

Directors' characteristics, Firm-specific factors, and Shariah-compliant status: A logit model analysis in Pakistan

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Abstract

The purpose of this study is to identify the major factors that are significantly influencing the Shariah-compliant status of the listed firms on the Pakistan Stock Exchange (PSX). This research examines the extent to which variations in directors' characteristics and firm-specific factors affect the company's status concerning Shariah compliance. A total of 80 listed companies on the Pakistan Stock Exchange were selected. The data were collected from the companies' financial reports from 2013 to 2017 (N=400). The research models were tested using fixed and random effects logit analysis on STATA 15. The findings reveal that the director's religion, Islamic financing, Islamic institutes' shareholdings, payout ratio, and stock return significantly influence Shariah-compliant status in Pakistan. This study is the first to explore the directors' characteristics and firm-specific factors that impact Shariah-compliant status to the best of our knowledge.

Keywords: *Directors' characteristics, Firm-specific factors, Shariah-compliant, Logit model.*

1. Introduction

Public listed companies, when faced with the dilemma of accrediting with Shariah Compliant status, have to consider several objectives beforehand (Azmi et al., 2017). The concept of Shariah compliance became famous globally in recent years, although it is as old as the religion itself but has been ignored in the conventional system. Moreover, Rasul (2010) believes that even conventional banks value Shariah financial verdicts' interpretations and rulings. In the past few decades, it is observed that some Islamic institutions have been introduced, and other established conventional institutions avail the opportunity to facilitate their Muslim customers with this new market trend and growth of the Shariah-compliant Islamic investment financial sector. The investors seek a return on their investment with peace of mind and faith that their investment conforms to their religion (Ho, 2015).

Farooq et al. (2009) said that although MENA is a Muslim minority region, Shariah-compliant Islamic products are offered side by side with conventional financial institutions in the area. The Islamic financial system has been seen as an alternative to the traditional financial system (Sakti et al, 2016). In 2009, the Vatican (Headquarters of the Christian Catholic Church) advised the world community to take a serious look at Islamic Finance as an alternative to traditional banking (Smolo and Mirakhor, 2010). Concerning this discussion, it is observed that firms nowadays are interested in being Shariah-

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compliant firms in Islamic countries because Muslims give dire consideration to their religious instructions in all aspects of life. Although Callen et al. (2011) state that there is no consent of religion in earning, it is experienced that Shariah-compliant investments have grown rapidly in recent years, especially in Muslim countries (Jamaluddin, 2013).

Previously studies regarding Shariah compliance have been conducted to compare the performance of Shariah-compliant companies with non-compliant companies. Farooq et al (2015) tested the earning management of Shariah-compliant companies. They examined that the Shariah complaint companies have lower chances of managing the MENA region (the Middle East and North African region). Ismail et al (2015) tested the quality of Shariah-compliant earnings in Malaysia. Wooi et al. (2017) tested the impact of a CEO's religion on the performance of Shariah compliance, and Ramli et al. (2018) studied the effect of the CEO's gender on their performance. Many other studies also have been conducted to find the performance of Shariah-compliant companies.

This study contributes to the previous research by exploring the factors that can influence the Shariah compliance of a firm. Despite the growth in Shariah compliance in Islamic countries, there has not been any considerable research that examined the factors affecting Shariah compliance. To the best of our knowledge, this study is the first to explore the factors influencing Sharia-compliant firms. This study can also contribute to the growing discussion on applying Islamic principles in equity markets.

This article's remainder is organized as follows: Section 2 provides a literature review and proposes the hypotheses. Section 3 contains the methodology of data collection and the empirical testing of the hypothesis. Section 4 provides the study results, and Section 5 concludes some important findings and implications revealed in this paper.

2. Literature review

Religion Islam orders to follow specific instructions referencing equity investment. However, it is difficult to find a company that follows Shariah's precepts due to the non-availability of relevant data (Usmani, 1999). Some issues have been disputed among Islamic scholars regarding the characteristics of a Shariah-compliant firm. Most of the problems arise when the company's main activity is Halal (permissible) by Islamic law; however, when the company's financial transactions are examined, it is discovered that the Shariah principles of financing are being violated. Hassan et al. (2010) comprehend that following Shariah principles binds any such company to abstain from victuals (Pork, Alcohol, tobacco), unlawful entertainment (listening to music, watching cinema, indulging in gambling /casinos, pornography, etc.), and riba based financial services (banking, insurance, etc.). Most companies are not avoiding riba, accrued interest-based loans prohibited in Islam. (Rahman et al, 2010). The Shariah scholars have discussed such issues in different situations, so they agreed that if a company wants to be certified as Shariah-compliant, it should not borrow money from conventional banks; should not invest in the business which gives it the interest, and should have a sufficient quantity of liquid assets (Ho, 2015).

Shariah screening methodology:

Shariah screening methodology for Shariah-compliant firms has been developed under the guidance of Mufti Muhammad Taqi Usmani in Pakistan (Usmani, 2002). The shariah-compliant stock index is governed by the Shariah advisory board of Meezan bank (www.meezanbank.com). The screening tests can be classified into two distinct classes: business screening and financial screen (Siddiqi, 2006). It is based on Quran and Hadith. Every listed company at Pakistan Stock Exchange (PSX) can be called a "Shariah-compliant firm" if that stock must fulfill six Shariah filters that are as follows:

Business screen

According to Shariah, the main line of business of the company must be Halal (permissible). Hence, alcoholic drinks, pork production, tobacco, pornography, conventional insurance, and traditional banking or related activities are not permissible.

Financial screen

- b. Debt from conventional banks should be less than 37% of total assets.
- c. Non-Shariah-compliant investments should be less than 33% of the total assets of the company.
- d. The ratio of non-compliant income to assets should be less than 5%. This amount is cleaned out as charity as a pro-rata ratio of dividends given by the company.
- e. The ratio of illiquid assets to total assets should be 25% or more of the company's total assets.
- f. The market price per share should be greater than the value of net liquid assets per share.

These are the tests a firm should fulfill to be Shariah compliant, and it is observed that many previous studies have also discussed screening criteria for other Muslim countries (Ashraf et al., 2017). Unfortunately, there is insufficient work done in the past to examine the factors influencing Shariah compliance status or why a non-compliant firm might decide to be Shariah-compliant or vice versa. In this paper, those factors have been investigated that can affect Shariah compliance in Pakistan. After several meetings with prominent Shariah scholars with financial expertise, we have concluded below essential factors that can be determinants of Shariah compliance.

2.1 Director's Religion:

Muslims believe that they are the vicegerent of Allah on earth (Ammer et al, 2018). Directors of the companies are trustees of Allah, and these directors or managers are responsible for their every action. Thus, they are accounted primarily to the company they work for and ultimately to God Almighty (Rahman, 2012). Therefore, Muslim directors are obliged to safeguard the interests of all stakeholders (shareholders, employees, suppliers, customers, externalities, etc.) They must ensure involvement in only Halal operations. Bardai (2002) looked into the influence of directors' religion on the company's decisions. He stated that the Muslim directors of the company in a Muslim country must do all activities and decisions according to Islam. Muslim directors would be more interested in making the firm Shariah-compliant because of their religious perspective. Based on this theory, the following hypothesis is proposed:

H1: The probability of Shariah compliance increases as the number of Muslim directors increases.

2.2 Director's Gender:

It is common to argue that male leaders are more effective in decision-making than female leaders in business concerning the financial perspective (Fairlie et al., 2009). Men are proven to make more practical and cost-effective decisions for their firms than their counterparts (Broadbridge and Hearn, 2008; Ramli and Surbaini, 2018). According to Almeida and Bremser (2014), in today's modern world, the leadership style of women has changed and modernized over time. Women are believed to do wonders if allowed to perform. When charged with making a crucial decision, men harness their efforts to make that decision alone. However, women, when given the same task, think about making decisions as well as the impact of those decisions, which can put pressure on them. (Huston, 2016). Although religiousness (Kate Miriam Loewenthal, 2001) stated, Muslim women, are not as much religious as Muslim men. Hence, in this regard, they would make religious decisions for the firms as managers. However, from the perspective of

decision-making, there is a probability that women can make big decisions for the firm solely and create that firm compliant as well. In light of the above discussion proposes the following hypothesis:

H2: The probability of Shariah compliance increases as the number of female directors increases.

2.3 Volume Trade:

Barber and Odean (2008) say that individual investors prefer to buy the company's stock with attention-grabbing or highly traded stock. Likewise, Aspara and Tikkanen (2010) believe investors purchase shares of the company they are familiar with. In Muslim countries like Pakistan, people are conscious about ensuring that their earnings are being generated from a Halal (Islamic permissible) source, so they prefer to buy Shariah-compliant firms, making it highly traded stock. Following the above literature, the following hypothesis is proposed:

H3: The probability of Shariah compliance increases as the trade of stock increases.

2.4 Payout Ratio:

The payout ratio may have a significant impact on the stock return. It can affect the shareholder's interest also. According to Ansem (2009), the stock price profits of dividend-paying firms are lower than non-paying firms. It means the dividend payout ratio can make a significant impact on the company's future status. Nainggolan (2011) says that Muslims may give up some returns to satisfy their Halal earnings belief, so Shariah-compliant companies should have a higher payout ratio than non-compliant firms (Farooq O., 2013) stated in his study conducted in the MENA region. Thus, concerning our study, the following hypothesis is proposed:

H4: The probability of Shariah compliance increases as the payout ratio increases.

2.5 Merger and Acquisition:

Many multinational and local companies are undergoing mergers or acquisitions to achieve growth, human capital, or enter a new market (Srivastava, 2018). Many financial and non-financial companies are being merged with or acquired by other companies (Hunjra and Abbas, 2014). In the recent past, some Islamic banks in Pakistan received some conventional banks and then made them Islamic. It clearly shows that if a Shariah-compliant acquires a non-compliant company, it can affect the status of the company; thus, the following hypothesis is proposed:

H5: The probability of Shariah compliance increases as the company has been merged or acquired by another company.

2.6 Sales Growth:

Most companies value growth in sales (Brush et al, 2000). Companies include their sales growth history in their financial reports as a good indicator. In Islamic countries like Pakistan, people can prefer to purchase the products of those company that fulfills Shariah requirements rather than the non-compliant competitor company, which leads to an increase in the sales of Shariah-compliant companies. Testing the impact of sales growth on Shariah compliance, the following hypothesis is proposed:

H6: Probability of Shariah compliance increases sales.

2.7 Islamic Financing:

Muslims are obliged to follow the Islamic principles in financing as they do in other aspects of life and do not earn via non-permissible means (Al-Quran). Islam prohibits paying and taking interest in both (Muslim). Shariah-compliant companies are eager to acquire finance from Islamic financial institutions rather than conventional ones, while

non-compliant companies don't consider such responsibility. Based on this theory, the following hypothesis is proposed:

H7: The probability of Shariah compliance increases as Islamic financing increases.

2.8 Islamic Institute Shareholding:

Muslims are using the concept of Modaraba for investment requirements since the time of the Holy Prophet Muhammed (peace be upon him) (Al-Barwari, 2002). Muslims are believed to be pioneers in making investments on a profit and loss-sharing basis (Alam et al., 2017). Islamic financial institutions prefer to invest in Shariah-compliant companies rather than non-compliant firms, so the stock of Shariah-compliant companies attracts investors with Islamic ideology. To test this argument, the following hypothesis is proposed:

H8: The probability of Shariah compliance increase as Islamic institutes' shareholding increases.

2.9 Stock Return:

Höbarth (2006) states that its financial performance can predict the return to share. In his study, the company with low liquidity, fewer liabilities, and more equity significantly impacted stock return. According to the Shariah compliance test b and e mentioned above, a Shariah-compliant company should have low liquidity with fewer liabilities that might affect its stock return. To test the impact on stock return by Shariah compliance, the following hypothesis is proposed:

H9: The probability of Shariah compliance increases as the stock return increases.

Conceptual model

In this study, we extended the previous work done by (Hooy and Ali, 2017; Ramli and Surbaini, 2018) by investigating Shariah-compliant status factors. This research examines the extent to which variations in directors' characteristics and firm-specific factors influence Shariah-compliant status in Pakistan. The factors added in this study are taken from the previous literature (Hooy and Ali, 2017; Ramli and Surbaini, 2018) and contemporary Shariah scholars (see Notes at the end). The following conceptual model has been proposed:

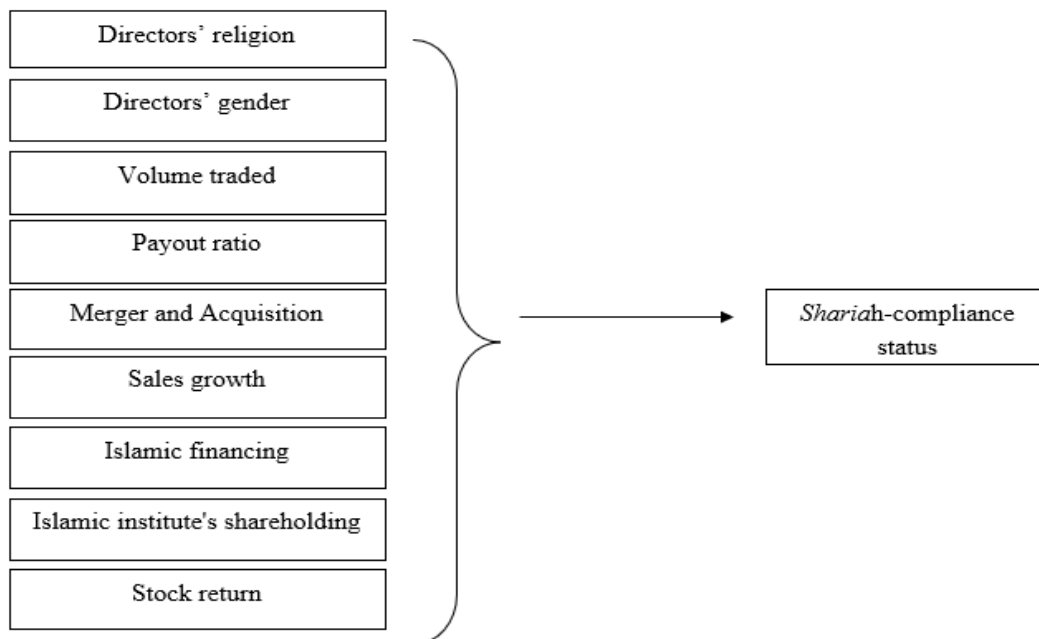


Figure 1 Conceptual Model

3. Methodology

Data was collected from the annual financial reports of the companies. A total of 80 companies are selected based on convenient sampling from which the majority of the companies are registered with the Pakistan Stock Exchange. Among those 80 companies, 40 companies are Shariah-compliant, while the remaining 40 are non-compliant as per the list of Islamic indices issued by the Pakistan Stock Exchange's announcement of 2018. The five years' data has been taken from the years 2013 to 2017.

Shariah compliance is the dependent dummy variable where Shariah compliance is considered 1, and non-compliance is regarded as 0. And independent variables are Muslim directors of the company, female directors of the company, the company's volume traded, growth in the company's sales, the company's payout ratio, Islamic financing of the company, percentage share of Islamic institutes' in the total shares of the company, and merger or acquisition.

In the first step, we tested the endogeneity from the Hausman test by applying STATA. Then as (Leiby 2017) and (Boekestein 2015) used logistic regression for the binary outcome, we also used binary logistic regression to test these factors' effect on Shariah compliance. However, we also tested the data with both fixed and random effect panels to make the results more reliable.

3.1 Model Equation:

$$L = \ln\left[\frac{p}{1-p}\right] = \alpha_{ij} + \beta_{ij}DR + \beta_{ij}DG + \beta_{ij}Vol + \beta_{ij}PR + \beta_{ij}MnA + \beta_{ij}SG + \beta_{ij}IF + \beta_{ij}IIS + \beta_{ij}SR$$

Table I. Variable description

Variables name	Source	Measurement
Dependent Variable		
Shariah-compliance status (SC)	(Usmani, 2002)	Shariah-compliant status = 1, Non-Shariah compliant status = 0 (see Shariah screening criteria)
Independent Variables		
Directors' religion (DR)	(Hooy and Ali, 2017)	It is measured by the company's Muslim directors' portion of all directors.
Directors' gender (DG)	Ramli and Surbaini, 2018	It is measured by the portion of female directors among all directors.
Volume traded (Vol)	Self-created	Annually stock is traded in the stock market.
Payout ratio (PR)	Nainggolan (2011)	It is measured by paid divided by total net income.
Merger and Acquisition (M&A)	Self-created	Merger or Acquisition= 1 Neither Merger nor Acquisition = 0
Sales growth (SG)	Self-created	Company's annual sales growth related to the previous year
Islamic Financing (IF)	Self-created	Company's Islamic financing share in the total financing of the year
Islamic Shareholding (IIS)	(Alam <i>et al</i> , 2017).	Company's Islamic (Funds, Modaraba) shareholding portion in total shares
Stock return (SR)	Self-created	(Current share price- previous share price)/ previous share price

4. Data Analysis

Table II shows the descriptive statistics outputs mean, standard deviation, and correlation among variables. The results show a significant correlation between Islamic Finance / Shariah non-Shariah firms, Islamic Institute shareholding / Shariah non-Shariah, and Muslim Director / Shariah non-Shariah. Sales Growth and volume growth have an insignificant association with Shariah non-Shariah firms. This supports the literature

review that there has been more sales and volume growth in the non-Islamic sector than in Islamic offerings. In Pakistan, the majority of the shares in the stock market are still not Shariah-compliant. Thus, in terms of ratio, the overall investment in the Pakistan stock exchange is more in the non-Shariah-compliant sector than the Shariah-compliant industry of the stock exchange.

Table II. Correlations

Variables	Mean	Standard Deviation	Sha NSh	Sales Growth	Vol Growth	Islamic Fin	Isl Shrh ldn	MusDir	Fem Dir	Acq Mer	Payout ratio	Return to Share
Sha NSh	.43	.50	1									
Sales Growth	9.42	51.23	-0.047 (0.348)	1								
Vol Growth	710.67	12106.57	-0.044 (0.376)	-0.007 (0.889)	1							
Islamic Fin	14.59	28.27	.160** (0.001)	0.010 (0.838)	0.023 (0.643)	1						
Isl Shrh ldn	.76	1.88	.153** (0.002)	-0.022 (0.657)	-0.022 (0.668)	0.026 (0.603)	1					
Mus Dir	8.41	16.56	.212** (0.000)	-0.043 (0.389)	-0.024 (0.635)	-0.032 (0.522)	-0.02 (0.68)	1				
Fem Dir	6.99	11.72	-0.052 (0.300)	0.039 (0.434)	-0.029 (0.569)	-0.091 (0.070)	-.117* (0.02)	-.145** (0.004)	1			
Acq Mer	.04	.19	-0.039 (0.442)	0.050 (0.320)	-0.010 (0.842)	0.045 (0.374)	-0.05 (0.326)	0.036 (0.473)	-0.02 (0.772)	1		
PAYOUT RATIO	26.78	203.17	0.090 (0.071)	0.006 (0.900)	-0.006 (0.899)	0.024 (0.631)	0.005 (0.92)	.113* (0.024)	0.024 (0.64)	0.014 (0.79)	1	
Return to Share	28.59	63.89	.106* (0.034)	.118* (0.019)	0.007 (0.895)	0.092 (0.065)	0.052 (0.3)	-0.038 (0.453)	-0.07 (0.19)	-0.002 (0.97)	-0.002 (0.972)	1

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

*. Correlation is significant at the 0.05 level (2-tailed).

The independent variables of the study (Shown in Table I) include the company's director's religion, the company's director's gender, the company's annual stock traded growth, the company's payout ratio, either company had been merged or acquired from other company, company's annual sales growth, company's Islamic financing share in total financing, Islamic institutes' shareholdings in company's shares and company's return to share.

As seen from Table III, the logit regression coefficients of the variables influencing Shariah compliance indicate that the religion of directors, the company's payout ratio, the company's Islamic financing share in total finance, Islamic institutes' shareholdings in the company's claims, and company's return to share are the significant factors that influence on Shariah compliance. The Log-Likelihood ratio revealed in Table III indicates that the model fits the data, and it is appropriate to find the factors of Shariah compliance.

According to (Meyers 2006), the model test's fitness further strengthens our model by the non-significant value of the Hosmer and Lemeshow test.

Table III. Logit model analysis

Variable	Logit Model	Fixed Effect Logit Model	Random Effect Logit Model	Effect
Directors' religion (DR)	1.0208* (0.006)	-0.107 (0.864)	0.0293 (0.108)	
Directors' gender (DG)	1.002 (0.813)	0.0200 (0.495)	0.008 (0.697)	
Volume traded (Vol)	1.0006 (0.456)	0.0011 (0.315)	0.001 (0.329)	
Payout ratio (PR)	1.008* (0.010)	0.0086** (0.089)	0.01* (0.036)	
Merger and Acquisition (M&A)	0.6171 (0.422)	-0.1379 (0.894)	-0.464 (0.61)	
Sales growth (SG)	0.9962 (0.252)	-0.0094 (0.125)	-0.009** (0.098)	
Islamic Financing (IF)	1.0132* (0.001)	-0.0031 (0.737)	0.009 (0.191)	
Islamic institutes' shareholdings (IIS)	1.1796* (0.008)	0.3285** (0.062)	0.283* (0.012)	
Stock return (SR)	1.0058* (0.031)	-0.0001 (0.968)	0.002 (0.527)	
Constant	0.2963 (0.000)	-	-	

Note: -2 Log Likelihood = 489.092; Cox and Snell R² = 0.134; Nagelkerke R² = .18; Hosmer and Lemeshow test = 4.237; Sig value = 0.835; Exp (B) in logit model refers to odd ratio; *Significant at 5 %; ** Significant at 10%; Hausman sig value= 0.0049.

4.1. Findings and Results:

The -2 Log-Likelihood ratio revealed in Table III indicates that the model fits the data, and it is appropriate to find the factors of Shariah compliance. According to (Meyers, 2006), the model test's fitness further strengthens our model by the non-significant value of the Hosmer and Lemeshow test. The table states the model classifies 83 percent Non-Shariah cases and 48 percent of Shariah cases correctly; overall, the accuracy is about 68 percent.

4.1.1 Logit Model:

Table III proves that there is a significant relationship between factors included in the model with Shariah compliance, which is the dummy dependent variable in our model. It means that the company's director's religion, payout ratio, Islamic financing, Islamic

institutes' shareholding, and the company's return to share have a significant impact on Shariah compliance.

As the results are seen from the table, if the company's directors are Muslims, the company tends to be Shariah-compliant. The variable Muslim Director has a significant impact ($p = 0.006$) on Shariah compliance with the odds of 1.0208. It means that if 1 percent of Muslim directors have been added to the company's profile, the logit of Shariah compliance will go up by 1.0208, holding other variables constant (Gujrati, 2009).

The table further describes that the payout ratio is positively significant for Shariah compliance. The payout ratio has a significant impact ($p = 0.01$) on Shariah compliance with the odds of 1.008. If the company's payout ratio increases by 1 percent, the logit of Shariah compliance will go up by 1.008, holding other variables constant.

It further describes that Islamic financing is positively significant in relation to Shariah compliance. Islamic financing has an odd of 1.0132 with a sig value = 0.001. If the company's Islamic financing goes up by 1 percent, the logit of Shariah compliance will also go up by 1.0132, holding other variables constant.

Islamic Institutes' shareholding has a positively significant impact on Shariah compliance. Its odd is 1.1796 with a sig value of 0.008. It means that if Islamic Institutes' shareholding goes up by 1 percent, the logit of Shariah compliance will also go up by 1.1796, holding other variables constant.

Return to share is the last significant variable of this model, which has a significant positive impact on Shariah compliance. The odds of a return to share are 1.005 with a sig value of 0.031. So, if the company's return to share increases by 1 percent, the logit of Shariah compliance will also go up by 1.005, holding other variables constant.

4.1.2 Fixed Effect Model:

In the results of the fixed-effect model, we found only two variables significant at 10%. They are a Payout ratio of 0.0086 ($p=0.089$) and Islamic institutes' shareholding of 0.3285 ($p=0.062$). The coefficients show the level of effect on the predictor. If the payout ratio is increased by 1 percent logit of Shariah, it goes up by about 0.0086. If Islamic institutes' shareholding increases by 1 percent, the logit of Shariah goes up by about 0.3285.

This difference is the limitation of the data as we had only five years of data on the companies, which is not quite sufficient for the Fixed or Random effect model. If we increase the data, we will get better results and find more variables significantly included in our model. Another limitation of the data is that we have collected the data from only one country, Pakistan. If we collect the data from some other countries, some other variables might become significant as they are in the Logit model.

5. Discussion and conclusion

Shariah-compliant status is affected by the director's religion, directors' gender, Islamic financing, Islamic institution's shareholdings, shared trading in the stock market, firms' growth, dividend payout, stock return, etc firms' merger and acquisition. The purpose of this study is to investigate the relationship between these factors and Shariah-compliant status in Pakistan. A total of 80 listed companies on the Pakistan Stock Exchange (PSX) were selected. The data were collected from the companies' financial reports from 2013 to 2017. The logistic regression analysis has been employed to get the most prominent factors. In this paper, we found that the director's religion, Islamic financing, Islamic institutes' shareholdings, payout ratio, and stock return are significantly affecting Shariah-compliant status in Pakistan. These findings align with the previous literature ((Hooy and

Ali, 2017; Ramli and Surbaini, 2018; Bardai, 2002; Sadeghi, 2008; Nainggolan, 2011; Ammer et al, 2018).

It further describes that the companies might be converted into Shariah-compliant because of their Muslim directors or to attract Islamic financial institutes to invest in them or get a better payout ratio or get a better return to their shareholders taking Islamic modes of financing. This Study suggests that investors can predict Shariah compliance with these parameters. This study guides ethical investors and supports them in the decision-making process of Shariah compliance investment. It will also facilitate academics, bankers, and policymakers to build a better understanding of the Shariah compliance pattern in capital markets. Investors interested in investing only in Shariah-compliant stock will get good knowledge from this article to know when a Shariah-compliant company might be converted into a non-compliant or vice versa considering the factors included in this research. From the perspective of managerial implications, this study will be helpful for managers to predict the status of the company affected by factors examined in the study, which leads to setting goals and targets accordingly and making their organizations better in profitability as both conventional and Shariah compliance stock markets have different dynamics and sales pattern. This study will also guide them to make decisions as that why they might convert a non-compliant company to Shariah compliance based on the given evidence.

Future studies can be done to analyze industry-specific Shariah factors. This study is currently focused on the listed firms in Pakistan Stock Exchange (PSX); a broader scope could be to collect inferences for firms that are private or not listed in any stock exchange.

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