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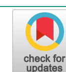

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Exploring the Interplay of Corporate Governance, Family Ownership, and Shariah Compliance on Firm Efficiency

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Abstract: *The contemporary study identified a gap in sympathy for how Shariah compliance and family ownership moderate the impacts of corporate governance and firm efficiency. Therefore, the objective of the investigation of the connection between different facets of corporate governance and business efficiency, with a specific objective, is to investigate the moderating effect of Shariah compliance and family ownership linking corporate governance and firm efficiency. The panel data was taken from the Pakistan Stock Exchange, which had 475 non-financial listed firms from 2014 to 2024. The panel data was analyzed via OLS regression, and various diagnostics assessments were used to estimate and analyze the data precisely. In addition, SEM via SmartPLS was used to evaluate the moderation effect using the bootstrapping method. The results show that audit committees, management ownership, and board independence all significantly increase firm efficiency, but Shariah conformity and family ownership show intricate moderating impacts. The originality of this research resides in its thorough examination of how contextual elements and corporate governance interact to affect company success, offering investors, business executives, and legislators insightful information.*

Key Words: Shariah Compliance, Family Ownership, Corporate Governance, Firm Efficiency

Introduction

In recent years, corporate governance has ignited fervent debate among diverse stakeholders(Ali et al., 2024). This evolution is due to its substantial influence on improving organizational precision and achievements over time. Eldaia, Hanefah, and Marzuki (2023) discovered that there is a direct correlation between the level of effective corporate governance principles that a company implements and the level of productivity that the company experiences. Some examples of these criteria are high-quality audits, concentrated ownership, management ownership, audit committees, and gender diversity on boards. Other examples include audit committees and audit committees. This viewpoint is heavily supported by agency theory, which suggests that agency problems may be caused by the fact that modern organizations share ownership and management of their operations. In their study, Abidi et al. (2024) state that good governance has the potential to alleviate these challenges. In a variety of different instances, Ali et al. (2024) demonstrate that there is a link between a board of directors that is more independent, greater management supervision, fewer conflicts of interest, and executive actions that are focused on the interests of shareholders. According to Amanamah (2024), with the assistance of an auditing committee that possesses prior expertise, it might be feasible to enhance the precision of financial data. Currently, we face a significant predicament because an optimal board size could lead to enhanced oversight and management. Furthermore, there is an increasing recognition that boards containing a diverse array of

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genders foster more comprehensive governance processes and a greater variety of perspectives (Yadav & Prashar, 2023).

Even with a large amount of study on governance in businesses, there is still a lack of knowledge on how certain contextual elements, including family ownership and adherence to Shariah, affect these relationships(Ab Ghani, 2024). Prior research (Eldaia et al., 2023; Khan et al., 2023) has mostly concentrated on broad corporate governance procedures without exploring the subtleties of these moderating impacts. For example, family ownership is common in numerous economies and brings special dynamics to governance arrangements. The efficiency of conventional governance methods may be impacted by the unique governance traits that family-owned businesses frequently display, such as concentrated control and a plan of action (Pinelli et al., 2024). Shariah compliance also imposes limitations on companies with respect to certain ethical and operational norms, which could have unique consequences for corporate governance practices (Ab Ghani, 2024). Companies that follow Shariah law must be ethical and serve their customers fairly. Islamic law forbids financial speculation (riba) and excessive risk (gharar) (Tawfik & Elmaasrawy, 2024). In order to fill a gap in our understanding, this study will examine how Shariah compliance and family ownership affect the efficiency-boosting effects of corporate governance. (Amayreh, Ananzeh, & Bugshan, 2024; Nasir et al., 2024; Tawfik & Elmaasrawy, 2022). While numerous studies have examined individual components of corporate governance, little is known about how these components interact with family ownership and Shariah compliance to affect the company's productivity. This research investigates the ways in which contextual factors regulate the connection between organizational governance and the success of businesses in order to fill the knowledge gap that has been identified. In the context of the efficiency of businesses, one of the key objectives of this research is to investigate the numerous ways in which different aspects of corporate governance influence the efficiency of businesses. Within the conversation framework, particularly interested in acquiring an understanding of how family ownership and adherence to Shariah law influence the relationship among effective corporate governance and profitable firms. Furthermore, the study objective is to ascertain the degree to which the various aspects of corporate governance have an impact on a firm's overall effectiveness. A thorough examination of the interrelationships and connections that exist linking the various corporate governance variables would carried out in order to reach this goal. The existing studies investigate the relationship between effective corporate governance and firms' productivity and also identify whether or not Shariah compliance and family ownership play a moderating role. Moreover, the study would also evaluate whether or not there is a correlation between the two. In addition to this, the research will look at whether or not there is a conceivable connection between the two terms. To achieve this, it is necessary to determine whether or not Shariah and family ownership principles have an effect on the positive correlations between good corporate governance and commercial success. This is a crucial step towards achieving our goal.

The findings of this study are absolutely necessary for stakeholders interested in achieving effective systemic governance in a variety of business scenarios. Legislators must modify the statutes governing corporate governance to consider the unique characteristics of Shariah-compliant and family-owned businesses. In a similar vein, corporate executives and boards of governors may gain valuable insights regarding the adaptation of governance methods to improve effectiveness in various contexts. The comprehension of an investor or analyst regarding the relationship between Shariah compliance, family ownership, corporate governance, and performance can affect investment decisions and risk evaluations. Additionally, this study makes a scholarly contribution by addressing a substantial void in the current body of literature and presenting empirical findings regarding the moderating influences of family status and adherence to Shariah principles. This research is notable for its unique emphasis on assessing the instantaneous effects of different corporate governance models on business efficiency, with family ownership and Shariah compliance serving as moderating factors. This study addresses research gaps and provides information valuable to researchers, business leaders, and policymakers who aim to improve corporate governance practices and thereby boost firm performance. Hence, the study is expected to enhance our understanding of how different governance systems interact with specific contextual factors to impact company efficiency. For instance, the study could show that the positive impact of board independence on company efficiency benefits family-owned firms more or that adhering to Shariah compliance enhances the effectiveness of audit committees in ensuring financial integrity. We expect this

study to significantly advance theory and practice, influencing public policy development, guiding the improvement of firm governance, and deepening our understanding of the intricate relationships that underpin business performance of public policy, guiding the enhancement of firm governance, and increasing our understanding of the complex linkages that support business performance.

Literature Review

To enhance a corporation's effectiveness, it is widely acknowledged that increasing the board of directors' independence is crucial. This is due to the fact that increasing the independence of the board of directors facilitates more efficient monitoring and minimizes the challenges agencies encounter. According to Fama and Jensen (1983), independent directors are believed to have a greater inclination to prioritize the interests of shareholders by providing a neutral evaluation and vigilant examination of management actions. This is because independent directors are known to be more impartial. This is because independent directors are able to provide both types of services. According to Bhagat and Bolton (2008), one advantage of such oversight is that it reduces the number of management opportunities and conflicts of concern that are present. This, in turn, improves the firm's performance and makes it easier to allocate resources in an efficient manner. However, Rosenstein and Wyatt (1990) discovered firms with a higher number of independent directors typically outperform their competitors in terms of operational performance and market value. These findings provide authority for this position because they imply that organizations with more independent boards of directors tend to perform better. A citation is required. Rosenstein and Wyatt (1990) conducted this research. A further benefit of independent boards is that they are associated with accounting procedures that are more trustworthy and precise. This, in turn, results in a reduction in the amount of money spent on capital expenditures and an increase in the confidence of investors (Klein, 2002). As a result, there is a positive connection between the autonomy of the board of directors and the effectiveness of the organization. Consequently, this has the effect of enhancing corporate governance by ensuring that the activities taken by management are in accordance with the priorities of shareholders.

H_1: There is a positive association exists between board independence and firm efficiency.

The findings of Dalton et al. (1999) suggest that a larger board may make it possible to bring a wider range of skills, perspectives, and assets to the table. This, in turn, may lead to an improvement in the process of formulating plans and the procedures for making decisions. According to Coles, Daniel, and Naveen (2008), Diversification has the ability to improve administration and surveillance, which in turn could contribute to an increase in the corporation's overall efficiency. Nevertheless, these advantages could be offset by slower decision-making and coordination issues with very big boards (Jensen, 1993; Daily et al., 2003). According to empirical evidence, companies with boards that are reasonably sized typically perform better because they can balance the needs of diverse input and effective collaboration (Yermack, 1996). Because of this, larger boards can enhance governance and use a wider range of expertise to increase business efficiency. However, excessively large boards should be avoided as they may impede efficient decisions and operations.

H_2: There is a positive association exists between board size firm efficiency

An audit committee is essential for monitoring the accuracy of financial accounts and adherence to legal obligations. Usually, it is made up of independent directors who have pertinent financial experience (Klein, 2002). This monitoring improves the accuracy of financial data by lowering the possibility of fraud and financial errors (Abbott et al., 2004). According to empirical data, companies with capable and engaged audit committees typically publish financial details, which boosts investor trust and lowers capital costs (Carcello et al., 2002). As a result, having a thorough audit committee guarantees better resource allocation, strengthens executive accountability, and promotes good corporate governance practices—all of which lead to increased productivity.

H_3: There is a positive association exists between audit committees and firm efficiency

Corporate board gender diversity has a good correlation with business efficiency. According to Carter, Simkins, and Simpson (2003), diversified boards are generally better able to comprehend and meet the requirements of a wider group of stakeholders. Additionally, gender-diverse boards typically perform better monitoring and risk management, which lowers the possibility of managerial excess and raises the standard of governance altogether (Adams & Ferreira, 2009). Research has indicated that companies with a higher degree of gender diversity on their boards frequently do better financially and operate more efficiently (Erhardt et al., 2003). This is explained by the diverse skill sets and work expertise that women contribute to the executive level, which promotes an inclusive culture and all-encompassing problem-solving. As a result, gender diversity promotes better and more productive corporate governance while also strengthening board independence.

H4: There is a positive association exists between gender diversity and firm efficiency

Firm efficiency has a beneficial association with excellent auditing. Accredited audit firms usually carry out quality audits that offer an organization's comprehensive analysis of financial procedures, guaranteeing adherence to regulatory regulations and accounting guidelines (DeAngelo, 1981). Strict monitoring contributes to the identification and prevention of fraud and financial misstatements, strengthening the reliability of financial reporting (Francis, 2004). According to empirical data, companies that perform excellent audits have higher investor trust, which boosts efficiency in operations and lowers capital costs (Becker et al., 1998). Moreover, quality audits enhance risk prevention and utilization of resources, which improves overall business performance (Chen et al., 2005; Adusei, 2019). As a result, excellent audit quality supports robust corporate governance by coordinating management decisions with shareholder needs and encouraging effective company operations.

H5: There is a positive association exists between quality and firm efficiency

Because their wealth is closely correlated with the firm's performance, managers who possess a sizable stake in the business are more inclined to behave in the best interests of the organization (Meckling & Jensen, 1976). Because managers are driven to increase company value and operational effectiveness, this convergence of interests encourages more conscientious and effective managerial behaviors (Morck et al., 1988). Research has demonstrated that companies with greater executive ownership typically display superior performance measures (McConnell & Servaes, 1990). Furthermore, by encouraging an accountable culture and strategic planning for the long term, executive ownership can support other governance measures like board independence (Morck et al., 1988). As a result, management ownership is essential for increasing company efficiency by better aligning legitimate corporate governance.

H6: There is a positive association exists between Managerial Ownership firm Efficiency

Because ownership concentration gives substantial shareholders the ability and motivation to properly oversee management, it improves corporate efficiency (Shleifer & Vishny, 1986). The ability and desire of these powerful shareholders to hold CEOs responsible and exert influence over management choices might improve the effectiveness of the company (Holderness, 2003). According to empirical data, companies with concentrated ownership typically outperform others because of lower agency costs and superior governance procedures (Thomsen & Pedersen, 2000). Moreover, a centralized ownership structure can improve independent directors' ability to oversee management and ensure that their actions align with the interests of all shareholders. This, in turn, has the potential to create more independence on the board (La Porta et al., 1999). Increasing the efficiency of a corporation may be accomplished through the use of increased monitoring and more effective corporate governance when ownership is centralized.

H7: There is a positive association exists between Ownership Concentration firm Efficiency

Family ownership fosters effective monitoring and long-term planning, both of which have the potential to have a favorable impact on the link between corporate governance and the efficiency of business operations. Because family-owned enterprises typically have a vested interest in the company's long-term profitability and reputation, they may be more likely to implement more cautious governance practices (Anderson & Reeb, 2003). Independent directors have the potential to contribute to further improving the atmosphere in these sorts of organizations by providing impartial monitoring and lowering the likelihood of a conflict of interest that may arise as a result of family involvement (Villalonga & Amit, 2006). Research indicates that family-owned companies with robust governance structures, such as independent boards, typically demonstrate greater effectiveness and superior performance (Maury, 2006). According to Anderson, Mansi, and Reeb (2003), the combination of family ownership and board independence helps to cultivate a governance structure that places an emphasis on long-term shareholder value and assures effective monitoring, which eventually results in greater corporate efficiency. Therefore, through improved governance procedures, family ownership can bolster the beneficial effect of board independence on company efficiency.

H8: Family ownership moderates between corporate governance and firm efficiency

Islamic principles particularly prioritize accountability, openness, and justice in business dealings, which are upheld by Shariah-compliant companies (Haniffa & Hudaib, 2007). These ideas are highly compatible with the goals of board independence, which is to guarantee impartial and efficient management monitoring. According to empirical research, Shariah-compliant businesses frequently display more investor confidence and trust, which boosts their operational effectiveness (El-Gamal, 2006). Furthermore, Shariah compliance's moral standards uphold independent members' oversight and management of business operations, improving the overall caliber of governance (Farook et al., 2011). Because of this, Shariah compliance can reinforce the beneficial effects of board independence on company efficiency by promoting a governance climate based on moral behavior and strict supervision.

H9: Shariah Compliance moderates between corporate governance and firm efficiency

Methodology

Population and Sampling

Data from 475 non-financial firms covered 87% of the Pakistan Stock Market in this study. In the textile industry, for example, there are weavers, woolens, spinners, and composites. A variety of industries will be covered, including chemicals, cement, mining, fertilizers, pharmaceuticals, oil and gas marketing, synthetic and rayon, refineries, engineering, automobile parts and accessories, auto assembly, transportation, glass and ceramics, cable and electrical goods, leather and tanneries, food and personal care products, technology and communication, paper and board, sugar and allied industries. The data collection for this study, the State Bank of Pakistan website, the company's annual reports, and the Pakistan Stock Exchange website were used. For this study, sample panel data of firms was analyzed for the period of ten years, i.e., from 2014-2024.

EconometricModel

The following equation shows internalcorporate governanceand firmEfficiencyrelationship.

$$FE_{i,}=\beta_0+\beta 1AC+\beta 2BI+\beta 3BS+\beta 4MO+\beta 5OC+\beta 6AQ+\beta 7GDD+\beta 8FAGE+\beta 9FSIZE+\beta 10LEV+\beta 11PR+\beta 12SG+\varepsilon_{i,t}$$

$$FE_{i,}=\beta_0+\beta_1 CG_{i,t}+\beta_2 FO_{i,t}+\beta_3(CG*FO)_{i,t}+\beta_i Conrols_{i,t}+\varepsilon_{i,t}$$

$$FE_{i,}=\beta_0+\beta_1 CG_{i,t}+\beta_2 SC_{i,t}+\beta_3(CG*SC)_{i,t}+\beta_i Conrols_{i,t}+\varepsilon_{i,t}$$

In the above equations, FE is firm efficiency which is measured as the dependent variable, B0 is constant, and others are coefficients like Audit Committee, Board Independence, Board Size, Managerial Ownership, Ownership Concentration, Audit Quality, and Gender Diversity are Independent Variables. Firm Age, Firm Size, Leverage, Profitability, and Sales Growth are control variables, and ε_i is the error term. Where FO is family ownership, CG* FO is the interaction of corporate governance variables with family ownership. Where SC represents Shariah compliance firms, and CG* SC is the interaction of corporate governance variables with Shariah compliance.

Measurements

Table 1

Measurements

Categories	Factors	Symbol	Measurements
Dependent	Firm Efficiency	FE	Technical efficiency measured through data envelopment analysis (DEA)
	Audit Committee	AC	The ratio of independent directors in the audit committee
	Board Independence	BI	The number of independent outside board of directors/board size
	Board Size	BS	Number of Board Members
	Managerial Ownership	MO	Percentage of shares held by executives
	Ownership Concentration	OC	Shares owned by the five largest shareholders / total number of outstanding shares
	Audit Quality	AQ	A dummy variable that equals "1" if a firm is audited by Big 4, or "0" otherwise
	Gender Diversity	GD	Total number of females on the board
Moderator	Family Ownership	FO	Measured by major (more than 50%) share held by one family member or family
	Shariah Compliance	SC	Dummy variable that equals "1" if a firm is Shariah Compliant or "0" otherwise
Control	Firm Size	FS	Natural log of total assets
	Firm Age	FA	Number of years a firm is established
	Leverage	LEV	Total debt / total assets
	Profitability	PR	Net earnings / total assets

Sales Growth	SG	Current year sales – Previous year's sales / last year's sales

Data Analysis Techniques

OLS regression estimation utilize in the investigation for evaluating the relationships between the variables. To ensure result dependability, diagnostic techniques consist of the Bruesh-Pegan analysis for anomalies and the Cook-Weisberg test for heteroscedasticity. The appropriateness of a fixed or random effects model is determined by the Hausman Test. Furthermore, complex factor interaction and unobserved variation are taken into account using full-factor model estimation and fixed-effect approaches.

Data Analysis

Table 2

Correlation matrix

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. FE	1.004	.4630	--														
2. AC	.8800	.6883	.317*	--													
3. BI	.9142	.4957	.297*	.139	--												
4. BS	1.006	.8116	.301*	.159*	-.17	--											
5. MO	.8687	.7208	.184*	.184*	.127*	.489*	--										
6. OC	1.002	.8689	.278*	.249*	.048	.261*	.189*	--									
7. AQ	1.114	.4048	-.11	.082*	.016	.127	.054	-.09	--								
8. GD	.9821	.7914	.257*	.284*	.037	.131*	-.09	.197*	-.11	--							
9. FO	1.007	.8178	.301*	.179*	-.49	.183*	.188*	.170*	-.12	.139*	--						
10. SC	.9983	.7760	.129*	.186*	.027	.182*	.151*	.122*	.101*	.248*	.136*	--					
11. FS	1.824	.3806	.016	-.04	.017	.035	.130*	.017	-.02	.006	.084	.068	--				
12. FA	1.304	.4601	.241*	.242*	.079*	.197*	.125	.298*	.132*	.106*	.330*	.214*	.040	--			
13. Lev	.8720	.6935	.181*	.137*	.052*	.212*	.141*	.142*	.098	.364*	.252*	.135*	.072	.253*	--		
14. Pro	.4426	.1058	.192*	.172*	.038*	.179*	.121*	.186*	.023	.192*	.166*	.221*	.132*	.189*	.160*	--	
15. SG	.3815	.1124	.268*	.236*	-.09	.276*	.281*	.277*	.218	.244*	.286*	.251*	.190*	.198*	.335*	.252*	--

Note: FE: Firm Efficiency, AC: Audit Committee, Obs: Observation, M: Mean, SD: Std.Dev

Table 2 summarizes key variables related to corporate governance and financial success from a dataset of 2475 observations, providing mean (M) and standard deviation (SD) values. Correlation analysis reveals associations between variables, such as positive correlations between Firm Efficiency (FE) and Board Independence (BI) and between Audit Quality (AQ) and variables like Shariah Compliance (SC) and Gender Diversity (GD).

Regression Diagnostics

Table 3 assesses multicollinearity through VIF and independent variable tolerance values. Most variables meet O'Brien's (2007) standards, with VIF values below ten and Tolerance values more than .20, though some exhibit moderate collinearity.

Table 3

Multicollinearity

Variable	VIF	Tolerance
Board Independence	3.6	.277
Board Size	4.9	.204
Audit Committee	4.1	.243
Managerial Ownership	2.1	.476
Ownership Concentration	2.5	.401
Audit Quality	3.1	.322
Gender Diversity	2.9	.344
Shariah Compliance	3.8	.263
Family Ownership	4.8	.208
Firm Size	2.9	.344

Variable	VIF	Tolerance
Firm Age	3.7	.270
Leverage	4.8	.208
Profitability	3.8	.263

DV: Firm Efficiency

Cook-Weisberg test

The Cook-Weisberg test was utilized by the researcher to evaluate the heteroscedasticity in the data. These are the theories.

Ho: Constant variance (homo)
H_1: Un-constant variance (hetero)

Table 4
Cook-Weisberg test result

$Chi^{2(1)}$	Sig
18.36	.001

$p<.05$

The Cook-Weisberg test in Table 4 indicates heteroscedasticity within the regression framework (Chi2(1) = 18.36, p =.001). The small p-value indicates that the homoscedasticity null hypothesis is rejected, pointing to the necessity of addressing different residuals.

Bruesh-Pegan Test

To determine which of the OLS and random effect models was the most appropriate, the Breusch-Pagan test was employed. The theory is presented below.

H_0: OLS model
H_1: Random Effect model

FP[year,t] = Xb + u[year] + e[year,t]

Table 5
Bruesh-pegan test

Variables	Var	sd=sqrt (var)	P
Firm Efficiency	.2143623	.4629927	
E	.0135462	.1163879	.812
U	0	0	

Table 5 presents the results of the Breusch-Pagan test, which assesses heteroscedasticity in a regression model with "Firm Efficiency" as the dependent variable. Substantial p-values (>0.05) for the unique component (U) and explanatory variable (E) confirm the study's homoscedasticity. This indicates that the residual variance remains mostly consistent across different levels. These diagnostic approaches ensure regression evaluations' dependability and hypotheses' precision.

Hausman Test

We used the Hausman test to determine which of the fixed effect and random effect models was the most suitable (Wooldridge, 2019; Black et al., 2003; Charnes et al., 1978). This hypothesis is presented below.

H_0: Random Effect model
H_1: Fixed Effect model

Table 6
Hausman test

Variable	RE	FE	Difference	SE
Board Independence	.3161068	.3161184	-.0000116	.04512
Board Size	.0862305	.0861727	.0000577	.03581
Audit Committee	.1261938	.1262899	-.0000961	.03617
Managerial Ownership	.1703246	.1709892	-.0006646	.05861
Ownership Concentration	.0132532	.0131535	.0000997	.02697
Audit Quality	-.0087676	-.0087635	-4.16e-06	.02587
Gender Diversity	.0139841	.0139397	.0000444	.03664
Shariah Compliance	.135971	.1356722	.0002988	.05879
Family Ownership	.0276605	.027393	.0003675	.02591
Firm Size	.0206639	.0205571	.0001068	.03697
Firm Age	-.0380402	-.0379778	-.0000625	.01512
Leverage	.0707971	.0708157	-.0000186	.01459
Profitability	.0011706	.0011895	-.0000189	.06321

DV: Firm Efficiency, Chi^2=13, p<.000

Comparing fixed effects (FE) and random effects (RE) models for various independent factors in panel data analysis, Table 6 shows the results of the Hausman test. For the majority of variables, substantial variations support the fixed effects model, suggesting a relationship between independent factors and unobserved variations in effects. Systematic differences explain the constant preference for the fixed effects model among factors, indicating the relevance of the framework to the investigation. The fixed effects model may be useful in identifying effects that are unique to each individual, as indicated by the rejection of the null hypothesis for every factor.

Ordinary Least Square (OLS)

For a deeper understanding of complicated interactions within the dataset, the OLS regression models were used (Wooldridge, 2019).

Table 7

OLS outcome

Firm Efficiency	Coef.	Std. Error.	t	P
Board Independence	.3161068	.0050844	62.17	0.000
Board Size	.0862305	.0082749	10.42	0.000
Audit Committee	.1261938	.0080904	15.60	0.000
Managerial Ownership	.1703246	.0135056	12.61	0.000
Ownership Concentration	.0132532	.0096186	1.38	0.168
Audit Quality	-.0087676	.0062243	-1.41	0.159
Gender Diversity	.0139841	.0037339	3.75	0.000
Shariah Compliance	.135971	.0084233	16.14	0.000
Family Ownership	.0276605	.0085237	3.25	0.001
Firm Size	.0206639	.0065927	3.13	0.002
Firm Age	-.0380402	.010017	-3.80	0.000
Leverage	.0707971	.0074666	9.48	0.000
Profitability	.0011706	.0012052	.97	0.331
Cons	.1378969	.0180306	7.65	0.000

F=251.45, p<.05, R^2=.68 DV: Firm Efficiency

Table 7 demonstrates the factors affecting firm efficiency. The model found significant (F Stats, 251.45, p<.05) with an R-square of 0.68. Board Independence (β: 0.3161, p<.000), board size (β: 0.0862, p<.000), audit committee (β: 0.1262, p<.000), managerial ownership (β: 0.1703, p<.000), gender diversity (β: 0.0140, p<.000), shariah compliance (β: 0.1360, p<.000), family ownership (β: 0.0277, p<.002), firm size (β: 0.0207, p<.000), firm age (β: -0.0380, p<.000), leverage (β: 0.0708, p<.000), and constant term (β: 0.1379,

p<.000), significantly effects firm efficiency. The ownership concentration (β: 0.168, p>.05) and profitability (β: 0.331, p>.05) demonstrate insignificant effects.

Fixed Effect

Fixed Effect Model Estimation

Table 8

Variables	Coef.	Std. Error.	T	p	95% CI	
Board Independence	.315786	.0054585	57.85	0.000	.305081	.326490
Board Size	.0895413	.0092987	9.630	0.000	.071305	.107777
Audit Committee	.1227004	.0102856	11.93	0.000	.102528	.142872
Managerial Ownership	.171031	.0134802	12.69	0.000	.144594	.197467
Ownership Concentration	.012347	.0102273	1.21	0.227	-.00771	.032404
Audit Quality	-.009116	.0066395	-1.37	0.170	-.02213	.003905
Gender Diversity	.0160282	.004542	3.53	0.000	.007120	.024935
Shariah Compliance	.134304	.0085467	15.71	0.000	.1175426	.151065
Family Ownership	.024553	.0107389	2.29	0.022	.003492	.045614
Firm Size	.0203284	.0073174	2.78	0.006	.005977	.034679
Firm Age	-.0358531	.0095219	-3.77	0.000	-.054552	-.01717
Leverage	.075202	.0085122	8.83	0.000	.0585083	.091895
Profitability	.0040016	.0026836	1.49	0.136	-.001261	.009264
Cons	.1364357	.0189658	7.19	0.000	.099240	.173630

F=163.51, p<.05, R^2=.72 DV: FE

Table 8 demonstrates that the fixed effects model evaluates factors influencing business efficiency. The model found significant (F Stats, 163.51, p<.05) with an R-square of 0.72 showing significant variability. Board Independence (β: 0.315, p<.000), board size (β: 0.089, p<.000), audit committee (β: 0.122, p<.000), managerial ownership (β: 0.171, p<.000), gender diversity (β: 0.0160, p<.000), shariah compliance (β: 0.134, p<.000), family ownership (β: 0.0245, p<.002), firm size (β: 0.020, p<.000), firm age (β: -0.0358, p<.000), leverage (β: 0.0752, p<.000), and constant term (β: 0.136, p<.000), significantly effects firm efficiency. The ownership concentration (β: 0.227, p>.05), audit quality (β: 0.170, p>.05), and profitability (β: 0.136, p>.05) demonstrates insignificant effects.

Tobit Regression

Tobit regression offers a method for modeling the relationship between variables, even in cases when censoring prevents some values from being observed.

Table 9

Tobit regression

Firm Efficiency	Coef.	Std. Error.	t	p
Board Independence	0.125914	0.020844	6.04077912	0.000
Board Size	0.23691	0.0674	3.51498516	0.000
Audit Committee	0.16298	0.01809	9.00919825	0.000
Managerial Ownership	0.10321	0.01561	6.61178732	0.000
Ownership Concentration	0.26478	0.192018	1.37893323	0.597
Audit Quality	-0.0172	0.142243	-0.12091983	0.691
Gender Diversity	0.02369	0.007412	3.19616838	0.000
Shariah Compliance	0.1259	0.018423	6.83373771	0.000
Family Ownership	0.127661	0.02523	5.0598692	0.001
Firm Size	0.2139	0.105927	2.01931519	0.002
Firm Age	-0.02804	0.01015	-2.76256158	0.000
Leverage	0.70797	0.324666	2.18061023	0.000
Profitability	0.04706	0.02052	2.29337232	0.301

Cons	0.137897	0.018031	7.6479374	0.000

F=51.52, p<.05, R^2=.42 DV: Firm Efficiency

Table 9 presents Tobit Regression results investigating factors influencing Firm Efficiency. Significant variables ($p < 0.05$) include Board Independence, Board Size, Audit Committee, Managerial Ownership, Gender Diversity, Shariah Compliance, Family Ownership, Firm Size, Firm Age, Leverage, and Cons. The F-statistic (F=51.52) confirms the overall model significance, with an R-squared of 0.42 indicating it explains 42% of firm efficiency variation. These findings provide decision-makers with factual insights into ownership and corporate governance's impact on firm efficiency.

Structural Paths

Direct & Moderating Effect

The effects of family ownership, Shariah compliance, internal corporate governance, and their interconnections on business efficiency are shown by the Structural Equation Model (SEM) paths. Efficiency is greatly increased by strong internal corporate governance (path coefficient: 0.744, p < 0.001), and efficiency is also highly impacted by adhering to Shariah regulations (path coefficient: 0.166, p < 0.001). On the other hand, efficiency is negatively moderated by the combined effect of Shariah compliance and internal governance (path coefficient: -0.146, p < 0.001), suggesting a less favorable combination effect. However, there appears to be no substantial influence on efficiency from the statistically negligible interaction effect between family ownership and corporate governance. SEM, in general, brings to light the complex relationships between these factors and how they affect the efficiency of the organization.

Full Factor Model Estimation

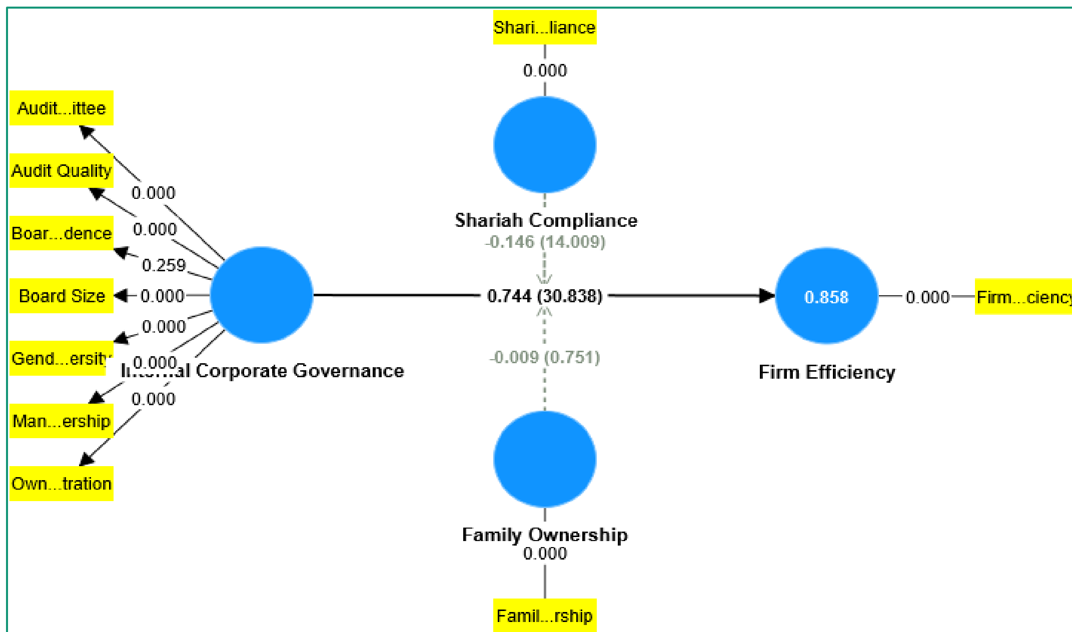

Table 10

SEM path model

SEM Paths	OS	SM	(STDEV)	t	p
Family Ownership -> Firm Efficiency	0.023	0.023	0.017	1.362	0.173
Internal Corporate Governance -> Firm Efficiency	0.744	0.744	0.024	30.838	0.000
Shariah Compliance -> Firm Efficiency	0.166	0.166	0.014	11.514	0.000
Shariah Compliance x Internal Corporate Governance -> Firm Efficiency	-0.146	-0.146	0.01	14.009	0.000
Family Ownership x Internal Corporate Governance -> Firm Efficiency	-0.009	-0.009	0.012	0.751	0.452

Note: OS: Original Sample, SM: Sample Mean

Discussion

An extensive examination of the connections between important factors and firm efficiency is presented in a discussion. The impact of board independence (Hypothesis 1) on business efficiency is confirmed by its positive association with it, which is consistent with previous research (Bhimani, 2008); (Jackling & Johl, 2009; Muniandy & Hillier, 2015). Bhagat & Bolton (2019) and Van Khanh et al. (2020) support the second hypothesis, which asserts that the size of the board significantly influences the firm's efficiency. Omar, Rahman, and Hamid (2018) and Contessotto and Moroney (2014) provide evidence that supports Hypothesis 3, which states that a well-functioning audit committee has a beneficial effect on firm efficiency. Ang et al. (2007) and Contessotto & Moroney (2014) revealed positive relationships between management ownership and business efficiency, supporting Hypothesis 4. Raimo et al. (2020) found no significant effects of ownership concentration (hypothesis 5) on business efficiency. Audit quality (hypothesis 6) has a minor effect on company efficiency, contrary to popular belief, as found by Al-Ani and Mohammed (2015). According to Post and Byron (2015) and Campbell and Minguez-Vera (2008), gender diversity (hypothesis 7) improves business efficiency. Mehmood et al. (2021) found that shariah compliance (hypothesis 8) negatively moderates the correlation between good corporate governance and efficient businesses. However, Hypothesis 9's moderating role reveals a surprising negative correlation or non-significant association between family ownership and firm efficiency, defying expectations and aligning with Chu (2011) and Giovannini (2010). These results emphasize the complexity of corporate governance dynamics and their varying impacts on company efficiency, highlighting the need for additional research and better conceptual frameworks to understand company performance.

Recommendations

Companies should concentrate on a few critical methods to increase firm efficiency. First and foremost, they ought to work on strengthening board independence by adding independent directors and putting in place policies that encourage unbiased decision-making. To achieve a balance between a diversity of experience and efficient decision-making, it is also imperative to optimize the size of the board. Thirdly, companies ought to invest in bolstering their audit committees through frequent training, varied skill sets, and effective communication. Aligning managerial interests with corporate aims can also be achieved by promoting executive ownership via stock options or other means. Even while concentrating ownership might not have a significant impact on business efficiency, organizations ought to weigh its benefits and drawbacks in light of their unique goals and circumstances. Keeping abreast of audit standards, cultivating candid discussions with the auditors, and assessing and enhancing internal controls are all necessary to address issues regarding audit quality. In addition, it's critical to advance gender diversity via inclusive regulations, mentorship programs, and diverse board nominations. To maximize business efficiency, it is also advised to reevaluate the incorporation of Shariah compliance and reevaluate family-owned factors, including open structures of governance and arbitration.

Conclusion

The importance of corporate governance components on business efficiency is highlighted by this study. Key findings show that managerial ownership, board size, performance of the audit committee, and board independence all positively correlate with corporate efficiency. Yet, additional research is required due to the negligible effects of concentrated ownership, the detrimental effect of audit quality, and the unexpectedly negative link between family investment and corporate governance. The favorable correlation between gender diversity and business efficiency highlights the significance of diversity and inclusion programs. The minimal influence of Shariah compliance on effectiveness and governance points to the necessity of strategic alignment. The research's practical significance for businesses looking to improve their governance structures for long-term performance should be recognized, notwithstanding its shortcomings. Organizations can cultivate resilience, innovation, and overall competence in maneuvering across the intricate terrain of corporate responsibility by putting into practice thoughtful ideas.

Theoretical Contribution

By integrating agency and stewardship theories with their results, this study advances the philosophy of corporate governance. Agency theory emphasizes aligning values to maximize efficiencies; positive relationships between audit committee effectiveness, board independence, board size, and managerial ownership support this idea. However, the surprising inverse relationship between family ownership and governance calls into question long-held beliefs about agency and calls for a more thorough study of familial dynamics. The structure is further complicated by the minimal influence of Shariah compliance on moderating governance efficiency, which raises questions about subtleties in the implementation of stewardship theory. All things considered, the study offers empirical insights that improve and harmonize stewardship and agency viewpoints, strengthening a conceptual comprehension of corporate governance processes.

Practical Implication

The study has numerous ramifications for executives, professionals, and lawmakers. Increasing board independence, bolstering audit committees, and maximizing board size can improve decision-making and responsibilities, which will ultimately increase corporate efficiency. Encouraging managerial ownership fosters motivation and dedication by bringing managers' interests into line with those of shareholders. It is essential to give audit quality programs top priority and to carefully consider ownership structures, particularly ownership concentration and familial ownership. Diverse viewpoints can be used to maximize the benefits of diversity and inclusion initiatives with aggressive backing. Long-term performance depends on reevaluating Shariah compliance and regularly reviewing governance practices by changing industry standards. With the help of strong corporate governance, these understandings enable businesses to improve operational performance.

Limitations

The study is limited despite its insightfulness. Its context-specificity could make it less generalizable. Comprehension of causation is hampered by cross-sectional designs. Variables might not be fully captured by the metrics utilized. Perhaps important details were missed. It is advised not to assume generalizability beyond the investigated population. Results are impacted by the quality of the data. Complicated familial ownership and variability may have an impact on the outcome. Governance adaptation may be overlooked by static analysis. More research is necessary for complex relationships. A thorough comprehension necessitates acknowledging these limits.

Future Research

Longitudinal studies may be investigated in future studies to comprehend the effects of governance development on corporate efficiency. Industry-specific studies can highlight subtleties in governance. Comparisons among cultures could shed light on how culture affects the dynamics of governance and performance. Multifaceted insights may be obtained using thorough governance indexes. Elements concerning behavioral governance should be investigated. The effects of modifications to laws on the effectiveness of governance deserve further study. It is necessary to research how technology affects productivity and governance. It is necessary to investigate how sustainability integration affects corporate efficiency and accountability. Research on how board diversity affects decision-making is one such direction. Analysis of governance's function in fostering resilience in the face of economic shocks is necessary.

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