Article

Does Business Group Affiliation Matter for Superior Performance? Evidence from Pakistan

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Abstract: Business groups have been described as improving the value of the affiliated firms they control, which is often beyond the capability of standalone firms. The purpose of the current study is to analyze the financial performance of affiliates of diversified Pakistani business groups relative to standalone firms. The current study employs data from 284 Pakistani listed non-financial firms from 2008–2015. In order to test the hypotheses, two dependent variables are used, namely, accounting (Return on Assets (ROA)) and stock market (Tobin's Q) measures of performance. Specifically, this study probes and compares the performance measures of group member and standalone firms. The findings of the study suggest that business group memberships have statistically significant effects on accounting and stock market measures of firm performance. In addition, size and sales growth have an increasing effect on the performance of firms. We believe that business groups in Pakistan are efficient economic actors and can be considered responses to high transaction costs and market failures.

Keywords: business groups; financial performance; group-affiliated; institutional voids

1. Introduction

Due to economic liberalization and globalization, corporate firms understand the intense competition they face: they need to diversify risk in order to achieve economies of scope and scale. Companies have to search for new markets, leverage resources to gain a competitive edge, and intensify the connections between firms by mergers, investments, and cross-shareholdings. One appropriate way of achieving these goals is to form a business group. By forming a business group, the affiliated firms use collaborative efforts between member firms to acquire favorable financial and intangible resources and capabilities. In fact, business groups create economies of scale and scope in order to minimize their Transaction Costs and increase the efficiencies of asset allocation. These collaborative efforts result in the maximization of firms' value and financial performance [1].

In the literature of business groups, a well-defined and widely accepted definition of the business group is 'a set of legally independent firms bound together by some formal and informal ties' [2]. A business group is an organizational form, that is, a collection of officially declared independent firms, and these firms work under the common financial and administrative control of certain families [3]. This study follows the definition provided by Khanna and Yafeh [4] in relation to emerging markets,

which considers emerging markets as a 'transactional battlefield', where buyers and sellers do not come together comfortably due to a lack of the specialized intermediaries in the market that generally assist with and advise on transactions between counterparties. Rehman [5] provided an initial identification of group membership. Previous studies have also referenced the same source to identify membership of business groups in the context of Pakistan [6].

Furthermore, the business group is an accepted phenomenon in different countries of the world. It is recognized under different names in many countries, for example, chaebol in Korea, keiretsu in Japan, business houses in Indian, and the 'twenty-two families' of Pakistan [7]. White [8] also proposed that the economic influence of Pakistan is concentrated in 'the 22 families' when considering domestic economic issues.

The business group is an important business form that prevails in both developing and developed countries. In a normative assumption view, group affiliation should increase the value of affiliated firms in the context of developing countries [9]. On the other hand, based on the literature of Transaction Cost economics, Williamson [10] and Coase [11] proposed the opposite view of group membership's influence on firm performance. Hence, in the case of developed countries, group affiliation outcomes resulted in high Transaction Costs and negative corporate performance. Thus, an empirical question arises that motivates scholars to analyze whether or not group affiliation positively affects the financial performance of firms in emerging economies.

Accordingly, performance comparison outcomes are different in relation to standalone firms, for example, in India, Chile, Korea, and Turkey group affiliation improves the performance of member firms. Orbay and Yurtoglu [12] reported that, in Turkey, group affiliation can be seen to have improved the investment performance and market value of firms. Other studies focused on Korea (Chang and Choi [13], Chang and Hong [3]), and others on India, namely, Khanna and Palepu [14,15]. All of them argued that business groups can be a source of value in emerging markets because they effectively fill in the institutional voids resulting from market inefficiencies. However, the performance of Japanese Keiretsu member firms is lower than standalone firms. Moreover, in China, business group membership has no effect on accounting performance [16]. Most of the available literature refers to Khanna and Rivkin [17]. Thus, in emerging economies research studies are based on the notion that groups are widely available in countries with weak institutional control and imperfect market conditions [18].

However, the existing literature is equivocal at best in presenting the impact of business groups on firm performance. Thus, how business group affiliation affects financial performance in emerging markets remains an open question. In order to fill this gap in the literature, the current study examines the performance outcomes of business group affiliation in Pakistan. We contend that Pakistan offers an excellent setting to test these phenomena for several reasons. Firstly, Pakistan represents an ideal case of the co-existence of standalone firms and large business groups, both contributing significantly to the country's economic activities. Saeed et al. [19] documented that business groups account for a major part of the private sector of the economy and hold a leading edge in terms of overall economic development and political favors. In addition, since Pakistan became independent, the owners of several business groups have migrated from India and run their businesses in Pakistan (1947). Therefore, business groups have a long history and strong roots in the Pakistani economy.

Secondly, diversified business groups are common in most developing economies. However, their role is poorly understood in India and Pakistan. The only exception is White [8], who revealed a statistically insignificant difference between the profitability of group and non-group firms. Hence, there is a pressing need to fill this research gap. The current study is amongst the first to explore the effect of group affiliation on performance using the most recent data set of Pakistani firms. The main contribution of this study is to show that business group membership can be an inevitable organizational response to institutional voids which enables group-affiliated firms to grow and prosper in an uncertain economic environment. Pakistan's economy faces different challenges, including energy crises, terrorism incidents, and political interference and governance issues. This situation has

impeded Pakistan's economic and trading activities, which has not only resulted in higher transaction costs for the corporate sector but also caused problems in production cycles, which results in significant delays in fulfilling export orders around the globe. Consequently, economic growth has slowed, and demand for imports reduced, accompanied by declining tax collection and foreign direct investment. Considering these economic conditions, it is meaningful to compare and evaluate the performance of group-affiliated and standalone firms and find out whether business group affiliation is a panacea for firms operating in such an economic environment.

The rest of the paper is organized as follows: Section 2 discusses a review of the literature, together with theoretical perspectives and empirical studies, conducted in different countries with the objective of exploring the relationship between group affiliation and the performance of firms. Following this, Section 3 discusses the sources of data and the criteria applied in the selection of the sample. An appropriate methodology to investigate the relationship between variables is also explained. Section 4 discusses the results of the study in order to answer the question of whether group-affiliated firms are more profitable than standalone firms. Finally, Section 5 ends with a conclusion and suggestions for future studies.

2. Literature Review

2.1. Theoretical Framework

Khanna and Palepu [20] coined the term 'institutional voids', and described them as the lack of intermediaries that connect buyers and sellers for efficient economic transactions. Institutional voids may create hurdles or certain opportunities for specific elements of the market. This provides an alternative justification for the presence of business groups in emerging economies.

Importantly, empirical studies have emphasized that business groups offset institutional voids by internalizing product, capital, and labor markets [21–23]. Nevertheless, when product, labor, and capital markets suffer due to the failing of these institutions, such practices lead to high Transaction Costs and the business group is one approach adopted in order to fill these institutional voids [14].

Considering the significance of Institutional Voids, a growing number of studies exist in the literature, which emphasize the association between business group affiliation and the performance outcomes of firms. Institutional voids theory suggests that prevailing voids in labor, product, and capital markets will not affect all firms equally. Rather, such voids have a strong negative influence on the performance of standalone firms relative to group-affiliated firms, since group-affiliated firms receive various benefits from each other, such as loans, debt guarantees, equity investments, and internal business trade [24]. Accordingly, it would be a rational approach for business groups to trade internally, to respond to market failures by protecting group-member firms from unusual external shocks to minimize risk and to increase performance.

Lee, Peng, and Lee [25] argued that during an institutional transition phase, the formal rules and regulations change, and increasing costs and uncertainty are expected. In a meta-analysis based on 141 studies, Carney et al. [26] related business group relationship with performance in 28 countries. They reported that the cost of group membership marginally balances its benefits in the form of improved financial performance, and that there were performance deviations to a certain degree at the firm and group levels.

The Transaction Cost perspective is based on the idea that firms strive to minimize the cost of exchanging resources within the economic environment [11]. Business groups are justified on the basis of Transaction Cost Theory by focusing on the differences at the overall level of Transaction Costs across countries affected by institutional voids [15]. In accordance with this approach, the business group is the right structure to deal with certain market failures that increase the overall Transaction Costs of an economy in different areas (labor, capital, and product markets) [27]. In addition, Yiu et al. [28] argued that the Transaction Cost approach has become a familiar viewpoint when rationalizing business groups in developing economies.

Consistent with the theory, if the level of Transaction Costs is high in an economy, then more economic activities are assumed to be carried out through an internally created market, as compared to the external market in the case of lower Transaction Costs [29]. In line with this assumption, previous studies have shown that internal capital markets have played a key role in business groups. Examples of this are the study by Shin and Park [30] on Korean chaebols and the study by Hoshi et al. [31] on Japanese Keiretsu. Therefore, business groups provide an efficient framework to capitalize investment opportunities at low transaction costs by investing in new ventures and ensuring the efficient allocation of funds generated through the internal capital market, as well as the external capital market.

Internal capital markets not only lower financial constraints for group-member firms, but also keep providing capital at low interest rates with soft protective covenants. Hence, the creation of an internal capital market lowers dependence on external market capital, which in turn strengthens their position compared to standalone firms. Zattoni, Pedersen, and Kumar [32] took a sample of Indian firms and observed that, in the presence of market and formal institutional imperfections, business groups perform better financially than standalone firms. However, business groups disappoint when it comes to confirming their superior performance when markets become more efficient.

2.2. Hypotheses Development

Business groups can be witnessed in many forms and sizes, with their diversity featuring challenges over time. Meanwhile, proportional returns in terms of profit are recognized to a greater degree in developing countries, where labor and financial markets are imperfect. In the comprehensive study by Khanna and Rivkin [17] related to business group affiliation and corporate performance, based on a sample of 14 countries, the effects of business groups were seen to differ from 4.2% (Mexico) to 31.1% (Indonesia). Moreover, Chang and Hong [3] found that business group effects account for between 5.7% and 9.7% of Korean firms' performance; importantly, this effect disappeared over a long period. In addition, the intensity of the business group effect is greater in small-sized business groups.

Comparing country-specific findings conducted in India and Korea, different strengths of the effect of business group membership on the performance of firms were witnessed [17]. Previous study findings, which are commonly seen as being in favor of the positive outcomes of group membership, supported their conclusions regarding the capability of business groups to overcome institutional voids in emerging economies. In China, it has also been concluded that the effect of group membership is positive on firm value [33]. In addition, He et al. [16] have reported that in China, group membership has a low and significant effect on firm accounting value.

However, Khanna and Yafeh [2] observed a negative association between group membership and firm performance in half of the ten emerging economies in their sample. Jia et al. [34] showed that business groups may be parasites that expropriate minority shareholders in the group, or may be paragons that support transactions and operations in and outside of the group when facing difficult economic and institutional environments. The equivocal impact of group membership was observed in earlier studies, for example, Careny et al. [26], which proposed that the association between group membership and firm performance may be more complex than has previously been empirically and theoretically modelled. They found that the effect of group membership varies substantial among countries: it is positive in Chile, Colombia, Hong Kong, Indonesia, Sweden, and Turkey; while it turns negative in Nigeria, France, Japan, and South Korea; and insignificant in Belgium, China, India, Taiwan, Thailand, and the Philippines. In addition, Mursitama [35] found a negative effect of business group membership on the performance of Indonesian business groups. In addition, Ma et al. [36] provided evidence from 1119 publicly listed Chinese firms that group membership has a statistically significant and negative influence on firm performance. Table A1 provides a summary of these studies.

Essentially, this brief review of the literature has reported mixed findings, offering evidence for both positive and negative associations between group membership and performance. Thus, many opportunities exist to increase understanding of the relationship between group membership and

financial performance through greater scrutiny when institutional voids are more severe. Consistent with the theory, empirical evidence supports the hypothesis that firms affiliated with a group located in an emerging economy have a higher financial performance than standalone firms. The Institutional and Transaction Cost theories emphasize that business groups may add value to member firms by filling the voids left by the missing institutions that support the efficient working of markets [37]. Therefore, it is expected that group membership positively affects the performance of group-affiliated firms in Pakistan.

Hypothesis 1. *Firms affiliated with business groups are more profitable than standalone firms.*

Firm size is taken to represent the capacity of economies of scale and scope accumulating to large firms. If large group-affiliated firms capitalize these two measures, the size of the firm will positively affect the performance of firms. The size of a business group affects firm performance [15]. On the positive side, Baumol [38] has documented that firm size positively affects the performance of firms by arguing that the benefits of large firms derive from their market power and greater access to external capital markets. Chu [39], in the Taiwanese context, concluded that group membership in the case of large-sized business groups leads to better stock market performance. On the contrary, Samuels and Smyth [40] suggested a negative relationship between firm size and profitability.

In their study, Claessens et al. [41] also used a sample of 2000 firms from nine East Asian economies, empirically analyzing the interaction effect of group affiliation and size on the value of firms. The results of interaction terms between group affiliation and size are statistically insignificant. Recently, scholars have also applied the interaction effect between group affiliation and size on firm value and reported that the interaction term has a statistically significant and positive influence on firm value [42], since large firms receive more advantages from group membership, such as easy access to external capital markets and greater economies of scale and scope. Therefore, we anticipated that the large size of a firm moderates the relationship between group affiliation and financial performance.

Hypothesis 2. *The relationship between group affiliation and affiliate performance is positively moderated by the size of firms.*

Hadlock and James [43] proposed that firms choose debt financing compared to equity financing, predominantly because the owners of firms prefer the dilution of earnings to the dilution of ownership. Therefore, this study applied indicators of leverage in order to measure the level of debt carried by a firm to reflect the availability of capital raised [44,45]. A greater ratio of debt-to-assets increases the chances of financial distress and bankruptcy and thus limits a firm's capacity to financially support its investment opportunities by borrowing [46]. Therefore, a negative sign is predicted for leverage measures in connection with performance measures.

Hypothesis 3. *The relationship between group affiliation and affiliate performance is negatively moderated by the leverage of firms.*

This study makes an initial effort to address the issue by investigating the influence of sales growth on accounting and stock market measures of performance. We ask two questions: (i) Does sales growth positively affect performance? (ii) Is the positive impact of sales growth on the performance of group-affiliated firms higher or lower in case of group affiliation? Using a sample of Keiretsu member firms, Aoki [47] reported by that group affiliation does not facilitate higher sales growth rates. A review of the literature posits different findings, offering both positive [48–50] and negative associations [51] between growth and profitability. Pakistani business groups focused on the sales growth of firms, particularly when searching for new markets and moving into new business ventures. Thus, it is expected that firms affiliated with a business group gain more from sales growth relative to standalone firms.

Hypothesis 4. *The relationship between group affiliation and affiliate performance is positively moderated by the sales growth of firms.*

3. Data Sources and Methodology

3.1. Sources of Data

This study analyses a large sample of group-member firms and standalone firms listed on the Pakistan Stock Exchange. Previously, the Pakistan Stock Exchange was known as the Karachi Stock Exchange. Then, three stock exchanges, namely, the Karachi Stock Exchange, the Lahore Stock Exchange, and the Islamabad Stock exchange, merged to become the Pakistan Stock Exchange (PSX), on 11 January 2016. The sample data is collected from the State Bank of Pakistan-Financial Statements Analysis of Companies (Non-Financial). This data is administered and published by the State Bank of Pakistan (SBP), as the Central Bank of Pakistan. The document contains data from the financial statements of non-financial firms and this data is comparable to the annual reports submitted to the Securities and Exchange Commission of Pakistan (SECP). More importantly, firms in Pakistan have to report their data to the SECP annually, thus transparency and accuracy of data is also required.

3.2. Data Collection and Sample Specification

Private limited firms have been excluded from the sample due to a lack of available data. The study sample also excludes financial, real estate, and utility firms, and firms that are subsidiaries of foreign firms. Financial services firms are not part of the sample since their accounting scheme is not compatible with that of firms in other industries. The returns of financial firms are not similar and cannot be compared with other sectors of the economy [52]. This study sample includes only public limited firms from the private sector in Pakistan. Thus, following various studies, firms operating in the financial services sector, firms affiliated with multinational patents, and firms that are owned partially or fully by the government are not part of the study sample [53].

Based on these facts, the study covers 284 public limited firms listed on the Pakistan Stock Exchange (PSX) for the period 2008–2015. The study sample consists of 284 firms, 143 (50.35%) of which are affiliated with a business group and 141 (49.65%) of which are standalone firms. The total numbers of observations in this study is 2272. In food and tobacco industries, out of 35 firms, 16 are group-affiliated and 19 are standalone firms. More importantly, in the sample, 74 firms are active in basic industries, including petroleum, of which 38 are group-affiliated firms and 36 are standalone firms. The textile industry comprises the major share, with 1032 observations from 129 firms of which 56 are group-affiliated, and 73 are standalone firms.

3.3. Methodologies

This study is based on unbalanced panel data analyzed primarily by the pooled ordinary squares (OLS) regression method to estimate the relationship between dependent and independent variables. The pooled OLS regression is appropriate for examining the effect of group affiliation on the performance of group-member firms, and there are no unique attributes of individuals within the measurement set. In this case, group affiliation is a dummy variable.

Firstly, to compare the performance of group-member firms and standalone firms, an independent sample *t*-test is applied to mean differences. Then, pooled regression is estimated to empirically analyze the effect of group affiliation on the performance of member firms. Earlier studies related to the performance of business groups have applied the pooled regression estimation technique at a firm level [54–56]. The performance comparison of group firms and standalone firms is applied by using a dummy variable; thus, a value of 1 indicates that a firm is a member of a group, while zero indicates it is a standalone firm. Therefore, group membership is a dummy variable distinguishing between affiliated firms and standalone firms.

Based on the review of the literature and business group theories the main hypothesis of the study is to investigate whether group-member firms perform better financially than standalone firms do. It is assumed that in emerging economies business group membership positively affects the performance of group members. The study estimates model 1 and 2 using regression analysis to explore the effect of group membership on the financial performance of firms.

$$\text{ROA}_{i,t} = \beta_o + \beta_1 DGroup_{i,t} + \beta_2 SIZE_i + \beta_3 SGRW_{i,t} + \beta_4 LEV_{i,t} + \beta_5 DInd + \varepsilon_i \qquad (1)$$

$$\text{Tobin's Q}_{i,t} = \beta_o + \beta_1 DGroup_{i,t} + \beta_2 SIZE_i + \beta_3 SGRW_{i,t} + \beta_4 LEV_{i,t} + \beta_5 DInd + \varepsilon_i \qquad (2)$$

where the dependent variables are Return on Assets (ROA) and Tobin's Q. ROA refers to the accounting based performance of a firm, and measures earnings before interest and taxes divided by total assets. Tobin's Q represents the stock market measure of firm performance, which is estimated as the market value of equity and the book value of debt divided by the book value of assets. We used the natural logarithm transformation of Tobin's Q, since, the log-transformed Tobin's Q ratio has shown better statistical distribution properties than raw Tobin's Q ratio [57,58]. The Group Affiliation (DGroup) dummy is the variable of interest and is a time-invariant dummy variable, showing the membership of firms. SIZE is the natural logarithm of total assets. It indicates the size of the firm. Sales Growth (SGRW) is represented by the sales growth of the firm and represents current year sales minus last year sales divided by last year sales. Leverage (LEV) is the capital structure of a firm, that is, the total debt divided by total assets. DInd shows each of the listed branches at a two-digit level of SIC (see Table A2). Lastly, ε is the error term. This study introduces interactive (cross-effect) variables within baseline models 1 and 2.

In particular, all firm-level control variables used, such as size, growth, and leverage, are interacted with group-affiliated dummy variables to catch the group affiliation relationship. Therefore, models 5–10 analyze the interaction between group affiliation and control variables to determine their effect on the profitability of firms. Table 1 shows the definitions of each dependent and independent variable, with its source.

Table 1. The definitions and sources of the variables.

Variables (Acronyms)	Definitions	Sources
Return on Assets (ROA)	Earnings before interest and taxes divided by total assets	Financial Statement Analysis (SBP)
Tobin's Q	Market value of equity plus book value of debt divided by total assets	Pakistan Stock Exchange (PSX)
Group Affiliation (DGroup)	Dummy variable that takes value 1 if the firm is affiliated with a Pakistani business group, 0 otherwise	Rehman (2016) [5]
Leverage (LEV)	Total debt divided by total assets	Financial Statement Analysis (SBP)
Firm Size (SIZE)	Natural Logarithm of total assets	Financial Statement Analysis (SBP)
Sales Growth (SGRW)	(Current year sales + Last year sales) divided by Last year sales	Financial Statement Analysis (SBP)

4. Analysis and Results

4.1. Descriptive Statistics

The *t*-test statistics are used to analyze the differences in the means of group member and standalone firms' performance and control variables. It can be seen that group-affiliated firms have a significantly higher Return on Assets with a mean value of 5.008 than standalone firms with 1.663. The second performance factor is measured by Tobin's Q, which is used to estimate the market performance of firms. Group-member firms appear to have higher Tobin's Q ratios, with a mean value of 4.132, than standalone firms with 3.467. The comparison of performance measures between group-member firms and standalone firms is shown in Table 2.

Consequently, it is hypothesized that member firms are more profitable than standalone firms. In particular, the results of the *t*-test indicate that group firms are significantly more profitable in terms of accounting performance (ROA) and stock market performance (Tobin's Q) than standalone firms. Thus, it is suggested that group affiliation improves member firms' profitability. The performance difference is statistically significant at the 1% level. It can also be seen that group-affiliated firms are larger than standalone firms; as measured by total assets, the difference is statistically significant at the 1% level. In addition, in terms of growth—measured by current year sales minus last year sales divided by last year's sales—the difference between affiliated and unaffiliated firms is statistically significant at 5%. This difference explains the advantages of economies of scale and scope for group-member firms. Moreover, the difference in the total debt between group-affiliated and unaffiliated firms is also analyzed, with the debt level in relation to total assets higher in unaffiliated firms than in group-affiliated firms. The overall results reveal that higher profitability, a larger size, and a better solvency position are important determinants of business group affiliation.

Table 2. Comparison of the statistics of the key variables.

Variables	Entire Sample (n = 284)		Affiliated Firms (n = 143)		Standalone Firms (n = 141)		*t*-Statistics
	Mean	SD	Mean	SD	Mean	SD	
ROA	3.347	9.707	5.008	9.488	1.663	9.642	−8.335 ***
Tobin's Q	3.802	3.605	4.132	3.777	3.467	3.391	−4.411 ***
SIZE	14.339	2.541	14.947	2.700	13.723	2.204	−11.824 ***
SGRW	0.094	0.285	0.109	0.270	0.078	0.299	−2.598 **
LEV	0.724	0.848	0.612	0.576	0.838	1.043	6.397 ***

Source: authors' own estimations. *** significance at the 1% Level, ** significance at the 5% Level.

4.2. Correlation Analysis

Previous studies have provided empirical evidence that group affiliation improves member firms' performance [9]. Moreover, several studies have provided a positive correlation between group affiliation and accounting performance and the stock market performance of group-member firms [59]. In this study, the correlation between group affiliation and accounting performance and stock market performance is statistically significant at 5%.

Therefore, positive correlations with both performance measures support the first hypothesis that group affiliation positively affects member firms' performance when compared to standalone firms. Moreover, the correlation coefficient between group affiliation and the size of firms is 0.24, suggesting a moderate correlation between them (See Table 3). However, a negative correlation is observed between total debt and accounting performance and stock market performance measures. This suggests that an increasing level of debt decreases the financial performance and value of firms.

Table 3. Results of the pairwise correlation matrix of Return on Assets (ROA).

	DGroup	ROA	Tobin's Q	Size	Sales Growth	Leverage
DGroup	1					
ROA	0.1723 *	1				
Tobin's Q	0.0922 *	0.2999 *	1			
Size	0.2409 *	0.1962 *	0.1097 *	1		
Sales Growth	0.0545 *	0.3202 *	0.0314 *	0.1044 *	1	
Leverage	−0.1844 *	−0.3744 *	−0.1084 *	−0.0538 *	−0.0838 *	1

Source: authors' own estimations. * Significance at the 5% Level.

4.3. Regression Analysis

This section presents the results of regression analysis calculated by using pooled OLS regression, and the importance of group affiliation in terms of financial performance. Taking group affiliation as the main variable, the regression is performed between group affiliation and performance measures with and without considering control variables. Table 4 reports the results of baseline models 1 and 2 taking ROA and Tobin's Q as dependent variables. The results of the first hypothesis, regarding whether firms affiliated with business groups have higher accounting and stock market performance than standalone firms, are reported in columns (1) and (3) of Table 4.

Table 4. Regression results of Equations (1) and (2).

Variable	ROA		Tobin's Q	
	(1)	**(2)**	**(3)**	**(4)**
DGroup	3.345 ***	2.062 ***	0.193 ***	0.139 ***
	(8.34)	(5.30)	(5.11)	(3.82)
SIZE		0.386 ***		0.047 ***
		(5.02)		(6.59)
SGRW		9.558 ***		0.009
		(14.07)		(0.35)
LEV		−1.748 ***		−0.201 ***
		(−7.83)		(−9.52)
DInd		Yes		Yes
DYear		Yes		Yes
Intercept	1.663 ***	−2.233	0.900 ***	0.138
	(5.84)	(−0.91)	(33.58)	(1.25)
Companies	284	284	284	284
Observations	2272	2272	2272	2272
Adj. R^2	0.0293	0.1861	0.011	0.1552
F-Value	69.48 ***	31.54 ***	26.12 ***	30.81 ***
Breusch-Pagan (BP) test	0.29	0.04	0.894	0.139
Variance Inflation Factor (VIF)	1.00	1.92	1.00	1.42
Shapiro-Wilk (SW) test	0.195	0.132	0.110	0.212

Source: authors' own estimations. *t*-values are reported in parentheses. *** significance at the 1% Level.

As is shown in columns (2) and (4) of Table 4 the results are reported with control variables. The results support the first hypothesis (H1) regarding the fact that group affiliation improves the firm performance of group-member firms. As shown in columns (1) and (3) of Table 3, for accounting and stock market performance measures, the effect of group affiliation is statistically significant ($p < 0.01$) and positive. The results indicate that group affiliation has a statistically significant positive influence

on firm profitability (3.345, *t*-value 8.34) and market performance (0.193, *t*-value 5.11). In addition, the results of group affiliation with control variables are also statistically significant. As shown in columns (2) and (4) of Table 4, the regression results with control variables support the first hypothesis (H1), that the coefficient of group affiliation has a positive effect on the accounting performance (2.062, *t*-value 5.30) and market performance of firms (0.139, *t*-value 3.82).

The results of control variables are also significant. Size has a statistically significant positive effect on the profitability (0.386, *t*-value 5.02) and market performance of the firm (0.047, *t*-value 6.59). Therefore, we can conclude that the size of a firm matters for its financial performance. Earlier, Lang, Ofek, and Stulz [60] reported the positive effect of growth on firm value. Therefore, it was expected that sales growth and size are positively associated with the value of the firm. The sales growth coefficient is statistically significant in the case of accounting based performance (9.558, *t*-value 14.07), but insignificant in the case of market based performance. Thus, it is implied that sales growth contributes positively to the profitability of firms, as is evidenced by the positive coefficient of the sales growth variable. Amongst other control variables, the coefficient of leverage has a statistically significant negative effect on the financial performance of firms. The results suggest that as debt ratio increases, the performance of the firm decreases.

We considered that the positive affect of group affiliation on member firms' financial performance is derived from different channels, such as internal capital markets, parent office globalization, marketing channels, and professional human resources. We might attribute our findings to the fact that external markets have been relatively less sophisticated in Pakistan. In order to avoid the constraints on arm-length lending, business groups are responsible for providing access to capital and obtaining funded through internal capital markets for investment in high-yielding opportunities. Moreover, the bond market is not mature in Pakistan due to high administration costs, and a lack of technological development, transparency, and liquidity; and the expectations of inflation and the regular devaluation of PKR currency have hindered foreign investment. Thus, the only source for debt financing is bank loans. It is important to mention that almost every large business group in Pakistan has its own bank, that is, it is able to arrange loans and bank guarantees. Hence, affiliated financial institutions, besides providing internal capital markets, create an advantage over external capital markets for group firms in the form of loan guarantees, low interest rates, and almost non-existent protective covenants. This mechanism of cross-subsidies improves the overall financial performance of group-member firms.

Another interesting factor of Pakistani business groups is that they have parent offices outside Pakistan. These parent offices facilitate in increasing export sales and investment and coordinate activities relating to the adoption of modern technology, as there is no government support for technology upgrading and research and development. Therefore, in collaboration with multinational firms they are able to use modern technology to increase the productivity of their group-affiliated firms. Considering the linkages with the international market, business groups provide a baseline for international exposure for member firms, including the access to international markets so that they can learn about and capitalize on market opportunities. Standalone firms cannot easily access these knowledge-based advantages. Therefore, group membership supports member firms in their transactions with international clients in foreign markets and attracts clients from a wider range of foreign markets than is the case with standalone firms.

In Pakistan, business groups promote group-wide advertising, which focuses on the overall image of a business group rather than highlighting an individual member firm. As a result, group-wide advertising also creates economies of scale and scope. An example of this is the Sitara Group's advertising. After the advertisement of each affiliate, there is a message from the Sitara group of companies, first emphasizing an individual member firm and then promoting the overall image of the business group. This message promotes the idea that the quality of their products is excellent. In addition, Pakistan is amongst the top exporters of textiles around the globe, which assists in the market positioning of the Sitara brand name in different industries such as textiles, chemical products,

and energy. Similarly, the Hundai Group's advertising highlights the idea that the manufacturer operates from 'from chip to ship'. Chang and Hong [24] found that group investment in advertising and R&D activities contribute to the economic performance of group-member firms.

Interestingly, the owners of business groups send their children abroad for higher education, preferably to English speaking countries such as UK, USA, Australia, and Canada. After completion of their education, they join the business group as a manager. Then, after five-years they are appointed as directors of different group-affiliated firms and work as interlocking directors. Eventually, they emerge as a professional human resource for business groups. Thus, from a human perspective, framing a sound internal management and control system is also critical for business groups in cases where the number of professional managers in the market is limited. As well as assisting in control, interlocking directors encourage member firms to share resources and the flow of information, which ultimately influences their performance in the group.

Therefore, interlocking directorates work as a tool to align objectives between the parent firm and group-member firms. Moreover, business groups have the capacity to appoint government officials as directors on their boards to support member firms in dealing comfortably with legal, monitoring, and enforcement issues. This indicates that business groups are capable of dealing with the voids prevalent in product, capital, and labor markets.

Note: the table above shows the results of baseline (Equations (1) and (2)) models using pooled regression. The sample period is from 2008 to 2015. There are two dependent variables, the first of which is the accounting based performance measure return on assets (ROA). This variable measures earnings before interest and taxes divided by total assets. The second dependent variable is a stock market based performance measure, Tobin's Q, measuring the market value of equity plus the book value of debt divided by the book value of total assets. The independent variables are Group dummies (DGroup), size of firms (SIZE), sales growth (SGRW), leverage (LEV), industry, and time dummies. DGroup is a dummy variable, where 1 denotes that a firm is affiliated with a business group and zero that it is not. Size is measured by the natural logarithm of total assets. Sales growth is measured by current year sales minus last year sales divided by last year sales. Leverage is measured by total liabilities divided by total assets. DInd shows the industry dummies at a two-digit level of SIC. DYear substitutes the year dummies between 2008 and 2015.

(BP-test): the Breusch and Pagan test is used to check heteroscedasticity in the linear regression models [61]. The VIF-test checks the multicollinearity in the independent variables, expressed as the variance inflation factor (VIF). Five considers a two-digit critical value of VIF. The *p*-values of the Shapiro-Wilk normality test offer standard tools for detecting any violation of standard regression assumptions. Each of the residuals has a normal distribution.

Note: (BP-test): the Breusch and Pagan test is used to check heteroscedasticity in the linear regression models [61]. The VIF-test checks the multicollinearity in the independent variables, expressed as the variance inflation factor (VIF). Five considers a two-digit critical value of VIF. The *p*-values of the Shapiro-Wilk normality test offer standard tools for detecting the violation of standard regression assumptions. Each of the residuals has a normal distribution at the 5% level.

In order to explore the possible interaction effects, the size, leverage, and sales growth variables are interacted with the main variable under examination, that is, group affiliation. In Table 5, the interaction DGroup $\times$ SIZE is investigated, to analyze its influence on the financial performance of firms. As shown in columns (5) and (8) of Table 5 the coefficient of the interaction term between group dummy and size is positive and statistically significant (ROA $\beta = 0.167$, *t*-value 7.06, Tobin's Q $\beta = 0.223$, *t*-value 10.77). The results support the second hypothesis, namely, that the relationship between group membership and affiliates is positively moderated by the size of firms. Thus, the results indicate that large firms receive more advantages from group membership, such as easy access to external capital markets and greater economies of scale and scope.

Claessens et al. [41] used a sample of 2000 firms from nine East Asian economies to empirically analyze the interaction effect of group affiliation and size on the value of firms. However, the results

of the interaction terms between group affiliation and size were statistically insignificant. Recently, other researchers have also applied the interaction effect between group affiliation and size to firm value [42] and reported that the interaction term has a statistically significant and positive influence on firm value.

In Table 5, to test hypothesis 3, the interaction between group affiliation and leverage (DGroup × LEV) is introduced. In line with our expectations, in columns (6) and (9) the coefficient of the interaction term between group dummy and leverage is negative and statistically significant for accounting (ROA β = −2.512, *t*-value −4.46.) and stock market measures of performance (Tobin's Q β = −0.212, *t*-value −4.54). It is implied that a high debt ratio negatively affects and lowers the performance of affiliated firms. In other words, a one unit increase in firms' leverage tends to decrease firms' profitability performance, and if there are two examined firms the affiliated firm has a better performance than the non-affiliated one. Hypothesis 3 is supported.

Table 5. Regression Results of Equations (1) and (2) with Using Interactive Variables.

Variable	ROA			Tobin's Q		
	(5)	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
DGroup × SIZE	0.167 *** (7.06)			0.223 *** (10.77)		
DGroup × LEV		−2.512 ** (−4.46)			−0.212 *** (−4.54)	
DGroup × SGRW			8.705 ** (9.36)			0.186 ** (2.08)
SIZE		1.397 *** (11.62)	0.952 *** (8.40)		0.044 *** (6.36) ***	0.039 *** (3.88)
SGRW	9.097 *** (14.06)	9.612 *** (14.1)		0.151 ** (2.58)	0.132 ** (2.16)	
LEV	−9.831 *** (−17.36)		−9.890 *** (−17.19)	−0.112 ** (−2.18)		−0.176 *** (−9.49)
DInd	Yes	Yes	Yes	Yes	Yes	Yes
DYear	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	6.221 ** (2.85)	−14.379 *** (−5.17)	−4.986 * (−1.83)	2.344 *** (10.70)	0.785 *** (6.56)	0.140 (0.94)
Companies	284	284	284	284	284	284
Observations	2272	2272	2272	2272	2272	2272
Adj. R^2	0.259	0.179	0.236	0.125	0.237	0.206
F-Value	50.62 ***	32.02 ***	44.97 ***	22.72 ***	45.23 ***	37.90 ***
Breusch-Pagan (BP) test	0.13	1.48	1.82	0.065	0.20	0.15
Variance Inflation Factor (VIF)	1.82	2.43	1.91	1.54	1.88	1.43
Shapiro-Wilk (SW) test	0.096	0.153	0.163	0.112	0.193	0.221

Source: authors' own estimations. *t*-values are reported in parentheses. *** significance at the 1% Level, ** significance at the 5% Level, * significant at the 10% Level.

In order to test hypothesis 4, the interaction between group affiliation and sales growth (DGroup × SGRW) is also shown. Columns 7 and 10 present the results of DGroup × SGRW. The coefficient of the interactive term is positive and statistically significant (ROA β = 8.705, *t*-value 9.36, Tobin's Q

β = 0.186, *t*-value 2.08). Hypothesis 4 is also supported. The interaction between group affiliation and firm characteristics, such as the size of the firm, sales growth, and capital structure, is statistically significant for performance measures. Sales growth and the size of the group-affiliated firms have a greater influence on the financial performance of firms than they do with non-affiliated firms.

The multi-collinearity amongst the independent (interaction and other financial) variables are tested by the variance inflation factor (VIF) in each case and their maximum individual values are reported in Table 5. The VIF values for each regression coefficient ranged from a low of 1.00 to a high of 2.43, and indicated that the collinearity problem is controlled, in which one predictor variable in a multiple regression model can be linearly predicted from the others with a substantial degree of accuracy. Hence, there is no particularly collinearity amongst the independent interaction and other control variables. This suggests that the VIF values are at acceptable levels [62], and in this case there is no need for centering such interaction models [63]. All of them are included in the final model. The Breusch and Pagan tests are also applied in order to test the existence of heteroscedasticity. In the present study, the χ^2 values suggest that the statistics are at an acceptable level (*p* > 0.05) and there is no heteroscedasticity.

5. Discussion

Researchers have offered different views of business groups, portraying them as parasites, villains, and anachronisms, or as paragons, heroes, and avatars. Our study findings provide compelling evidence of a direct positive link between group membership and firms' financial performance. In addition, this relationship is found to be strongly moderated by firm specific factors such as size, leverage, and sales growth. In line with our expectations as stated in H1, we find that firms affiliated with business groups are more profitable than standalone firms. The findings are consistent with the earlier studies. For example, Chang and Choi [13] reported a positive effect of group affiliation on the performance of chaebol firms. Moreover, Chittoor, Kale, and Puranam [64] and Manikandan and Ramachandran [65] also found that group-member firms have a better accounting and stock market performance. In the context of an emerging economy, such as Pakistan, group-affiliated firms perform better financially than standalone firms do.

Specifically, our study contributes to the business group literature in three ways. Firstly, the financial performance of group-affiliated and standalone firms are investigated to show the influence of group membership on accounting and stock market measures. The results of our study show that the performance outcome of business group affiliation is contingent upon various firm characteristics, such as size, leverage, and sale growth. Thus we stress the need to study the impact of group affiliation in the presence of other factors that may shape the outcomes of business affiliation.

Secondly, business groups support member firms in avoiding the severe institutional voids prevalent in the emerging economy of Pakistan. The free flow of capital, sharing intangible resources (such as R&D and advertising), and interlocking directors within group member firms generate considerable economies of scale and scope. An interesting observation is that most of the group member firms are more mature and large, as these member firms have been operating since the independence of Pakistan. Importantly, they have their own financial and technical resources.

Lastly, we found that standalone firms are more locally oriented and less diversified than their group affiliated counterparts, which explains their survival and the performance discount they incur. Business groups collaborate in the form of international joint ventures which benefit member firms by offering access to new markets and advanced technology, increased capacity, and the sharing of risks. In the case of Pakistan, standalone firms do not perform on a par with their group affiliated peers.

6. Conclusions

This research paper seeks to provide empirical evidence on the effect of group membership on the performance of firms in Pakistan. By using a sample of 284 Pakistani firms as the research sample, this study suggests that group membership is beneficial for member firms. Moreover, the benefits of group membership are linked to the size of business-group firms. In the case of large group member firms, the effect of business group membership is more influential than it is with small group member firms.

This study compares the profitability of group-member firms with standalone firms using an independent sample *t*-test for mean differences. The results support the hypothesis that group-affiliated firms are more profitable compared to standalone firms. Moreover, the results of interaction terms are also statistically significant, which implies that the size and sales growth of group firms positively contribute to the financial performance of firms.

Thus, the findings of the study suggest two important explanations. First, like most developing economies, business groups are able to overcome the inefficiencies related to emerging markets, such as imperfections in the markets regarding product, capital, and labor [63]. Second, in emerging economies, poor judicial systems lead to low trust, making personal ties more important and trustworthy than trust institutions [66].

The results of this study have vitally important implications for practitioners—managers, macroeconomic policymakers, academicians and theorists. Specifically, weak governance tends to discourage private sector investment and reduce economic efficiency. Importantly, governance issues are significantly related to institutional voids. These institutional voids provide opportunities to groups to benefit and create advantages over standalone firms. These advantages are created through sharing financial resources and intangible resources (R&D, advertising), appointing interlocking directors, and collaborating with multinational firms. Thus, these measures enable group-affiliated firms to respond positively to institutional voids by making themselves a part of trustworthy networks in order to reduce financial risks.

Nevertheless, Chari and David [53] claimed that a negative relationship between pro-market reforms and the sustainability of superior profits exists in an emerging economy. The decline in the sustainability of superior profits also shows that pro-market reforms bring significant threats in addition to offering various opportunities, such as a greater availability of production factors and greater freedom to enter and operate businesses. The empirical results also supported a significant difference in the superior and sustainable economic performance among firms in developed and developing countries [67]. Increasing evidence of climate change is forcing businesses to play an active role in reducing sustainability burdens and preserving their resources for future generations [68]. The greater investment in research and development (R&D) [69] and in marketing & advertising are firm-level resources [70] that can provide a measure of protection against the destruction in the sustainability of superior profits which is associated with pro-market reforms in such emerging economies.

Like other research studies, this study has its limitations. It is an empirical study, which is based on a single country framework of Pakistan. Thus, it would be valuable to extend this study by employing data from both financial and non-financial firms and, accordingly, comparing Pakistan with other emerging economies, such as India and Bangladesh, particularly because the Pakistani and Indian economies have very similar features. Therefore, a replication of this study in other emerging economies may allow these results to be generalized. Besides, the differences between manufacturing and non-manufacturing business group firms, or the characteristics of high tech companies, could also be explored [71]. From this perspective, there is a need for improved methods to determine additional—that is, environmental—risk effects on their financial performance [72]. Furthermore, it would be important to consider that competition does not only occur among companies, but also among Small and Medium Enterprises (SMEs) [73].

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Summary Table of the Literature Review.

Author	Objective	Method	Key Findings
Khanna and Palepu (2000) [15]	To analyze the performance of group-affiliated firms relative to standalone firms.	Multiple regression analysis.	Finds that accounting and stock market measures of firm performance initially decline and subsequently increase once group diversification exceeds a certain level.
Khanna and Rivkin (2001) [17]	To examine the effects of group affiliation on profitability.	Ordinary least squares (OLS).	Finds that business group affiliation affects the economic performance in 12 of the markets.
Gunduz and Tatoglu (2003) [54]	To compare the performance of affiliates of diversified Turkish business groups with that of unaffiliated firms.	ANOVA Multiple regression analysis.	Reports that firms affiliated with diversified business groups do not significantly differ from unaffiliated firms in terms of accounting and stock market measures of performance.
Chu (2004) [39]	To investigate the influence of group affiliation on performance of firms.	Multiple regression analysis.	Finds a U-shape relationship between group affiliation and profitability in emerging economies.
Khanna and Yafeh (2005) [2]	To examine whether business groups facilitate mutual insurance among group-affiliated firms.	Weighted least square (WLS) regression is used for the analysis.	Finds substantial evidence of risk sharing by Japanese, Korean, and Thai groups, but little evidence of it elsewhere.
Claessens et al. (2006) [41]	To investigate the benefits and costs of group affiliation.	Multiple regression analysis.	Finds that mature and slow-growing firms with ownership structures gain more from group affiliation, while young and high-growth firms lose more.
Zattoni et al. (2009) [32]	To analyze how business group affiliation affects performance in India in the post-reform era i.e., from 1990 to 2006.	Applied SAS procedure (Time-series and cross-section regression) with variance component model.	Finds (1) benefits of business group affiliation are evident in the early phase of institutional transition (2) older group-affiliated firms are better able to cope with institutional transition than younger group-affiliated firms.

Table A1. *Cont.*

Author	Objective	Method	Key Findings
Carney et al. (2011) [26]	To study business group affiliation and performance.	Weighted least squares (WLS).	Finds that affiliates perform better in contexts with underdeveloped financial and labor markets.
He et al. (2013) [16]	To discover whether group-affiliated firms tend to outperform standalone firms.	Fixed effect OLS regression	Finds that business group membership has no effect on accounting performance
Elango et al. (2016) [9]	To study the impact of specific business group characteristics on the performance of group-affiliated firms.	Hierarchical linear models (HLM).	Finds (1) membership in a group contributes 6% of the performance variation of affiliated firms; (2) the importance of the business group to performance varies with the extent of group diversification, age and size.

Table A2. Sample Distribution across Industries.

Industry	Two-Digit SIC Code	Number of Firms	Percentage of Entire Sample
Food & Tobacco	1, 2, 9, 20, 21, 54	35	12
Basic Industries including Petroleum	10, 12, 13, 14, 24, 26, 28, 29, 33	74	26
Construction	15, 16, 17, 32, 52	20	7
Textile & Trade	22, 23, 31, 51, 53, 56, 59	129	45
Consumer Durables	25, 30, 36, 37, 39, 50, 55, 57, 34, 35, 38	7	3
Transportation	40, 41, 42, 44, 45, 47	17	6
Services	72, 73 75, 76, 80, 82, 87, 89	2	1
Others	No specific SIC code	0	0
Entire Sample		284	100

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