifies economic growth as a key driver of profitability, while firm-specific factors like leverage, capital adequacy, and firm size also play a significant role. Interestingly, neither the business model nor the COVID-19 pandemic significantly impacted profitability, highlighting the industry's adaptability and robust risk management practices. These findings offer valuable insights for stakeholders to make informed decisions on fostering growth, stability, and innovation within the GCC's insurance landscape. Additionally, the research emphasizes the need for continuous analysis to adapt to evolving market conditions and regulatory environments and ensure long-term sustainability for the region's insurance sector.

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1. INTRODUCTION

Takaful, a Shari'ah-compliant alternative to conventional insurance, is gaining global popularity. Both Islamic and conventional insurance offer risk protection but differ in principles and mechanisms. Takaful operates on mutual assistance, risk sharing, cooperation, and solidarity among participants. Members contribute to a common pool (*Tabarru'*) used to pay claims and expenses, with any surplus distributed among them. Conventional insurance, by contrast, involves transferring risk from the insured to the insurer in exchange for a premium. The insurer assumes the risk and compensates the insured for covered losses, based on the principle of indemnity. Despite differences, both systems protect against risks, promote financial stability, and involve the pooling and sharing of resources.

According to the Islamic Financial Services Industry Stability 2023 report (IFSB, 2023), the global Takaful industry grew by 16.1% in 2022, reaching USD 30 billion, far exceeding the 5.4% growth of the previous year. The GCC region remains the top Takaful market, accounting for 55.7% of the global share, with a 24.4% annual growth to USD 16.7 billion, signaling a strong post-pandemic recovery. South-East Asia and the Middle East/South Asia regions each contribute 20%.

Saudi Arabia leads the GCC Takaful market, recording 26.9% annual growth in contributions to reach USD 14.2 billion, representing 87% of the region's total. Qatar's Takaful sector grew 72.5% to USD 527 million, while Oman saw moderate 7.7% growth, and Bahrain recorded a 4.9% decline, mainly due to reduced health insurance contributions.

Despite growing academic interest in Islamic finance, a significant research gap remains concerning the comparative financial performance and resilience of Takaful and conventional insurance firms in the GCC. Most existing studies either focus on one insurance model or lack robust empirical approaches that test resilience in the face of systemic shocks. Furthermore, while many studies report on firm-specific or macroeconomic determinants of profitability, few integrate these variables into a theory-driven empirical framework. To address this shortfall, this study systematically examines the performance and resilience of both insurance models in the GCC, applying a theory-anchored empirical investigation to better understand their behavior under normal and crisis conditions.

The study poses three key research questions:

- RQ1: Do Islamic (Takaful) and conventional insurance firms in the GCC exhibit significant differences in profitability and financial structure?
- RQ2: What are the firm-specific and macroeconomic determinants of profitability for insurance firms in the region?
- RQ3: How did the COVID-19 pandemic affect the profitability and resilience of Takaful versus conventional insurers?

By addressing these questions, this research aims to contribute both empirically and theoretically to the discourse on Islamic finance and insurance resilience.

The significance of this study lies in its potential to bridge the existing research gap by offering a comparative analysis of the performance metrics of Takaful and conventional insurance firms within the unique context of the GCC. Given the region's dominant position in the global Takaful market, a deeper understanding of these sectors is critical. By unveiling the nuances of their comparative performance, this study aims to provide valuable insights for policymakers, investors, and other stakeholders operating within the GCC's insurance market.

The remainder of the paper is structured as follows: Section 2 reviews relevant literature. Section 3 outlines the research method and variables. Section 4 presents and discusses empirical results. Section 5 concludes the study, acknowledges limitations, and proposes areas for future research.

2. LITERATURE REVIEW

2.1. Concept of Takaful

The rise of Islamic banking in the late 20th century highlighted the need for risk-management tools compatible with Islamic finance principles (COMCEC, 2019). Takaful emerged as a crucial component of the Islamic financial system, complementing its development and success. Numerous Takaful models and companies have since been established, catering to Muslims who previously lacked access to conventional insurance due to religious restrictions. Takaful allows them to participate in financial opportunities while adhering to their faith's principles.

Takaful can be defined as a mutual guarantee or assurance scheme. A group of individuals facing similar risks contributes to a common fund. This fund is then used to compensate any member who incurs a covered loss (Alhabshi et al., 2012). The International Islamic Fiqh Academy (IIFA) offers a

similar definition, referring to Takaful as “cooperative insurance”, where participants contribute to a fund used to compensate each other for pre-defined risks (OIC, 2016, p. 117).

2.2. Determinants of Insurance Sector Growth

The study by Msomi and Nzama (2023) examines how firm-specific characteristics impact the financial performance of insurance companies in South Africa, measured by return on assets (ROA). The analysis covers 36 publicly traded companies from 2008 to 2019. The authors utilize panel data estimators, including fixed and random effects, to assess the impact of factors like firm size, leverage ratio, premium growth rate, liquidity ratio, and tangibility of assets on ROA. The research reveals that other firm-specific factors have no statistically significant influence except for leverage and liquidity ratios. Liquidity demonstrated a strong positive relationship, whereas leverage negatively impacted ROA. Higher liquidity suggests a greater capacity to meet policyholder obligations, potentially leading to increased ROA. It suggests that higher liquidity allows insurance firms to meet obligations more efficiently, reducing default risk and enhancing confidence among policyholders and investors. Additionally, sufficient liquidity enables firms to capitalize on investment opportunities. Therefore, the positive relationship between liquidity and profitability highlights the importance of financial stability and flexibility. The authors recommend implementing automated systems to reduce costs and highlight the significance of effective asset management.

Furthermore, Msomi (2023) investigates factors affecting the financial performance of non-life insurance companies in Africa. Analyzing data from 121 listed insurers across 48 nations from 2008 to 2019, the study employs ordinary least squares and two-step System Generalized Method of Moments (SGMM) estimators to assess determinants. Lagged ROA, equity capital, operational efficiency, leverage, investment capability, and GDP emerged as important. Equity capital has an inversely significant impact, suggesting negative effects from imbalanced capital structures. Operational efficiency and investment capability positively influence performance, while leverage negatively affects it. GDP growth rate positively influences performance. No significant effects were found from factors like insurer age, size, underwriting risk, claims ratio, liquidity, interest rate, inflation rate, exchange rate, or money supply.

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Morara and Sibindi (2021) address a gap in research by exploring determinants of financial performance in the Kenyan insurance industry, analyzing data from 2009 to 2018, encompassing 37 general and 16 life insurers. Using ROA and Return on Equity (ROE) as metrics, larger companies exhibit better profitability. A positive association between financial performance and leverage highlights the potential benefit of strategic debt use, though maintaining an optimal debt ratio is emphasized. Positive associations are also identified between performance, reinsurance ratios, and investment decisions, indicating that effective risk management and sound investment strategies improve financial health.

Derbali (2014) investigates factors influencing performance within the Tunisian life insurance sector, analyzing data from eight companies over 11 years (2005-2015). Size, age, and growth are

significant positive determinants of performance, while leverage, tangibility, liquidity, and risk have no significant effect.

Several studies have explored determinants influencing the financial performance of Takaful companies globally. Kantakji et al. (2020) examine drivers of performance for general Takaful companies worldwide, highlighting the importance of market size, economic conditions, investment returns, and robust risk management. Strategies like mergers, liquidity optimization, and adherence to Shari'ah principles are suggested.

Hodori and Masih (2017) analyze the Malaysian Takaful industry, finding that larger and older Takaful operators are more profitable due to expanded risk pools and diversified lines, while younger firms display greater efficiency. A correlation between the profitability of newer Takaful companies and affiliations with conventional insurance companies is noted.

In addition, Sahudin et al. (2022) investigate micro- and macro-level factors influencing Takaful performance in Malaysia, using panel data from five companies over ten years. Liquidity and firm size positively relate to performance, while GDP negatively impacts it.

Prakoso (2021) analyzes determinants of Family Takaful earnings in Indonesia, finding that leverage and premium contributions positively impact profitability. Higher leverage allows Takaful companies to meet obligations, while increased premium contributions expand market share and income.

Meanwhile, Malahim (2016) examines Islamic insurance companies in Jordan, revealing that firm size positively impacts earnings (ROE). No significant associations are found with debt ratio, equity ratio, GDP growth, inflation, or unemployment.

Understanding the comparative performance of Takaful and conventional insurance companies is important. Akhter et al. (2017) compare the demand dynamics of Takaful and conventional insurance across 14 countries from 2005 to 2014. The study investigates insurance demand differences and examines resilience post-Global Financial Crisis (GFC). GDP per capita negatively impacts both insurance types during crises, but Islamic insurance shows greater resilience. Conventional insurance is negatively linked to the saving rate, while Islamic insurance remains unaffected. Education positively influences Islamic insurance demand. Higher average income affects Islamic insurance positively in the Middle East but negatively in ASEAN, attributed to differing perspectives on Islamic finance. The study offers a comparative analysis between determinants of conventional and Islamic insurance products and their responses during crises, providing insights for policymakers and insurers

2.3. Insights from the GCC Insurance Sector

2.3.1. A Closer Look at Regional Insurance Markets

According to the GCC Insurance Industry Report (AP, 2024), the GCC insurance industry has witnessed robust growth, surging by 15.2% year-on-year from USD 28.4 billion in 2021 to USD 32.7 billion in 2022. This expansion was fueled by post-COVID-19 economic recovery and the establishment of mandatory health insurance schemes across GCC nations. The GCC's Gross Written Premium (GWP) increased at a compound annual growth rate (CAGR) of 4.4% from USD 26.4 billion in 2017 to USD 32.7 billion in 2022, driven by economic resurgence, population growth, infrastructure investments, and economic diversification endeavors. Non-life insurance dominated the market, accounting for 88.5% of total GWP, propelled by health and motor insurance advancements.

Despite growth, insurance penetration rates remained low, offering expansion opportunities supported by favorable demographics and regulations. The GCC's insurance density averaged USD 582.2 per capita in 2022, led by the UAE at USD 1,305. The GCC also hosts the world's largest Takaful market, with Saudi Arabia driving growth through mandatory insurance coverage. Mergers within the Takaful sector reflect increased competition and regulatory demands. The GCC insurance industry is poised for sustained growth and innovation, backed by regulatory reforms, economic resilience, and consumer awareness.

2.3.1.1. National Insurance Landscapes

- **Saudi Arabia:** Saudi Arabia's insurance sector, the largest in the GCC, is regulated by the Insurance Authority and includes 27 licensed companies, all offering Takaful products. Capital requirements are USD 27 million for insurers and USD 53 million for reinsurers. In 2022, the sector grew by 26.9% to a GWP of USD 14.2 billion, supported by post-pandemic recovery, a strong oil market, and non-oil sector growth. Mergers, such as Walaa with Sabb Takaful and Arabian Shield with Alahli Takaful, illustrate the push toward consolidation aligned with Vision 2030.

Regulatory milestones included new motor insurance rules, adoption of IFRS 17 and IFRS 9 standards, and the establishment of the Insurance Authority in 2023 to centralize regulation. Saudi Arabia's insurance penetration stood at 1.3% in 2022, below the GCC average, with insurance density at USD 442.2, but regulatory reforms are expected to drive future growth.

- **United Arab Emirates (UAE):** The UAE's dynamic insurance sector comprises 60 licensed companies—50 conventional and 10 Takaful—regulated by the Central Bank of the UAE and others. Capital requirements are USD 27 million for insurers and USD 68 million for reinsurers. As the GCC's second-largest insurance market and ranked 36th globally by GWP in 2022, the UAE's growth is fueled by economic strength, reforms, and consumer awareness. Non-life insurance dominates, comprising 78.5% of GWP, while life insurance remains strong despite declining individual GWP.

Key regulatory initiatives include adopting IFRS 17, Emiratization policies, and the unemployment insurance scheme. Technology integration aims to enhance compliance and customer experience, reinforcing the UAE's leadership.

- **Qatar:** Qatar's insurance market is regulated by the Qatar Central Bank (QCB) and Qatar Financial Centre Regulatory Authority (QFCRA). It has 16 licensed insurers, with 12 conventional and four Takaful providers. Capital requirements are USD 10 million. Qatar ranked 67th globally in GWP in 2022, contributing 5.4% to the GCC total, with a GWP of USD 1.8 billion.

Growth drivers include a large expatriate population, high GDP per capita, and infrastructure development. Regulatory advancements included a compulsory health insurance law. In 2023, QCB announced strategies to promote Insurtech, broadening insurance offerings and digitalization. Despite challenges, Qatar's insurance sector remains resilient.

- **Kuwait:** Kuwait's insurance sector, regulated by the Ministry of Commerce and Industry (MOCI), includes 26 licensed insurers: 11 conventional and 15 Takaful. Capital requirements are USD 16 million for insurers and USD 49 million for reinsurers. With the fastest growth in the GCC, Kuwait achieved a CAGR of 8.7% from 2017 to 2022, driven by mandatory medical insurance for expatriates.

Non-life insurance accounted for 90.2% of GWP in 2022. Key regulatory initiatives included reforms in motor insurance and health insurance for foreign nationals over

60. Though insurance penetration was only 1.0% in 2022, robust growth and regulatory efforts suggest strong future prospects.

- **Bahrain:** Bahrain's insurance market, regulated by the Central Bank of Bahrain (CBB), consists of 31 companies—26 conventional and five Takaful. Capital requirements are USD 13 million for insurers and USD 26 million for reinsurers. Bahrain's insurance sector saw marginal growth, reaching a GWP of USD 0.7 billion in 2022, with non-life insurance dominating at 87.2%.

Key regulatory efforts included improving market conduct in motor insurance and preparing for IFRS 17 adoption. Despite low penetration rates, Bahrain's insurance market remains stable, supported by regulatory initiatives.

- **Oman:** Regulated by the Capital Market Authority, Oman's sector has 19 insurers: 17 conventional and two Takaful, with a capital requirement of USD 26 million. Despite being among the smallest in the GCC, Oman's insurance market grew steadily, reaching USD 1.4 billion in GWP in 2022.

Non-life insurance accounted for 87.6% of GWP, driven mainly by the health insurance segment, aided by mandatory health insurance for over 5 million people. Regulatory efforts focused on digitalization through initiatives like the Dhamani platform. Although challenges remain, Oman's insurance sector shows resilience and growth potential.

In conclusion, while the GCC insurance industry shows strong promise, a more detailed understanding of the drivers behind its growth is essential. Further research can unlock new insights to support continued expansion.

2.3.2. Academic Insights

Research has examined factors influencing insurance company performance in the GCC region. Al-Mutairi et al. (2021) analyzed financial statements of 17 insurance firms listed on the Abu Dhabi Securities Exchange (ADX) from 2013 to 2019 using panel regression. They investigated liquidity, administration expenses, risk, size, tangibility, and age, finding that company age significantly boosts profitability. Older firms benefit from a stronger image, larger customer base, and sustained profits, aiding investor decision-making and offering research avenues into GCC insurance performance.

Alshadadi and Deshmukh (2021) explored profitability determinants in Saudi insurance companies, using panel regression on data from 25 firms (2010–2016). They found that company size positively correlates with profitability, while higher debt and loss ratios negatively affect it. Although retention ratio and investment income showed some impact, size, debt, and losses were the most influential factors. Despite development efforts, Saudi Arabia's insurance sector faces challenges like low per capita expenditure and structural weaknesses.

Ben Dhiab (2021) studied 20 major Saudi insurance firms (2009–2017) and found that growth in written premiums and higher asset tangibility positively impacted profitability. In contrast, higher loss ratios, greater leverage, and younger firm age negatively influenced financial performance. The study emphasized managing capital investments, controlling leverage, minimizing losses, and strategically growing premiums as key profitability strategies, recommending future research into broader macroeconomic impacts and extension to other GCC countries.

Hemrit (2020) investigated financial performance determinants for Takaful and cooperative insurance in Saudi Arabia, using a dynamic panel generalized method of moments estimation. Company size, insurance penetration, risk reporting, and board size influenced performance. A Shari'ah

board positively impacted Takaful firms, while non-executive directors negatively influenced both sectors. Interestingly, higher inflation improved cooperative insurers' financial performance, likely due to increased insurance demand during inflationary periods.

Ab Rahim et al. (2021) assessed efficiency among 140 Takaful and conventional firms in the GCC (2015–2019) using Data Envelopment Analysis (DEA). Takaful firms showed strong technical efficiency (82%) but lagged in cost efficiency compared to conventional insurers, who benefited from technological advancements. Qatar and Bahrain led in efficiency. The study recommended prioritizing cost efficiency and technological innovation, emphasizing regulator-industry collaboration for a more competitive market.

Finally, Alshammari et al. (2018) offered a historical and contemporary overview of the GCC's insurance and Takaful sectors. They highlighted low insurance penetration, limited family Takaful products, and inconsistent regulatory frameworks as persistent challenges, despite the region's emergence as a Takaful hub.

2.4. Theoretical Framework

2.4.1. Agency Theory

Developed by Jensen and Meckling (1976), this theory addresses the conflicts of interest between principals (owners or shareholders) and agents (managers), which give rise to agency costs. These include monitoring costs, bonding expenditures, and residual losses. The theory suggests that firms with governance structures that align incentives between principals and agents experience lower agency costs and thus better performance. This perspective is particularly relevant in comparing Takaful and conventional insurance firms, as Takaful models promote shared ownership and mutual accountability, potentially reducing agency costs.

2.4.2. Financial Slack Theory

Introduced by Bourgeois (1981), this theory conceptualizes slack as excess resources, such as surplus capital, human resources, or time, that exceed the minimum requirements for efficient function. These slack resources fulfill several key functions: they act as buffers against environmental shocks, facilitate internal conflict resolution, and enable strategic flexibility and innovation. In the context of insurance firms, slack in the form of capital adequacy or reduced financial leverage may enable firms to maintain profitability during economic fluctuations.

2.4.3. Organizational Resilience Theory

This study adopts the conceptualization of organizational resilience proposed by Lengnick-Hall et al. (2011), who define resilience as a dynamic capability developed through strategic human resource management and internal organizational routines. Unlike traditional views that frame resilience as mere recovery or “bouncing back,” their model emphasizes an organization's ability to absorb disruption, respond with context-specific strategies, and transform operations to create long-term advantages. In the context of insurance firms, this theory helps explain how pre-existing internal capabilities such as financial flexibility, governance systems, and employee adaptability can influence a firm's ability to maintain profitability and deliver services during crises like the COVID-19 pandemic.

2.5. Key Takeaways and Hypotheses

The reviewed literature provides valuable insights into the various factors influencing the financial performance of insurance companies. Studies highlight the significance of firm-specific

characteristics, macroeconomic factors, and the GFC in shaping the financial landscape of the insurance industry. The firm size and liquidity are consistently linked to better financial performance. Larger and more liquid companies seem to benefit from economies of scale, diversification, and improved capacity to meet obligations. Meanwhile, the impact of other firm-specific factors like leverage, tangibility, and age is mixed and may depend on the specific market context. Finding optimal debt levels, managing asset allocation, and building a strong reputation remain crucial considerations. Moreover, macroeconomic factors like GDP growth can positively influence performance, but the relationship with inflation is complex and may vary depending on the insurance type (e.g., Takaful). Hence, understanding the specific market dynamics is essential. Effective risk management, investment strategies, and customer satisfaction also play a significant role in achieving sustainable profitability.

Potential differences exist between the performance of Takaful and conventional insurance companies, requiring further investigation. The GFC had a significant impact on the insurance industry. Hence, the effect of the COVID-19 pandemic on the performance of both sectors in the GCC region remains an open question and warrants further research.

Based on the theoretical frameworks and literature review, we propose the following hypotheses:

- H1.* Islamic insurance companies (Takaful) in the GCC region exhibit different financial performance metrics compared to conventional insurance companies.

(Justification: According to Jensen and Meckling (1976), Agency Theory suggests Takaful's mutual structure (policyholders as joint principals/agents) reduces traditional owner-manager conflicts, predicting distinct financial metrics versus conventional insurers' shareholder-driven model.)

- H2.* Firm-specific factors (leverage, capital adequacy and firm size) and country-specific factors (economic growth and inflation) significantly influence the performance of both Takaful and conventional insurance companies.

(Justification: Drawing on Bourgeois's (1981) Organizational Slack Theory, firm-specific characteristics such as leverage, capital adequacy, and size represent forms of slack that can buffer against uncertainty, support operational flexibility, and enhance profitability under varying economic conditions.)

- H3.* The COVID-19 pandemic had a significant impact on the performance of both Takaful and conventional insurance sectors in the GCC region.

(Justification: Based on Lengnick-Hall et al. (2011), firms with stronger resilience capacity shaped by internal routines, human capital, and adaptive structures are better able to maintain performance during external shocks such as the COVID-19 pandemic.)

The theoretical link between profitability and organizational resilience is grounded in Financial Slack Theory (Bourgeois, 1981), which posits that firms with stronger profitability generate surplus internal resources that can be utilized during times of stress. These financial reserves enhance a firm's ability to absorb shocks, maintain operations, and adapt strategically to changing environments. In this sense, profitability serves not only as an outcome of operational efficiency but also as a buffer and enabler of resilience, particularly during crises like the COVID-19 pandemic. Moreover, according to Organizational Resilience Theory (Lengnick-Hall et al., 2011), resilient firms are characterized by proactive resource management and adaptive capabilities, both of which are more easily developed and maintained in profitable firms that have the means to invest in long-term strategies, human capital, and system redundancies. Therefore, conceptually, higher profitability contributes

to an organization's resilience by enabling sustained performance and strategic flexibility under adverse conditions.

3. METHODOLOGY AND DATA

3.1. Data

The data sample consists of 85 insurance companies (N=85) from six countries, where 49 are conventional and 36 are Takaful companies, utilizing annual data from 2013 to 2022 (T=10). The firm-specific data is extracted from the Refinitiv Eikon (RE) database, whereas the macroeconomic variables (country-specific factors) are collected from the World Bank (WDI) database. A detailed description of all variables, including their indicators, expected signs, and sources, is provided in *Table 1*.

Table 1: Description of Variables

Variable	Indicator	Description	Expected Sign	Source
Dependent Variable				
ROA	Return On Asset	Net Income / Total Assets		RE
Independent Variables				
Country-Specific Variables				
IF	Inflation Rate	Inflation, consumer prices (annual %)	-	WDI
EG	Economic Growth	GDP per capita growth (annual %)	+	WDI
Firm-Specific Variables				
EC	Equity Capital	Log (Total Assets – Total Liabilities)	+	RE
LR	Leverage Ratio	Total Debt / Total Equity	-	RE
SR	Solvency Ratio	Net Income / Total Liabilities	+	RE
CR	Claims Ratio	Claims paid / Net premium	+	RE
PG	Premium Growth	(NP t-1 – NP t) / NP t-1	-/+	RE
CA	Capital Adequacy	Total Equity / Total Assets	+	RE
SIZE	Firm Size	Log of Total Assets	+	RE
Dummy Variables				
IDS	Specialization ID	IDS = 1 for Takaful companies	+	
GHC	Global Health Crisis	GHC = 1 during the pandemic	-	

Note: NP = Net Premium, RE = Refinitiv Eikon, WDI = World Development Indicator. Expected signs represent common theoretical predictions; actual results may vary. Pandemic years are defined as 2020, 2021, and 2022 for the GHC dummy.

3.2. Model Specification

The study compares the performance of Islamic and conventional insurance firms in the GCC region. The main model under scrutiny includes firm-specific (FSV) and country-specific (CSV) factors, a business model specialization dummy (IDS), and a COVID-19 pandemic dummy (GHC). The baseline model is specified as:

$$ROA_{it} = \alpha_0 + \beta_1 ROA_{it-1} + \beta_2 CSV_{it} + \beta_3 FSV_{it} + \beta_4 IDS_i + \beta_5 GHC_t + \alpha_i + \lambda_t + \varepsilon_{it} \quad (Eq. 1)$$

Where: ROA_{it} is the Return on Assets of firm i at time t ; $ROA_{i,t-1}$ is the lagged dependent variable; FSV_{it} is a vector of firm-specific variables including EC, LR, SR, CR, PG, CA, and SZ; CSV_{it} is a vector of country-specific macroeconomic variables including EG and IF; IDS_i is a dummy variable equal to 1 for Takaful companies and 0 for conventional companies; GHC_t is a dummy variable equal to 1 for

the pandemic years (2020-2022) and 0 otherwise; β_n are the regression coefficients to be estimated; α_i represents the unobserved time-invariant firm-specific effects; λ_t represents the time-specific effects (year dummies); and ε_{it} is the idiosyncratic error term.

In addition, to assess the differential impact of internal factors on the financial performance of Takaful versus conventional insurance companies, particularly during the GHC, models incorporating triple interaction terms are estimated. Conceptually, this involves interacting specific firm variables with the specialization dummy and the pandemic dummy:

$$ROA_{it} = \alpha_0 + \beta_1 ROA_{it-1} + \beta_2 CSV_{it} + \beta_3 FSV_{it} + \beta_4 IDS_i + \beta_5 GHC_t + \beta_6 (Specific FSV_{it} \times IDS_i \times GHC_t) + \alpha_i + \lambda_t + \varepsilon_{it} \quad (Eq. 2)$$

Where: $\beta_6 (Specific FSV_{it} \times IDS_i \times GHC_t)$ represents the triple interaction term for a 'specific' firm-level variable ($LR_{it} \times IDS_i \times GHC_t$). Separate models are estimated for interactions with different firm-specific variables, as presented in the results section.

3.3. Research Methods

The study adopts two distinct analytical methods to explore and test the research hypotheses: A two-sample t-test and the System GMM (SGMM) estimator.

First Hypothesis: To compare the financial performance metrics of Islamic and conventional insurance companies in the GCC region (Hypothesis 1), we employ a two-sample t-test. This approach allows for a direct comparison of the mean financial characteristics between the two types of insurance entities, consistent with prior research (Hidayat, 2015; Guendouz, 2018).

Second and Third Hypotheses: To estimate the determinants of profitability specified in equation 1 and the interaction models based on equation 2 (addressing Hypotheses 2 and 3), the study employs the two-step SGMM method. SGMM is a robust econometric technique particularly suited for dynamic panel data models, addressing common issues such as endogeneity (especially from the lagged dependent variable and potentially other regressors) and unobserved heterogeneity (Arellano and Bover, 1995; Blundell and Bond, 1998).

Rationale for GMM: Traditional panel data estimation methods like Pooled OLS, Fixed Effects (FE), or Random Effects (RE) can yield biased and inconsistent estimates when the model includes a lagged dependent variable ($ROA_{i,t-1}$) and potentially endogenous regressors, in the presence of unobserved firm-specific effects (α_i). The GMM approach overcomes these limitations. Specifically, the SGMM estimator, developed by Blundell and Bond (1998), builds upon the Difference GMM (DGMM) of Arellano (1991) by using a system of equations – one in first differences (instrumented with lagged levels) and one in levels (instrumented with lagged first differences). This improves efficiency and performs better when variables are persistent over time.

GMM estimators offer two key advantages: they address potential simultaneity bias by using internal instruments (lagged values of variables), and they control for unobserved firm-specific heterogeneity and time-specific effects.

The SGMM approach is preferred over DGMM in this context because the lagged ROA coefficient estimated via DGMM was found to be close to the FE estimate, suggesting potential weak instrument issues that SGMM is designed to mitigate (see [Section 4.3](#)). Furthermore, SGMM allows for the inclusion and estimation of coefficients for time-invariant variables like the specialization dummy (IDS), which would be removed by the differencing process in DGMM.

The choice of GMM is further justified by the panel structure ($N > T$; 85 firms over 10 years) and the dynamic nature of profitability (inclusion of lagged ROA). This aligns with established practices in empirical finance and corporate governance research employing panel data, e.g., Vojinovic (2022), Parkoso (2021), and Hodori (2017). We utilize the two-step SGMM estimator with robust standard errors corrected for finite samples using the Windmeijer (2005) correction to ensure reliable inference. Instrument validity is assessed using the Hansen test of overidentifying restrictions and Arellano-Bond tests for serial correlation in the residuals.

4. DISCUSSIONS OF THE RESULTS

4.1. Preliminary Analysis

This section discusses the empirical findings derived from the analyses. We begin with descriptive statistics and correlations before moving to the main regression results.

4.1.1. Descriptive Statistics

Table 2 presents the summary statistics for the variables used in the study over the period 2013–2022 for the 85 sample firms.

Table 2: Descriptive Statistics

	<i>mean</i>	<i>min</i>	<i>max</i>	<i>sd</i>	<i>skewness</i>	<i>kurtosis</i>	<i>count</i>
Return on Assets	0.017	-0.908	0.360	0.065	-5.223	66.853	688
Economic Growth	0.642	-7.169	7.375	3.475	-0.079	2.334	688
Inflation	1.613	-2.540	4.995	1.834	-0.605	2.680	688
Leverage Ratio	0.127	0.000	16.795	0.782	17.111	336.206	688
Solvency Ratio	0.001	-14.042	0.913	0.572	-21.939	530.769	688
Claims Ratio	1.039	0.044	10.099	0.702	6.604	72.274	688
Premium Growth	0.222	-0.968	30.642	1.755	10.105	145.164	688
Capital Adequacy	0.354	0.006	0.998	0.165	0.747	3.752	688
Equity Capital	8.002	5.699	9.485	0.471	0.313	4.257	688
Firm Size	8.511	7.083	10.079	0.471	0.638	3.797	688

Source: Author's calculation based on data from Refinitiv Eikon and World Bank. $N = 85$ firms, $T = 10$ years (2013–2022). Total observations = 850 (unbalanced panel).

The average Return on Assets (ROA) is low at 1.7%, with considerable variation ($SD = 6.5\%$) and significant negative skewness, indicating that while most firms have low profitability, some experience substantial losses. Key firm characteristics like Leverage Ratio (LR), Capital Adequacy (CA), and Firm Size (SZ) show wide ranges. Premium Growth (PG) is highly volatile. Economic Growth (EG) averages slightly positive but is also volatile. The high kurtosis for several variables (ROA, LR, SR, CR, PG) suggests the presence of extreme values or outliers in the sample.

4.1.2. Correlation Matrix

Table 3 displays the Pearson correlation coefficients among the main variables. The correlations are generally low to moderate, mitigating concerns about severe multicollinearity among most independent variables. However, the correlation between Equity Capital (EC) and Firm Size (SZ) is high (0.85), which is expected as larger firms typically have more equity. This high correlation warrants caution when interpreting models including both variables; however, GMM is generally robust to

moderate multicollinearity. ROA is positively correlated with SR, CA, EC, and SZ, and negatively correlated with LR, aligning with initial expectations.

Table 3: Correlation Matrix

	ROA	EG	IF	LR	SR	CR	PG	CA	EC	Size
ROA	1.00									
EG	-0.00	1.00								
IF	-0.01	0.40**	1.00							
LR	-0.18**	-0.01	-0.03	1.00						
SR	0.31**	0.04	-0.04	-0.02	1.00					
CR	-0.03	-0.03	-0.00	0.05	0.02	1.00				
PG	0.03	0.00	0.00	-0.00	0.02	-0.06*	1.00			
CA	0.16**	-0.09**	0.00	-0.14**	-0.13**	-0.01	-0.02	1.00		
EC	0.34**	-0.11**	0.00	-0.20**	0.11**	0.08**	0.05	0.12**	1.00	
Size	0.23**	-0.06	0.01	-0.03	0.13**	0.06	0.04	-0.34**	0.85**	1.00

Note(s): Pearson correlation coefficients. * $p < 0.10$, ** $p < 0.05$. Variable definitions are in Table 1. The high correlation between EC and SZ (0.85) suggests potential multicollinearity if both are included simultaneously without caution. ROA shows significant positive correlation with SR, CA, EC, and SZ, and negative correlation with LR.

Source: Author's calculation.

4.2. Two Group t-test

To test Hypothesis 1 regarding differences between conventional and Takaful firms, a two-sample t-test comparing the means of key financial metrics was conducted. The results are presented in Table 4.

Table 4: t-test for mean

Insurance-Takaful		
Return on Assets	0.01**	[0.00]
Leverage Ratio	0.09*	[0.05]
Solvency Ratio	0.08**	[0.04]
Claims Ratio	0.11**	[0.05]
Premium Growth	-0.46	[0.44]
Capital Adequacy	0.03**	[0.01]
Equity Capital	0.22**	[0.03]
Firm Size	0.19**	[0.03]

Note: Standard errors in brackets. * $p < 0.10$, ** $p < 0.05$

The t-test results indicate statistically significant differences between conventional and Takaful insurance companies for most variables examined. Conventional firms, on average, exhibit significantly higher ROA, LR, SR, CR, CA, EC, and SZ. This suggests conventional insurers in the GCC tend to be more profitable, more leveraged, hold higher solvency margins (as measured here), have higher claims ratios, better capital adequacy, and are larger in size compared to their Takaful counterparts during the sample period. No significant difference was found for Premium Growth (PG). These findings support Hypothesis 1 and align with observations by Janjua and Akmal (2015) in a different market context.

This performance disparity may be explained through the lens of Agency Theory (Jensen & Meckling, 1976), which suggests that differences in governance and ownership structures affect

firm behavior and performance. The mutual ownership structure of Takaful firms, while potentially reducing agency costs, may also impose operational and investment constraints not faced by conventional insurers. In contrast, conventional firms despite possibly facing higher agency costs, may benefit from more flexible capital structures and profit-maximization strategies, which could contribute to their superior financial performance.

4.3. GMM Model Selection

To justify the choice of SGMM over DGMM, we followed the approach suggested by Bond (2002) and compared the coefficient of the lagged dependent variable $ROA_{i,t-1}$ obtained from Pooled OLS (POLS), Fixed Effects (FE), DGMM, and SGMM. POLS is expected to be biased upwards, while FE is expected to be biased downwards in dynamic panels with small T. A consistent GMM estimate should lie between the POLS and FE estimates. Our preliminary analysis showed the DGMM coefficient for L.ROA was close to the FE estimate, potentially indicating weak instruments, thus favoring the SGMM approach, which is designed to improve upon DGMM in such cases. Additionally, SGMM allows for estimation of the time-invariant IDS dummy.

Table 5: Choice between Difference and System GMM

	POLS	FE	DGMM
L.Return on Assets	0.513** (0.042)	0.288** (0.050)	0.105 (0.128)
Time effects	Yes	Yes	Yes
AR(1)			0.041
AR(2)			0.581
Hansen test			0.443
Sargan test			0.007
Number of instruments			30
Number of groups			80
GMM Type			difference
Two-Step			twostep
Robust			robust

Note(s): The coefficient of lagged dependent variable in Pooled OLS is upward bias, while in Fixed Effects it is downward bias. Use these two coefficients as upper and lower bounds, respectively. If this coefficient in Differenced GMM is closer to Fixed Effects or below it, then apply System GMM. Number of instruments should be not more than the Number of groups. The p-value of AR(1) should be lesser than 0.05; whereas p-value of AR(2) should be more than 0.05. Null hypothesis: No Autocorrelation. Hansen/Sargan p-values should be more than 0.05. Null hypothesis: The instruments are valid. If you apply robust option, then refer to Hansen test.* $p < 0.1$, ** $p < 0.05$.

For the SGMM estimation, we used the two-step procedure with Windmeijer (2005) finite-sample correction for standard errors. To avoid instrument proliferation, the instrument set was collapsed. The validity of the instruments was checked using the Hansen J-statistic (testing overidentifying restrictions) and the Arellano-Bond tests for first-order (AR(1)) and second-order (AR(2)) serial correlation in the differenced residuals. The null hypothesis for the Hansen test is that the instruments are valid (exogenous). The null for AR(1) is no first-order serial correlation, which is expected to be rejected. The crucial test is AR(2), where the null is no second-order serial correlation; failure to reject AR(2) supports the model specification and instrument validity.

Table 6: GMM Outputs

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>
L.Return on Assets	0.574** (0.107)	0.602** (0.082)	0.304** (0.118)	0.391** (0.112)	0.569** (0.102)	0.513** (0.061)	0.571** (0.101)
Economic Growth (EG)	0.001* (0.001)	0.001** (0.001)	0.000 (0.001)	0.000 (0.001)	0.001* (0.001)	0.002** (0.001)	0.001* (0.001)
Inflation (IF)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Leverage Ratio (LR)	-0.021* (0.012)	-0.014 (0.010)	-0.023 (0.014)	-0.051* (0.029)	-0.018 (0.011)	-0.009 (0.006)	-0.019* (0.011)
Solvency Ratio (SR)	0.036 (0.028)	0.029 (0.020)	0.244** (0.077)	0.039 (0.042)	0.034 (0.024)	0.031 (0.024)	0.038 (0.028)
Claims Ratio (CR)	-0.000 (0.002)	0.001 (0.002)	0.001 (0.001)	-0.002 (0.003)	-0.001 (0.002)	-0.000 (0.002)	0.000 (0.002)
Premium Growth (PG)	0.003 (0.004)	0.003 (0.002)	0.003* (0.002)	0.002 (0.004)	0.001 (0.003)	0.003 (0.002)	0.005* (0.003)
Capital Adequacy (CA)	0.180** (0.057)	0.104** (0.037)	0.161 (0.111)	0.232** (0.096)	0.188** (0.058)	0.085** (0.016)	0.189** (0.074)
Firm Size (Size)	0.039** (0.014)	0.027** (0.014)	0.037 (0.023)	0.039* (0.020)	0.040** (0.015)	0.030** (0.010)	0.026** (0.011)
Specialization ID (ISL)	0.005 (0.007)	0.002 (0.005)	0.013* (0.007)	0.004 (0.012)	0.006 (0.007)	-0.011 (0.012)	-0.187 (0.171)
Pandemic (GHC)	-0.008 (0.006)	-0.003 (0.006)	-0.002 (0.007)	0.005 (0.023)	0.000 (0.007)	-0.017 (0.018)	-0.081 (0.090)
ISL X GHC		-0.010 (0.008)	-0.008 (0.009)	0.001 (0.041)	-0.009 (0.009)	0.052* (0.029)	-0.155 (0.233)
Constant	-0.385** (0.140)	-0.259** (0.126)	-0.364 (0.234)	-0.394* (0.202)	-0.400** (0.150)	-0.276** (0.091)	-0.275** (0.117)
Interactions		LR	SR	CR	PG	CA	SZ
ISL X FSV		0.018 (0.012)	-0.212** (0.091)	0.002 (0.004)	0.006 (0.005)	0.042 (0.035)	0.023 (0.020)
GHC X FSV		-0.003 (0.010)	-0.046 (0.091)	-0.005 (0.015)	0.071** (0.022)	0.031 (0.044)	0.009 (0.010)
ISL X GHC X FSV		0.023* (0.012)	0.361** (0.100)	-0.012 (0.041)	-0.060* (0.031)	-0.157* (0.081)	0.018 (0.028)
AR(1)	0.021	0.020	0.038	0.014	0.021	0.016	0.018
AR(2)	0.895	0.934	0.940	0.770	0.856	0.964	0.895
Hansen test	0.230	0.356	0.220	0.240	0.129	0.416	0.330
No of instruments	63	77	61	41	67	77	65
Number of groups	81	81	81	81	81	81	81

Note(s): Dependent variable is ROA. Estimations are based on two-step robust System GMM with Windmeijer (2005) finite-sample correction. Standard errors are in parentheses. *p<0.10, **p<0.05. All models include year dummies (not reported). FSV in interaction models refers to the specific firm-variable indicated in the column header (e.g., LR for Model 2). ISL represents the IDS dummy (1=Takaful). GHC is the pandemic dummy (1=2020-2022). AR(1) and AR(2) are p-values for Arellano-Bond tests for first- and second-order serial correlation in differenced residuals. Hansen test is the p-value for the test of overidentifying restrictions.

Source: Author's estimation.

4.4. Empirical Analysis

Table 6 presents the main results from the two-step robust SGMM estimations. Model 1 is the baseline model including all main effects. Models 2 through 7 introduce three-way interaction

terms between the Islamic specialization dummy (IDS), the global health crisis dummy (GHC), and one firm-specific variable (FSV) at a time, to explore differential effects during the pandemic based on the insurance model.

Other firm-level indicators exhibit mixed results. The solvency ratio (SR) shows a generally positive but statistically insignificant relationship with profitability, except where interaction terms complicate interpretation (e.g., in Model 3). This is somewhat in contrast with earlier findings by Tahira and Arshad (2014) and may reflect regulatory thresholds ensuring minimum solvency without necessarily boosting profit margins. The claims ratio (CR) is also statistically insignificant across all models, echoing the findings of Msomi (2023), which may indicate that effective reserving and reinsurance arrangements mitigate the immediate impact of claim fluctuations on profitability. Premium growth (PG) presents weak and inconsistent evidence of a relationship with profitability. It is mostly insignificant, though it reaches marginal significance in Model 3 and Model 7 with a positive sign. This partial alignment with Msomi and Nzama (2023) and contrast with Aouini and Abdennadher (2022) may suggest that while premium expansion reflects market activity, its benefits are offset if accompanied by higher expenses or loss ratios.

Regarding specialization and external shocks, the Takaful firm dummy (ISL) is largely insignificant in most models, with limited evidence of profitability differences between Takaful and conventional insurers once firm-specific controls are included. However, its positive coefficient in Model 3, albeit weakly significant, may hint at model-dependent variation. Finally, the COVID-19 pandemic dummy (GHC) is insignificant across all models, suggesting that the pandemic did not cause a statistically measurable decline in profitability for insurance firms in the region during 2020–2022. This may reflect institutional resilience, regulatory support, or rapid strategic adaptation among insurers during the crisis period.

These baseline results largely support Hypothesis 2 regarding the significance of certain firm-specific factors (LR, CA, SZ) and country-specific factors (EG), but provide less support for a direct impact of the business model (IDS) or the pandemic (GHC) on average profitability (partially contradicting Hypothesis 3 regarding the pandemic's impact).

4.4.1. Analysis of Interaction Effects

Models 2-7 explore whether the impact of firm-specific factors differs for Takaful firms, particularly during the pandemic. The significance of the three-way interaction term (ISL X GHC X FSV) indicates such differential effects. We discuss the interpretation based on marginal effects calculated from these models.

Interactions between GHC and ISL: [Table 7](#) shows the marginal effect of the pandemic (GHC=1 vs GHC=0) for conventional (ISL=0) and Islamic (ISL=1) firms, derived from a model specification similar to M2-M7 but focusing on the ISL X GHC interaction (results averaged across models for brevity).

Consistent with the insignificant GHC dummy in the main models, the marginal effects show that the pandemic period did not have a statistically significant average impact on profitability for either conventional or Islamic firms compared to the pre-pandemic period.

Interactions of Firm-Specific Variables with GHC and ISL: [Table 8](#) presents the marginal effects of key firm-specific variables on ROA, evaluated under different scenarios (insurance type and pandemic period). These are derived from Models 2-7 in [Table 6](#).

The marginal effects analysis provides deeper insights into how firm-specific factors influence profitability under normal conditions and during the COVID-19 pandemic, revealing notable differences between conventional and Takaful insurance firms. Leverage (LR) demonstrates a contrasting

impact across the two models. For conventional insurers, higher leverage consistently reduces profitability, particularly during the pandemic, highlighting the financial fragility associated with higher debt exposure in times of crisis. Interestingly, for Takaful firms, higher leverage is associated with increased profitability during the pandemic, while showing no significant effect during normal periods. This suggests fundamental differences in capital structure dynamics and potentially in risk-sharing or risk management approaches between the two systems.

Table 7: Interaction (dummy with dummy)

	dy/dx	Std. Err.	z	P> z	[95% Conf. Interval]
1.GHC					
Specialization ID=0	-0.003	0.007	-0.425	0.671	-0.016 , 0.011
Specialization ID=1	-0.006	0.007	-0.931	0.352	-0.020 , 0.007

Note(s): Marginal effects calculated post-estimation from SGMM models including ISL X GHC interaction. dy/dx represents the change in ROA associated with GHC=1 compared to GHC=0.

Source: Author's calculation based on [Table 6](#).

Table 8: Marginal Effect of 3-Way Interaction (continuous with 2 dummies)

		Leverage Ratio	Solvency Ratio	Claims Ratio	Premium Growth	Capital Adequacy	Size
ROA							
Specialization							
0		-0.017**	0.198**	-0.007	0.071**	0.116**	0.035**
		(0.002)	(0.091)	(0.016)	(0.023)	(0.042)	(0.013)
1		0.025**	0.346**	-0.017	0.017	0.001	0.075*
		(0.008)	(0.059)	(0.037)	(0.024)	(0.046)	(0.040)
Pandemic							
0		0.004	0.032	-0.000	0.007**	0.126**	0.048*
		(0.006)	(0.026)	(0.003)	(0.003)	(0.039)	(0.025)
1		0.025**	0.346**	-0.017	0.017	0.001	0.075*
		(0.008)	(0.059)	(0.037)	(0.024)	(0.046)	(0.040)
Specialization # Pandemic							
0 0		-0.014	0.244**	-0.002	0.001	0.085**	0.026**
		(0.010)	(0.077)	(0.003)	(0.003)	(0.016)	(0.011)
0 1		-0.017**	0.198**	-0.007	0.071**	0.116**	0.035**
		(0.002)	(0.091)	(0.016)	(0.023)	(0.042)	(0.013)
1 0		0.004	0.032	-0.000	0.007**	0.126**	0.048*
		(0.006)	(0.026)	(0.003)	(0.003)	(0.039)	(0.025)
1 1		0.025**	0.346**	-0.017	0.017	0.001	0.075*
		(0.008)	(0.059)	(0.037)	(0.024)	(0.046)	(0.040)

Note(s): Marginal effects (dy/dx) of FSV on ROA calculated post-estimation from SGMM Models 2-7 ([Table 4](#)). Standard errors in parentheses. *p<0.10, **p<0.05\$. Variable definitions in [Table 1](#).

Source: Source: Author's calculation.

Solvency Ratio (SR) exerts a generally positive effect on profitability for both types of firms, with the impact being more pronounced during the pandemic, especially for Takaful firms. This underscores the critical role of solvency buffers in maintaining performance under financial stress. On the other hand, the Claims Ratio (CR) continues to exhibit no significant marginal effect on profitability,

confirming earlier findings and suggesting that effective risk pooling or reinsurance may neutralize its impact.

The effects of Premium Growth (PG) also vary by model and period. For conventional firms, PG has a significant positive impact only during the pandemic, indicating that revenue expansion played a crucial role in cushioning profitability amid crisis conditions. Conversely, for Takaful firms, PG significantly enhances profitability only in normal times, perhaps reflecting the reliance on stable growth patterns in non-crisis settings.

Capital Adequacy (CA) is positively associated with profitability for conventional insurers across both periods, reaffirming the value of financial strength in sustaining performance. However, for Takaful firms, CA has a significant positive impact only in normal times, becoming insignificant during the pandemic. This shift may suggest that other structural or governance-related factors overshadowed capital adequacy's role in supporting Takaful performance during the crisis. Lastly, firm size (SZ) consistently contributes positively to profitability for both firm types in all periods, although the degree of statistical significance varies. This highlights the advantages of scale in the insurance sector, whether through operational efficiency, market reach, or diversified income streams.

These interaction results provide nuanced support for Hypotheses 2 and 3, revealing that the influence of firm-specific factors such as leverage, capital adequacy, and premium growth on profitability varies significantly across business models (Takaful vs. conventional) and economic conditions (normal periods vs. the pandemic). This aligns with Financial Slack Theory (Bourgeois, 1981), which posits that firms with stronger internal resources are better positioned to adapt to adverse conditions and sustain profitability. It also supports Organizational Resilience Theory (Lengnick-Hall, Beck, & Lengnick-Hall, 2011), which emphasizes that firms' internal capacities, routines, and adaptive flexibility are critical in responding to external shocks. The differentiated impact of these factors under varying scenarios confirms that resilience and performance are not only determined by structural characteristics but also by how firms utilize their resources under stress. Therefore, Hypotheses 2 and 3 are supported, as the empirical results validate the significance of both firm-specific and contextual variables in shaping profitability outcomes during turbulent times.

5. CONCLUDING REMARKS

While Takaful and conventional insurance aim to mitigate financial risks, they operate under fundamentally different principles and mechanisms, potentially leading to discrepancies in their financial performance metrics.

This study compares the performance of Islamic and conventional insurance companies in the GCC region, identifies key drivers, and assesses the impact of the COVID-19 pandemic. Using the System GMM panel data estimator, it analyzes 85 companies (49 conventional and 36 Takaful) across six countries from 2013 to 2022.

The study undertook a three-pronged approach: comparing financial performance indicators, identifying key drivers, and assessing the global health crisis's impact.

The findings of this study reveal several distinct characteristics differentiating conventional and Takaful insurers in the GCC region. Conventional insurance firms consistently demonstrate higher return on assets (ROA), indicating greater profitability. However, this is accompanied by a heavier reliance on leverage, which may signal a comparatively riskier financial structure consistent with agency theory (Jensen & Meckling, 1976), which suggests that such firms must carefully manage the trade-off between profit maximization and risk exposure. These firms also exhibit superior solvency

ratios, capital adequacy, and equity capital, reinforcing the view aligned with Financial Slack Theory (Bourgeois, 1981) that stronger internal financial buffers enhance the capacity to absorb losses and maintain operational stability during shocks.

Additionally, conventional insurers report higher claims ratios, a finding that warrants further investigation into claims management efficiency and potential risk underwriting practices. In terms of operational scale, conventional firms are significantly larger, suggesting they may benefit from economies of scale and broader market presence, advantages that align with prior research by Sahudin et al. (2022). Interestingly, no statistically significant difference was observed between Takaful and conventional firms in terms of premium growth, indicating similar expansion trends in underwriting activities. These insights contribute to the ongoing discourse on Islamic versus conventional finance by highlighting the structural and performance-related distinctions shaped by underlying business models and governance principles.

These findings suggest conventional insurers hold a financial advantage; further research could explore reasons behind these observations and identify improvement areas for Takaful firms.

A deeper investigation into the determinants of profitability revealed that several firm-specific factors exert varying effects depending on the insurance model and the economic context. Notably, leverage appears to benefit Takaful firms during economic downturns, while it significantly reduces profitability for conventional insurers, particularly under stress, highlighting differing capital structures and risk tolerance. Solvency emerged as a key determinant for both types of firms, with amplified importance for Takaful insurers during crisis periods, aligning with the resilience-based view that emphasizes strong internal buffers in shock absorption (Lengnick-Hall et al., 2011). The claims ratio exhibited a minimal impact on profitability regardless of economic conditions, suggesting that effective risk pooling and reinsurance mechanisms may neutralize its immediate financial effects. Meanwhile, premium growth proved advantageous for conventional insurers during crises, perhaps as a response strategy, whereas Takaful firms benefited more from growth during stable periods, underscoring different strategic postures. Capital adequacy significantly boosted profitability for conventional insurers in all periods, and for Takaful firms, particularly during stability, reinforcing the predictions of Financial Slack Theory (Bourgeois, 1981) on the protective role of internal financial cushions. Firm size consistently correlated with higher profitability across both models, suggesting that scale and diversification confer performance advantages.

Further insights from the two-step System GMM estimation confirm these dynamics. Economic growth was positively associated with profitability, while inflation had no statistically significant effect. Across all models, leverage negatively influenced profitability, and neither claims ratio nor premium growth showed consistent effects. In contrast, solvency ratio, capital adequacy, and firm size remained robust, significant predictors of profitability. These results collectively support the study's theoretical framing and underscore the importance of internal financial strength and structural efficiency for insurer resilience and performance in the GCC context.

Interaction analyses between internal factors and economic indicators highlight contrasting effects between conventional and Takaful insurers, emphasizing tailored strategies depending on economic climates.

The study also contributes to understanding insurance resilience during global crises like COVID-19. Despite unprecedented challenges, firms-maintained stability and profitability through effective risk and capital management.

The nuanced impact of factors such as leverage, solvency, claims ratio, premium growth, capital adequacy, and firm size suggests that while some factors consistently influence profitability, others

vary, highlighting the need for tailored, sector-specific strategies. Further research could refine risk management and adaptability strategies to better navigate future crises.

In conclusion, this study provides valuable insights into the financial performance and resilience of Takaful and conventional insurance companies in the GCC. While conventional insurers currently have an edge, further research is needed to explore underlying reasons and identify opportunities for Takaful improvement, helping promote a more balanced and competitive insurance landscape in the region.

5.1. Implications and Contributions

This study provides important empirical and theoretical contributions to the discourse on Islamic and conventional insurance in the GCC region. Theoretically, the findings validate the relevance of Financial Slack Theory and Organizational Resilience Theory in understanding how insurance firms, differentiated by business models, respond to macroeconomic shocks such as the COVID-19 pandemic. The use of a panel data approach over a ten-year period enhances the robustness of this theoretical application. From a policy perspective, the results offer regulators and policymakers crucial insights into sector-specific financial characteristics. These insights can inform the design of tailored regulatory frameworks that account for the distinct financial structures and risk profiles of Takaful versus conventional insurers, particularly under economic distress. For instance, recognizing that Takaful firms respond differently to leverage and capital adequacy pressures can guide differentiated capital requirements or risk mitigation policies.

From a managerial point of view, insurance executives can leverage the results to refine strategic decisions related to capital structuring, growth strategies, and crisis readiness. The differentiated impact of firm-specific factors during normal and pandemic periods suggests that a one-size-fits-all financial strategy is suboptimal; rather, firms should adopt adaptive approaches that consider their institutional model and the prevailing economic context. Investors, likewise, benefit from understanding which models and financial factors offer resilience and sustained profitability, supporting more informed risk assessment and portfolio diversification strategies.

5.2. Limitations and Future Research

While this study offers important insights into the performance and resilience of insurance firms in the GCC region, it is important to recognize certain limitations. First, the analysis is based on a specific period and sample size, which may limit the generalizability of the findings beyond the selected firms and timeframe. Second, the study focuses primarily on financial indicators, leaving out important non-financial dimensions such as customer satisfaction, product innovation, and operational efficiency, which may also influence performance outcomes. Third, the research relies on a purely quantitative approach. Incorporating qualitative insights such as expert interviews, case studies, or managerial perspectives could enrich the understanding of strategic responses and firm behavior, especially during periods of crisis. Lastly, the study is geographically focused on the GCC region, which may limit its applicability to other markets with different economic structures or regulatory environments.

To address these gaps, future research could expand in several directions. One potential area is the integration of non-financial variables, such as corporate governance practices, technological adoption, or customer-centric strategies, to gain a more holistic view of firm performance. Cross-regional or cross-country comparative studies could also offer insights into how different regulatory settings shape the resilience of Takaful and conventional insurers. In addition, future studies may explore emerging themes such as digital transformation, climate risk, and demographic shifts, which are increasingly relevant to the insurance industry's long-term sustainability and growth.

Including qualitative research methods alongside quantitative models could further enhance the depth and practical relevance of future work in this area.

5.3. Policy Recommendations

Based on the nuanced insights gleaned from this research, several pivotal policy recommendations are proposed to nurture the growth and bolster the competitiveness of both conventional and Takaful insurance sectors:

1. Crafting regulatory frameworks to foster equitable competition and Takaful growth through incentives.
2. Establishing robust regulatory oversight to uphold Shariah principles and market stability.
3. Strategic interventions to bridge performance gaps in Takaful, addressing factors like capital adequacy and firm size.
4. Promoting innovation in product development and advancing financial inclusion to widen insurance access.

Collective implementation can bolster the insurance sectors across the GCC, benefiting consumers and strengthening economic resilience.

Declarations

The author has no relevant financial or non-financial interests to disclose. The data are available upon a reasonable request from the author.

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