

THE LAHORE JOURNAL OF BUSINESS

Lahore School of Economics

*Muhammad Mounas Samim,
Shakeel Iqbal Awan, Basheer
Ahmad*

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Manufacturing Firms: Evidence
from Pakistan**

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Leverage Adjustment in Manufacturing Firms: Evidence from Pakistan

Muhammad Mounas Samim,* Shakeel Iqbal Awan,
Basheer Ahmad*****

Abstract

This study explores firms' leverage behavior and speed of adjustment in the context of selected performance indicators in Pakistan's manufacturing industry. Leverage behavior is predicted using ordinary least squares, based on four performance indicators: profitability, tangibility, size and growth. The speed of adjustment of leverage is estimated using a general linear model and partial adjustment model. We find that profitability, tangibility and growth play a significant role in leverage behavior and the speed of adjustment, although both differ across sectors. Moreover, exponential leverage adjustment appears to be better than linear leverage adjustment.

Keywords: liquidation, firm value, leverage.

JEL classification: G310, G320, G330.

1. Introduction

This study looks at firms' financial decisions and their short-run and long-run financial operations. There are two types of financing: equity and debt. Most firms use only equity financing, while some use both equity and debt financing in different proportions (Hovakimian, Hovakimian & Tehranian, 2004). In equity financing, firms pay out dividends, while debt financing incurs interest. Firms that use debt financing along with equity financing are known as leveraged firms. Novy-Marx (2011) argues that firms with higher operating leverage earn higher returns than firms without operating leverage. Capital expenditures and current expenses are met using the cash flow generated by the firm's ongoing operations or projects and by obtaining debt from outside.

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Firms use debt to expand their operations; their debt targets are adjusted for accounting periods according to their cash flow. Growth firms use debt conservatively while larger, profitable firms use debt carefully. They will attempt to meet their set leverage targets aggressively (Graham, 2000). Leverage is also the ratio that reflects the ability of the firm to return the loan. There are different ways of calculating firm leverage: Faulkender, Flannery, Hankins and Smith (2012) use the ratio of total debt to total assets plus net income. Debt-availing companies gain a tax shield benefit against interest payments (Graham, 2000). The interest on debt is paid out of the cash inflow, whereas tax is paid on earned income after interest payments.

Firms that avail very large loans compared to equity may risk bankruptcy (Dotan & Ravid, 1985). Myers (2001) argues that, when availing a loan, the firm's manager should know how much debt is needed against the equity to avoid the cost of bankruptcy under tradeoff theory. Dividends are paid from the firm's retained earnings, which can also be used to invest in core businesses (external opportunities). Dividends are paid after reinvestment in external opportunities, which reflects the firm's residual dividend policy (Smith, 2009).

Of Pakistan's manufacturing firms, about 50 companies are listed on the Karachi Stock Exchange (KSE) 100 index, which reflects the sector's importance in national economic growth. Countries with a relatively developed industrial sector have a higher GDP and better living standards (Easterlin, 2000). In this context, we focus on interest rates and target debt in relation to how firms in Pakistan finance their operations. The process of adjusting the target debt in each accounting period needs appropriate predictions and solutions. Larger firms usually rely on long-term debt, with some proportion of debt adjusted after every accounting period (Barclay & Smith, 1995). This study looks at the proportion of debt adjustment and identifies hurdles in the speed of adjustment.

2. Literature Review

This section discusses the capital structure theories and empirical evidence relevant to leverage adjustment.

2.1. Market Timing Hypothesis

The market timing hypothesis shows how investors choose to buy or sell securities according to changes in the market. If the market value of a security is lower than its intrinsic value, this means the security is

undervalued in the market. In these circumstances, the firm can buy back the security at its real cost: this signals that the real estimate of the security is higher than its market value (Dittmar, 2000). Such market changes, however, tend to be unreliable, and financial analysts need to make better predictions to earn a higher profit. Some investors perform actively in the business sector while others invest in mutual funds instead (Pástor & Stambaugh, 2002).

Hovakimian (2006) estimates leverage using ordinary least squares (OLS), with the lagged value of profit, tangibility and size as independent variables. Jagannathan and Korajczyk (1986) suggest that artificial market timing can be generated by investing in options such as securities, whereas mutual funds have a negative timing ability. Selectivity and market timing performance are negatively correlated – if the rates of mutual funds are high, then changes in market timing are slow.

Baker and Wurgler (2002) argue that managers assess market timing opportunities based on the ratio of the market value to the book value. Firm valuations are higher when their leverage is low and they are likely to raise their funds. Firm valuations decrease when their leverage increases. Capital structure is affected considerably by variations in market valuation. Becker, Ferson, Myers and Schill (1999) find that investment benchmarks are an important variable as is the information available to investors. If public information is controlled, then benchmark investors are more likely to be highly risk-averse in relation to mutual funds.

Market timing is significant: if stock prices go up, then firms' equity increases (De Bie & De Haan, 2007). Henriksson (1984) uses parametric and nonparametric tests to determine whether mutual fund managers devise investment strategies based on the return on a market portfolio. According to Elliott, Koeter-Kant and Warr (2008), firms are more interested in issuing an equity if it is overvalued. On the other hand, mispricing is also a significant variable in choosing which securities to issue.

2.2. Tradeoff Theory

Under the tradeoff theory, firms decide how much investment will come from equity and how much from debt in order to balance the risk and return. This comparison is made to avoid the risk of bankruptcy associated with using a large amount of debt (Dotan & Ravid, 1985). Shah and Khan (2007) conclude that there is a tradeoff between tangibility and leverage if a pooled regression analysis is used to estimate leverage. The volatility of depreciation is the opposite of the tradeoff theory. Akinlo (2011) finds that

growth has a positive relationship with leverage under the tradeoff theory, while tangibility, liquidity and profitability have a negative impact. Hackbarth, Hennessy and Leland (2007) show how the theory explains corporate debt and capital structure. Small firms with the capacity for debt will use only bank debt, while larger firms with a low capacity for debt will resort to the market as well as bank debt proportionally, where the latter accounts for a larger proportion.

2.3. Pecking Order Theory

Firms seeking to invest in new external opportunities face a hierarchy of investment options from the most preferable (internal funding) to the least preferable (debt or debt-equity). The more preferable options will have a lower transaction cost. For instance, retained earnings or free cash in hand have no transaction cost. Akinlo (2011) suggests that GDP, sales, liquidity, size and tangibility have a significant and positive relationship with leverage. Shah and Khan (2007) and Akinlo (2011) both conclude that, as the firm's profitability increases, so does its internal financing, thus automatically lowering the use of debt.

Ramlall (2009) measures leverage for a sample of nonfinancial Mauritian firms based on long-term and short-term debt. He finds that tangibility has a positive effect, while liquidity and size have a negative effect on leverage. The no-debt tax shield, profitability and growth have no impact, while the age of the firm affects leverage slightly. Vasiliou, Eriotis and Daskalakis (2009) evaluate the capital structure choices of Greek firms listed on the Athens stock exchange. They argue that a negative relationship between profitability and leverage does not necessarily mean that the pecking order theory applies: sometimes, an increase in profitability may increase the firm's choice to use debt financing.

2.4. Empirical Literature

The general phenomenon of repurchase implies that firms tend to buy back securities undervalued by the market. This is done when firms have surplus retained earnings in order to avoid the associated agency cost (Black & Scholes, 1972) of unspent retained earnings being used by the firm's managers to finance unnecessary projects (Dyl, 1988). Securities are issued when they are overvalued and bought back when undervalued: both actions have the same effect on capital structure decisions (Baker & Wurgler, 2002). As a result, current capital structure is strongly related to historical market values.

Firms' cash flow in the short run, the long-run volatility of their capital structure and long operating cycles are forecasted by accruals (timing and matching), which decrease the ability to reflect firm performance (Dechow, 1994). Tangibility and firm size are positively correlated with leverage, but not statistically significant. Leverage is positively correlated with growth and profitability, but the latter is statistically significant whereas growth is not (Shah, Hijazi & Javed, 2004). If the leverage ratio is high, then the level of risk also rises, which implies that higher leverage is associated with greater variation in stock prices (Bhatti, Majeed, Rehman & Khan, 2010).

Determinants such as firm size, tangibility, leverage, annual tax, growth and business risk influence the firm's decisions regarding debt and equity (Memon, Bhutto & Abbas, 2012). Financially constrained business operations are more sensitive to a positive cash flow. In this context, Almeida, Campello and Weisbach (2004) find that unconstrained business operations have weak support in the textiles sector, which implies that it generally has a less than optimal capital structure. Gul, Sajid, Mumtaz and Murtaza (2012) show that asset maturity leads to an increase in long-term debt, while firm size and operating cycles decrease long-term debt. Their pooled model shows a direct, positive relationship between the tax rate and debt maturity. The debt ratio is negatively correlated with profits, the liquidity ratio, variability in earnings and tangibility (asset structure), and positively correlated with firm size (Sheikh & Wang, 2011).

The capital structure theories discussed above can help explain the financing behavior of Pakistani firms. Gilson (1997) determines the impact of transaction costs on leverage in the presence of different variables. The study uses a basic partial adjustment model to estimate the target leverage and calculates the actual leverage in two different ways. The results show that firms with constrained financing reform their debt, the transaction cost of which raises the debt ratio. According to Axelson, Jenkinson, Strömberg and Weisbach (2009), firms' transaction costs are significantly smaller when their financing is less constrained: their leverage decreases along with the risk of financial distress. Akinlo (2011) uses firm performance indicators to determine capital structure in connection with leverage.

OLS can be used to analyze leverage according to a number of variables. Under the pecking order or agency theory, profitability has a negative impact on leverage, while other independent variables have a positive impact. This shows that, if the firm is earning profits, it is more likely to use retained earnings to meet its financial needs and avoid debt

(external) financing (Demirgüç-Kunt & Maksimovic, 1998). According to the tradeoff theory, only growth has a negative impact on leverage. Under agency theory, GDP has a negative impact on leverage.

Shah and Khan (2007) use a sample of industrial firms listed on the KSE-100 index to estimate the optimal capital structure using panel data. The impact of tangibility is in line with the theory, whereas the effect of volatility on depreciation is not. Growth has the expected effect under the agency theory, while firm size does not predict leverage under any theory. Faulkender et al. (2012) find that leverage adjustment is more frequent if transaction costs are lower: if the marginal cost is low, this means that the adjustment will benefit the firm and its capital structure will adjust at the optimal level. Moreover, over-leveraged firms will adjust their leverage targets more rapidly than under-leveraged firms.

The capital cash flow method is easier to use than the free cash flow method. Both are equal if discounted on the cost of capital when deriving leverage adjustment formulae (Ruback, 2002). Kaplan and Ruback (1995) argue that the discounted cash flow method is the most reliable way of assessing the market value of comparable companies. The same variables are significant in relation to firm decisions about debt in developed and developing countries, although Booth, Aivazian, Demirgüç-Kunt and Maksimovic (2001) conclude that understandings of modern financial theory can differ across countries.

3. Study Aims and Rationale

We have already established that firms need to finance their short-run and long-run operational needs – decisions for which their managers are responsible. Generally, firms meet their expenses (operating expenses, interest payments, dividend payments and tax payments) out of their cash inflows. When they cannot do so, they set leverage targets according to their needs and capital structure (debt plus equity). This study evaluates the stream of cash flow patterns and leverage target adjustments.

The general method for computing leverage (*total debt / total assets*) implies that leverage is low if cash flows – a part of total assets – are high and vice versa. Thus, cash flows affect actual leverage in both directions. We estimate the extent to which leverage is affected by firm performance indicators (the independent variables) and how much leverage is adjusted in each accounting period. The study's specific objectives are to:

- Examine leverage behavior in Pakistan's manufacturing sector.
- Gauge the strength of the relationship between leverage and factors affecting leverage – growth, size, profitability and tangibility.
- Analyze the functional form of leverage (linear or exponential).
- Determine the speed of adjustment of leverage in the manufacturing industry across different sectors.
- Recommend measures to help financial managers in making decisions about debt adjustment.

Some of the study's assumptions are that (i) indicators such as growth, size, profitability and tangibility affect leverage in manufacturing firms in Pakistan, (ii) linear adjustment is preferable to exponential adjustment, and (iii) leverage adjustment speed is different across sectors within the industry. In this context, we ask the following questions:

- How significant is the effect of profitability, tangibility, size and growth on leverage?
- Does leverage behavior vary across sectors of the manufacturing industry?
- What percentage of actual leverage should be adjusted in each accounting period compared to expected leverage?
- Should leverage adjustments be made linearly or exponentially?
- What should be the speed of adjustment across different sectors?

The study contributes to the literature by taking into account the importance of Pakistan's manufacturing sector to GDP growth. The sector needs to perform efficiently and effectively for firms to meet their goals. Given the poor investment and security climate in Pakistan, firms may find their performance affected, which can result in unreliable sales and cash inflows from other sources. Thus, debt financing is useful when the prevailing interest rates suit the firm's financial conditions. Leverage can help enhance the working capacity of the firm and its working capital strength. Accordingly, our results may be useful to manufacturing firms when making debt adjustment decisions.

4. Description of Variables

The dependent variable, leverage, is the percentage of debt. While long-term debt is generally used to calculate leverage, Faulkender et al.

(2012) use the formula *total debt to total assets*, given that most firms do not resort to short-term debt. The independent variables include tangibility, size, growth and profitability. These are described below.

The collateral value of a firm's fixed assets significantly affect its ability to obtain debt financing (Rafiq, Iqbal & Atiq, 2008). Large firms tend to use retained earnings to finance their operations, which means that tangibility and assets are inversely related (Frank & Goyal, 2009). This variable is calculated using the formula $tangibility = CA/FA$ (Elliott et al., 2008). The tangibility of the firm is positively correlated with its leverage, but not statistically significant (Shah et al., 2004).

The size of the firm is measured by sales volume or the log of sales. Size is positively correlated with leverage, but not statistically significant (Shah et al., 2004). Asset maturity leads to an increase in long-term debt while firm size and operating cycles decrease long-term debt (Gul et al., 2012). Size and leverage have a positive relationship when short-term and long-term debt are considered collectively (Sheikh & Wang, 2011).

While Faulkender et al. (2012) measure firm growth based on the ratio of the market value to the book value of equity, we compute the return on equity (ROE) as *net income before tax / shareholders' equity*. The effect of growth on leverage differs across the literature. Some studies find that leverage is positively correlated with growth (Shah et al., 2004). Akinlo (2011) shows that growth has a positive relationship with leverage under the tradeoff theory, while Ramlall (2009) argues that growth is not an important factor in variations in leverage. Growth is seen to determine capital structure decisions in Pakistan's textiles sector (Memon et al., 2012).

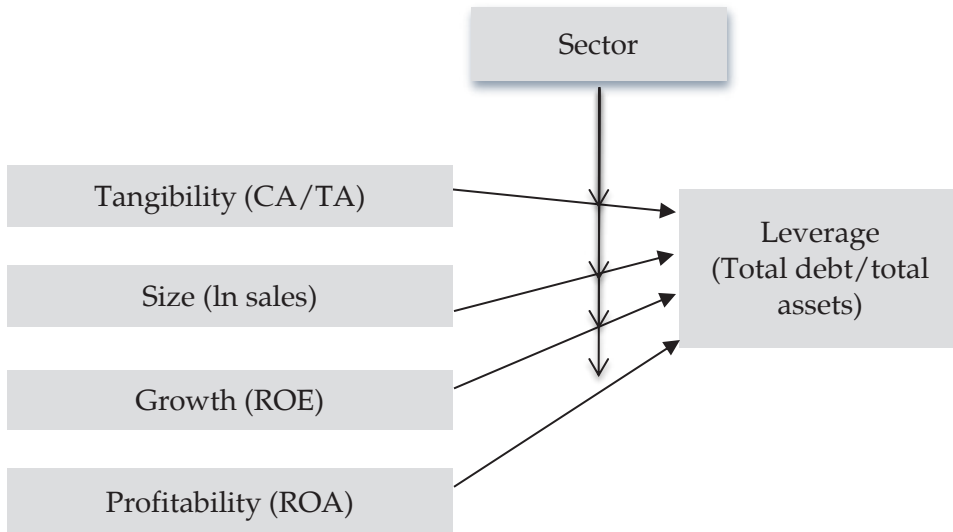
Profitability is measured in two ways: (i) as earnings before interest and tax and (ii) as the ratio of earnings before tax to total assets (Frank & Goyal, 2009). We use the formula $profitability = net\ income / total\ assets$. Profitability has a negative impact on leverage under the tradeoff theory, as it increases the firm's internal financing, which lowers the need for debt financing (Akinlo, 2011). The negative effect of profitability on leverage is not always significant because an increase in profitability can also increase the firm's choice to borrow (Vasiliou et al., 2009).

5. Research Model and Hypotheses

Figure 1 illustrates our theoretical framework. We use OLS to test the significance of the independent variables. We also evaluate leverage

behavior and adjustment speed in the manufacturing industry across sectors as well as in the presence of the independent variables, using a partial adjustment model.

Figure 1: Theoretical framework



The study's hypotheses are as follows:

- H1: At least one independent variable is a significant predictor of leverage.
- H2: Profitability is a significant predictor of leverage.
- H3: Tangibility is a significant predictor of leverage.
- H4: Growth is a significant predictor of leverage.
- H5: Size is a significant predictor of leverage.

Leverage is estimated across different sectors by controlling for the sector. This implies the following:

- H6: Leverage behavior is different across sectors.
- H7: Leverage adjustment speed is different across sectors.

6. Dataset and Methodology

The study's dataset comprises secondary data on 49 manufacturing firms, across 17 different sectors, listed on the KSE-100 index over the period 2006 to 2013 (see Appendix). The data was taken from the State Bank of Pakistan's annual reports on nonfinancial firms.

Expected leverage is estimated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \quad (1)$$

where Y is leverage (the dependent variable), α is the intercept and β_j denotes the coefficients of the independent variables. X_1 is the lag of leverage, X_2 is tangibility, X_3 is size, X_4 is growth, X_5 is profitability and ϵ is the error term.

The following partial adjustment model is used to evaluate the speed of adjustment of leverage:

$$L_t - L_{t-1} = \gamma(L_t^e - L_{t-1}) \quad (2)$$

where L^e is expected leverage (estimated using OLS) at time t , and L_{t-1} and L_t are the actual leverage at time $t - 1$ and t , respectively. The left-hand side represents the actual change whereas the right-hand side is the desired change. γ is the coefficient of adjustment and lies between 0 and 1. For example, if $\gamma = 0.5$, this would mean that 50 percent of the actual leverage was being adjusted in one accounting period. We derive the following regression equations from the partial adjustment model:

$$\text{Ln}L_t - \text{Ln}L_{t-1} = \gamma(\text{Ln}L_t^e - \text{Ln}L_{t-1}) \quad (3)$$

$$\text{Ln}L_t - \text{Ln}L_{t-1} = \gamma \text{Ln}L_t^e - \gamma \text{Ln}L_{t-1} \quad (4)$$

$$\text{Ln}L_t = \gamma \text{Ln}L_t^e + \text{Ln}L_{t-1} - \gamma \text{Ln}L_{t-1} \quad (5)$$

$$\text{Ln}L_t = \gamma \text{Ln}L_t^e + (1 - \gamma) \text{Ln}L_{t-1} \quad (6)$$

The sample firms are analyzed one by one in order to differentiate them by functionality, sector and industry. Of the 49 firms initially selected, three were eliminated from the sample due to lack of proper data. Having computed the dependent and independent variables, we apply the regression model to examine the significance of the predictors. Next, we control for the sector as a moderator variable to evaluate the significance of

all the variables across different sectors. We determine the predicted leverage and use the partial adjustment model to estimate the adjustment speed of leverage, which differs across sectors. Leverage speed is predicted by the coefficient of the speed of adjustment.

7. Results and Discussion

This section presents the study's results for the relationship between leverage and the independent variables, the impact of the lagged value of leverage using the partial adjustment model, the effect of the independent variables on leverage across different sectors and the estimated speed of adjustment.

7.1. Regression Analysis

Using an autoregressive distributed lag model, the lag of the log of leverage is used as a predictor along with the four independent variables against the log of leverage as the dependent variable. The value of R^2 (0.761) measures the extent to which these variables explain leverage and gives the model's goodness of fit. The Durbin–Watson d statistic is 2.03, which measures autocorrelation. We apply the Durbin–Watson h test to demonstrate any autocorrelation because we have used the lagged value of the dependent variable:

$$\begin{aligned} \text{Durbin Watson } h &= \sqrt{n} \left(1 - \frac{1}{2}d\right) \approx N(0,1) \\ &= \sqrt{321} \left(1 - \frac{1}{2}2.073\right) = -0.6205 \end{aligned} \quad (7)$$

The value of the Durbin–Watson h is -0.6205 , which indicates there is no autocorrelation problem. Profitability, growth and the lag of the log of leverage are found to be significant ($\beta = -0.025^{**}$, $\beta = 0.006^{**}$ and $\beta = 0.758^{**}$, respectively). The equation comprising the significant variables is:

$$\text{LnLev} = \beta_0 + 0.758(\text{LnLev}_{t-1}) - 0.025(\text{profit}) + 0.006(\text{growth}) + \epsilon$$

The coefficient of the log of the lag of leverage (the predictor) is 0.758, which is equal to the $(1 - \gamma)$ term in the partial adjustment model. Thus, $\gamma = 1 - 0.758 = 0.242$. The positive sign implies that roughly 24 percent of the log of leverage for the manufacturing industry is adjusted in one accounting period, that is, the speed of adjustment of the log of leverage is about 24 percent. Since we have used the log of leverage in this model rather than the original unit, we derive the following:

$$LnL_t = \beta_0 + \beta_1(LnL_{t-1}) + \beta_2(\text{profit}) + \beta_3(\text{growth}) \quad (8)$$

This model concerns only the autoregressive predictor of leverage. Adding the value of the coefficient of the log of the lag of leverage, we get:

$$LnL_t - LnL_{t-1} = \gamma (LnL_t^e - LnL_{t-1}) \quad (9)$$

$$LnL_t = (1 - \gamma)LnL_{t-1} + \gamma LnL_t^e \quad (10)$$

$$LnL_t = (0.758)LnL_{t-1} + \gamma LnL_t^e \quad (11)$$

$$LnL_t = (1 - 0.242) LnL_{t-1} + \gamma LnL_t^e \quad (12)$$

$$LnL_t = LnL_{t-1} - (0.242)LnL_{t-1} + \gamma LnL_t^e \quad (13)$$

$$LnL_t - LnL_{t-1} = 0.242 (LnL_t^e - LnL_{t-1}) \quad (14)$$

$$LnL_t = 0.242(LnL_{t-1}) \quad (15)$$

$$L_t = (L_{t-1})^{0.242} \quad (16)$$

Equation (16) is used to compute the leverage and its adjustment speed (Table 1).

Table 1: Speed of adjustment of leverage

L_{t-1}	LnL_{t-1}	LnL_t $= 0.242(LnL_{t-1})$	$L_t = (L_{t-1})^{0.242}$	Percent change
0.05	-2.99573	-0.72497	0.4843400	
0.10	-2.30259	-0.55723	0.5727960	0.182631
0.25	-1.38629	-0.33548	0.7149925	0.248249
0.50	-0.69315	-0.16774	0.8455723	0.182631
0.75	-0.28768	-0.06962	0.9327491	0.103098
0.90	-0.10536	-0.02550	0.9748251	0.045109

Source: Authors' calculations.

7.2. Analysis by Sector

Having analyzed the leverage variable for the entire sample, we break it down by sector (as the moderator variable) (Table 2).

Table 2: Results of analysis by sector

Sector	LnLev-1		Tangibility		Profitability		Growth		Size	
	B	Sig	B	Sig	B	Sig	B	Sig	B	Sig
Chemicals	0.518	0.000**	-3.826	0.002**	0.058	0.020*	0.017	0.044*	0.017	0.887
Cement	0.591	0.000**	-1.888	0.004**	0.041	0.002**	0.008	0.171	-0.005	0.934
Foods	0.391	0.209	-1.550	0.553	-0.0326	0.118	0.013	0.089	0.025	0.865
Textiles	0.745	0.000**	-0.611	0.542	-0.031	0.080	0.007	0.280	0.001	0.991
Ind. metal and mining	0.322	0.424	-5.353	-0.0326	0.118	0.565	0.009	0.362	0.075	0.608
Household goods	0.040	0.949	25.837	-0.031*	0.080	0.748	0.012	0.570	0.749	0.474
Pharma and biotech	0.181	0.620	-0.001	0.004**	0.565	0.832	0.000	0.723	0.001	0.785
Tobacco	-0.590	0.573	-12.77	0.037*	0.748	0.409	0.022	0.345	-0.105	0.880
Forestry	-0.199		1.881		0.003		0.010		0.453	
General industry	0.493	0.060	0.662	0.503	-0.013	0.538	0.006	0.726	0.004	0.991
Automobiles	0.334	0.046*	-7.834	0.003**	-0.201	0.017*	0.103	0.020*	-1.282	0.069
Electronic and electrical goods	0.820	0.042*	1.169	0.707	-0.033	0.500	0.012	0.544		0.715
Beverages	0.338	0.470	-3.077	0.233	-0.099	0.321	0.032	0.629		0.362

Source: Authors' calculations.

The results suggest that leverage behaves differently across sectors. Using a multiple linear regression model, we find that the lag of the log of leverage is significant for five sectors: chemicals ($\beta = 0.518^{**}$), cement ($\beta = 0.591^{**}$), textiles ($\beta = 0.745^{**}$), automobiles ($\beta = 0.334^*$), and electrical and electronic goods ($\beta = 0.820^*$). Tangibility is significant for six sectors: chemicals ($\beta = -3.826^{**}$), cement ($\beta = -1.888^{**}$), textiles ($\beta = 0.745^{**}$), automobiles ($\beta = 0.334^*$) and electrical and electronic goods ($\beta = 0.820^*$). Leverage has a significant relationship solely with tangibility in three other sectors: household goods, pharma and biotechnology, and tobacco. In textiles and in electronic and electrical goods, leverage is affected only by the lag of leverage while the other four independent variables are insignificant.

The coefficient of the lag of the log of leverage (the predictor) is 0.518, which is equal to the $(1 - \gamma)$ term in the partial adjustment model. Thus, $\gamma = 1 - 0.518 = 0.482$. The positive sign implies that about 48 percent of the log of leverage for the chemicals sector is adjusted in one

accounting period. Leverage is computed using the equation $Lev = (Lev_{t-1})^{\gamma}$ on the basis of the assumed values of leverage (Table 3).

Table 3: Speed of adjustment in chemicals sector

L_{t-1}	LnL_{t-1}	LnL_t $= 0.482(LnL_{t-1})$	L_t $= (L_{t-1})^{0.482}$	Percent change
0.05	-2.99573	-1.44394	0.234585672	
0.10	-2.30259	-1.10985	0.328095293	0.398616083
0.25	-1.38629	-0.66819	0.511214265	0.558127398
0.50	-0.69315	-0.33410	0.714992493	0.398616083
0.75	-0.28768	-0.13866	0.870020832	0.216825128
0.90	-0.10536	-0.05078	0.950283907	0.092254199

Source: Authors' calculations.

The table shows the changes in actual leverage corresponding to the lagged value. If the lag of leverage is 0.05, then leverage will be 0.234. If the lag of leverage increases to 0.10, leverage becomes 0.328. If the lag of leverage is 0.25, then the resulting leverage is 0.511. At this level, the adjustment speed is about 56 percent, which is higher than for all other values of leverage. Our overall analysis of this sector shows that the maximum rate of adjustment (55.81 percent) occurs when leverage in the previous period is about 25 percent. Given the same lagged leverage value, the maximum adjustment speed is 45.47 percent in the cement sector, 26.32 percent in textiles, 84.08 percent in the automobile sector and 17.93 percent in electrical and electronic goods. Thus, leverage adjustment in the automobile sector is higher than in other significant sectors.

7.3. Discussion

Leverage in the manufacturing industry is affected by profitability, where the negative value of the coefficient reflects the inverse relationship between leverage and profitability. This result is in line with Baker (1973). Profitability enhances the ability of the firm to meet its future financial needs, in turn lowering the need for debt financing and decreasing leverage. Similarly, tangibility has an inverse relationship with leverage, indicating that the firm has a reasonable volume of current assets against total assets and does not need to borrow.

ROE has a positive relationship with leverage, where our results are in line with Titman and Wessels (1988). When demand for the firm's

product increases, it will expand its current assets to meet the change in demand. The growth in its working capital will increase the size of the firm. In turn, the firm will need more cash to finance the purchase of new assets: if it borrows for this purpose, its leverage will increase. While Titman and Wessels (1988) show that the short-term debt ratio is inversely related to size and positively related to growth, in our overall analysis, size has an insignificant impact on leverage.

8. Conclusion

This study examines the changes in leverage associated with four performance indicators – profitability, tangibility, growth and firm size – for a sample of manufacturing firms in Pakistan. We find no evidence of a significant relationship between firm size and leverage. There is, however, a significant, inverse relationship between tangibility and leverage, and between profitability and leverage. In both cases, this implies that manufacturing firms earning higher returns (profitability) against their assets will have lower leverage. Consequently, firms need to adjust their leverage targets accordingly.

In addition, leverage varies across sectors, which means that the speed of adjustment is also different. The results indicate that firms with less than 25 percent leverage have a higher rate of adjustment. At levels above 25 percent, the adjustment speed decreases progressively. The sectoral analysis shows that tangibility, profitability and growth have a significant relationship with leverage in all manufacturing sectors. The coefficient of adjustment is significant in only five sectors: chemicals, cement, textiles, automobiles, and electrical and electronic goods. The remaining sectors have insignificant coefficients of adjustment (equal to 0), which implies there is no difference between leverage and predicted leverage in these sectors. Thus, no adjustment of leverage is required.

Finally, we argue that the exponential adjustment of leverage is a better predictor than linear adjustment (the log of leverage). The calculated adjustment speeds of leverage differ across sectors – 48.2 percent for the chemicals sector, 40.9 percent for cement, 25.5 percent for textiles, 66.6 percent for automobiles and 18 percent for electrical and electronic goods – but the adjustment behavior remains the same.

References

- Akinlo, O. (2011). Determinants of capital structure: Evidence from Nigerian panel data. *African Economic and Business Review*, 9(1), 1–16.
- Almeida, H., Campello, M., & Weisbach, M. S. (2004). The cash flow sensitivity of cash. *Journal of Finance*, 59(4), 1777–1804.
- Axelson, U., Jenkinson, T., Strömberg, P., & Weisbach, M. S. (2009, August). *Leverage and pricing in buyouts: An empirical analysis*. Paper presented at the 36th Annual Meeting of the European Finance Association, Bergen, Norway.
- Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *Journal of Finance*, 57(1), 1–32.
- Baker, S. H. (1973). Risk, leverage and profitability: An industry analysis. *Review of Economics and Statistics*, 55(4), 503–507.
- Barclay, M. J., & Smith, C. W. (1995). The maturity structure of corporate debt. *Journal of Finance*, 50(2), 609–631.
- Becker, C., Ferson, W., Myers, D. H., & Schill, M. J. (1999). Conditional market timing with benchmark investors. *Journal of Financial Economics*, 52(1), 119–148.
- Bhatti, A. M., Majeed, K., Rehman, I., & Khan, W. A. (2010). Effect of leverage on risk and stock returns: Evidence from Pakistani companies. *International Research Journal of Finance and Economics*, 58(2010), 32–49.
- Black, F., & Scholes, M. (1972). The valuation of option contracts and a test of market efficiency. *Journal of Finance*, 27(2), 399–417.
- Booth, L., Aivazian, V., Demirgüç-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *Journal of Finance*, 56(1), 87–130.
- De Bie, T., & De Haan, L. (2007). Market timing and capital structure: Evidence for Dutch firms. *De Economist*, 155(2), 183–206.

- Dechow, P. M. (1994). Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics*, 18(1), 3–42.
- Demirgüç-Kunt, A., & Maksimovic, V. (1998). Law, finance and firm growth. *Journal of Finance*, 53(6), 2107–2137.
- Dittmar, A. K. (2000). Why do firms repurchase stock? *Journal of Business*, 73(3), 331–355.
- Dotan, A., & Ravid, S. A. (1985). On the interaction of real and financial decisions of the firm under uncertainty. *Journal of Finance*, 40(2), 501–517.
- Dyl, E. A. (1988). Corporate control and management compensation: Evidence on the agency problem. *Managerial and Decision Economics*, 9(1), 21–25.
- Easterlin, R. A. (2000). The worldwide standard of living since 1800. *Journal of Economic Perspectives*, 14(1), 7–26.
- Elliott, W. B., Koëter-Kant, J., & Warr, R. S. (2008). Market timing and the debt–equity choice. *Journal of Financial Intermediation*, 17(2), 175–197.
- Faulkender, M., Flannery, M. J., Hankins, K. W., & Smith, J. M. (2012). Cash flows and leverage adjustments. *Journal of Financial Economics*, 103(3), 632–646.
- Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, 38(1), 1–37.
- Gilson, S. C. (1997). Transactions costs and capital structure choice: Evidence from financially distressed firms. *Journal of Finance*, 52(1), 161–196.
- Graham, J. R. (2000). How big are the tax benefits of debt? *Journal of Finance*, 55(5), 1901–1941.
- Gul, S., Sajid, M., Mumtaz, R., & Murtaza, G. (2012). The determinants of corporate debt maturity structure: A case study of Pakistan. *African Journal of Business Management*, 6(14), 4998–5003.

- Hackbarth, D., Hennessy, C. A., & Leland, H. E. (2007). Can the tradeoff theory explain debt structure? *Review of Financial Studies*, 20(5), 1389–1428.
- Henriksson, R. D. (1984). Market timing and mutual fund performance: An empirical investigation. *Journal of Business*, 57(1), 73–96.
- Hovakimian, A. (2006). Are observed capital structures determined by equity market timing? *Journal of Financial and Quantitative Analysis*, 41(1), 221–243.
- Hovakimian, A., Hovakimian, G., & Tehranian, H. (2004). Determinants of target capital structure: The case of dual debt and equity issues. *Journal of Financial Economics*, 71(3), 517–540.
- Jagannathan, R., & Korajczyk, R. A. (1986). Assessing the market timing performance of managed portfolios. *Journal of Business*, 59(2), 217–235.
- Kaplan, S. N., & Ruback, R. S. (1995). The valuation of cash flow forecasts: An empirical analysis. *Journal of Finance*, 50(4), 1059–1093.
- Memon, F., Bhutto, N. A., & Abbas, G. (2012). Capital structure and firm performance: A case of textile sector of Pakistan. *Asian Journal of Business and Management Sciences*, 1(9), 9–15.
- Myers, S. C. (2001). Capital structure. *Journal of Economic Perspectives*, 15(2), 81–102.
- Novy-Marx, R. (2011). Operating leverage. *Review of Finance*, 15(1), 103–134.
- Pástor, L., & Stambaugh, R. F. (2002). Investing in equity mutual funds. *Journal of Financial Economics*, 63(3), 351–380.
- Rafiq, M., Iqbal, A., & Atiq, M. (2008). The determinants of capital structure of the chemical industry in Pakistan. *Lahore Journal of Economics*, 13(1), 139–158.
- Ramlall, I. (2009). Determinants of capital structure among non-quoted Mauritian firms under specificity of leverage: Looking for a modified pecking order theory. *International Research Journal of Finance and Economics*, 31, 83–92.

- Rogoff, K. (1985). The optimal degree of commitment to an intermediate monetary target. *Quarterly Journal of Economics*, 100(4), 1169–1189.
- Ruback, R. S. (2002). Capital cash flows: A simple approach to valuing risky cash flows. *Financial Management*, 31(2), 85–103.
- Shah, A., Hijazi, T., & Javed, A. Y. (2004). The determinants of capital structure of stock exchange-listed nonfinancial firms in Pakistan [with comments]. *Pakistan Development Review*, 43(4), 605–618.
- Shah, A., & Khan, S. (2007). Determinants of capital structure: Evidence from Pakistani panel data. *International Review of Business Research Papers*, 3(4), 265–282.
- Sheikh, N. A., & Wang, Z. (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance*, 37(2), 117–133.
- Smith, D. M. (2009). Residual dividend policy. In H. K. Baker (Ed.), *Dividends and dividend policy* (pp. 115–126). Hoboken, NJ: John Wiley.
- Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *Journal of Finance*, 43(1), 1–19.
- Vasiliou, D., Eriotis, N., & Daskalakis, N. (2009). Testing the pecking order theory: The importance of methodology. *Qualitative Research in Financial Markets*, 1(2), 85–96.

*Appendix***List of sample firms**

	Firm	Sector	
1.	Fatima Fertilizer	Chemicals	1
2.	Fauji Fertilizer		
3.	Fauji Fertilizer Bin Qasim		
4.	Engro Corporation		
5.	Dawood Hercules Corporation		
6.	Arif Habib Corporation		
7.	Agritech		
8.	ICI Pakistan		
9.	Fauji Cement Corporation	Construction and materials (cement)	2
10.	Lafarge Pakistan Cement		
11.	Maple Leaf Cement		
12.	DG Khan Cement		
13.	Lucky Cement		
14.	Kohat Cement		
15.	Attock Cement		
16.	Cherat Cement		
17.	Javedan Corporation		
18.	Engro Foods	Food producers	3
19.	JDW Sugar Mills		
20.	National Foods		
21.	Nestle Pakistan		
22.	Rafhan Maize Products		
23.	Azgard Nine	Personal goods (textiles)	4
24.	Nishat Mills		
25.	Kohinoor Textile Mills		
26.	Nishat Chunian		
27.	Colgate Palmolive Pakistan		
28.	Bata Pakistan		
29.	International Steels	Industrial metals and mining	5
30.	International Industries		
31.	TRG Pakistan	Support services	6
32.	Feroze 1888 Mills	Household goods	7
33.	Glaxo Smith Kline Pakistan	Pharma and biotech	8
34.	Abbot Laboratories Pakistan		

Firm	Sector	
35. Pakistan Tobacco Company	Tobacco	9
36. TPL Tracker	Tech. hardware and equipment	10
37. Century Paper and Board Mills	Forestry (paper and board)	11
38. Ghani Glass Mills	General industrials	12
39. Package		
40. Thal Limited		
41. Siemens Pakistan Engro Company		
42. Atlas Honda	Automobiles	13
43. Pakistan Suzuki Motor Company		
44. Indus Motor Company		
45. Millat Tractors	Engineering	14
46. Pakistan Cables	Electronic and electrical goods	15
47. Murree Brewery	Beverages	16
48. Shezan International		
49. Grays of Cambridge Pakistan	Leisure goods	17

Integrating Operations and Marketing in the Fast Food Delivery Industry

Saad Shahid* and Shamila Nabi Khan**

Abstract

The purpose of this study is to find out how marketing and operations integrate to provide high-quality fast food delivery service. Based on survey data for three different restaurants that offer a telephone ordering service, we analyze the degree and strength of integration between marketing and operations and the relationship with customer behavioral intention. The results show that telephone customer care quality has a direct relationship with product quality and service quality. Both product and service quality have a significant relationship with consumer behavioral intention. We develop a model that integrates marketing and operations with accessibility and consumer attitudes to telephone ordering as moderator variables. Finally, the study suggests that each sample restaurant has a different operational strategy and needs to focus on different business factors.

Keywords: Marketing, operations management, operations, interaction.

JEL classification: C12, C42, L81, M31, M37.

1. Introduction

As the fast food delivery service industry continues to thrive, companies are compelled to develop new and improved technologies and methods to integrate operations and marketing efforts (Schlosser, 2012). Telephone ordering links home-based customers to fast food restaurants and is one way of integrating operations, marketing and sales (Olsen, 2004). This study examines the market for telephone ordering and fast food delivery services where marketing operations and strategies need to be carefully synergized. We survey three fast food restaurants with distinctly different operations and marketing strategies for delivering food to their customers. Based on the survey data provided by their customers, we investigate the relationships among marketing, operations and customer satisfaction.

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When consumers prefer the convenience (Glanz et al., 1998) of food delivered to their doorstep, it is important to ensure that companies meet or exceed the expectations associated with their marketing initiatives. This can only be done if marketing and operations are effectively integrated, which in turn reduces companies' delivery time (Teimoury & Fathi, 2013).¹ Many fast food delivery restaurants have learned the hard way how important it is to integrate the process of receiving a telephone order and delivering the product ordered. The first challenge is logistical: the food must be delivered within a particular timeframe. As their marketing communications indicate, the delivery window used by global fast food chains is 30 to 45 minutes. The tighter this window becomes, the greater the challenge for the company. The aim of offering a delivery service is to provide a wide range of consumer services without the consumer having to come to the restaurant, place an order and take it away. This incorporates consumer convenience, but at the same time poses an operational challenge for the company (Lee & Whang, 2001).

As an example, we take the case of the restaurant Burger Hub, which was unable to coordinate its marketing and operations strategies. While it promised a complementary delivery service within a 45-minute window, the company took between 1 and 1.5 hours to reach the consumer. At best, the consumer was left unhappy with the service; at worst, the order was cancelled. The delay in service delivery not only affected the company and the consumer at that point in time, but also cost the company any future sales associated with a loyal customer. Boyer and Hult (2005) explain that customers who experience better service quality will be more loyal and are likely to continue purchasing from a given company. Had Burger Hub relied less on offering a complementary delivery service to reduce costs and emphasized timely delivery instead, it could have targeted consumers who prefer convenience over cost.

Fast food chains such as Pizza Hut and KFC have achieved success by not rushing into the complicated process of providing a food delivery service. Pizza Hut markets itself as a high-quality pizza producer that guarantees fast, oven-hot delivery. In contrast, KFC markets attributes such as quick delivery and product offers to lure consumers into buying more. Increasingly, firms are competing on the basis of response, delivery and shipping time. Many firms now choose to announce a guaranteed maximum service delivery time to attract customers (Ho & Zheng, 2004).

¹ See also Tang (2010); O'Leary-Kelly and Flores (2002); Ho and Zheng (2004); Ray (2005); Feng, D'Amours and Beauregard (2008); Ioannidis and Kouikoglou (2008); Rao (2009); Vandaele and Perdu (2010); Erickson (2011); Oliva and Watson (2011).

2. Literature Review

Operational elements are those activities service providers perform that contribute to consistent quality, productivity and efficiency. These comprise the physical features of the service, that is, the characteristics of delivery that define and capture form, time and place. Operational service, for example, consists of elements such as product availability, product condition, delivery reliability and delivery speed.

Relational elements include those activities that enhance the service firm's understanding of its customers' needs and expectations, based on which it develops processes to meet these (Stank, Crum & Arango, 1999). This can include personnel or information systems to facilitate frequent communication and enable suppliers to better understand the firm's customer environment. Successful service firms perform well on both fronts: they understand customers' needs and expectations and are able to provide a corresponding level of service quality and efficiency (Schlesinger & Heskett, 1991).

Physical distribution includes the processes that support the flow of materials and related information from the point of origin (the stocking location) to the point of consumption (the consumer's location) (Lambert & Stock, 1993; Mentzer, Gomes & Krapfel, 1989). Cronin, Brady and Hult (2000) emphasize the importance of integrating marketing and operations in the services sector. Based on a model incorporating six service industries (healthcare, fast food, entertainment, spectator sports, long-distance sports and participative sports), they demonstrate the significant, direct path from value to intentions in all these industries and the significant, indirect path from value to satisfaction to intentions in most industries.

Zeithaml (1988) characterizes value as meaning a "low price," "whatever I want in a product," "the quality I get for the price I pay," and "what I get for what I give." She argues that these four meanings can be applied collectively such that "perceived value is the consumer's overall assessment of the utility of a product based on the perception of what is received and what is given."

In an innovative study on retail banks, Roth and Van Der Velde (1991) identify key success factors or service-related competitive priorities, three of which are relevant across service industries: (i) courteous service, (ii) consistent service and (iii) enlarging customer relationships. While the first and third relate to marketing, the second concerns operational

performance. Zeithaml, Berry and Parasuraman (1996) suggest that positive behavioral intention (BI) is reflected in the service provider's ability to persuade its customers to remain loyal, pay price premiums and communicate their concerns to other customers as well as to the company.

Clearly, there is likely to be a relationship between customer experience and BI that takes the shape of repeat purchases. In examining the relationship between customer experience and BI, we divide customer experience into three subsets – the quality of telephone customer care, products and service – which is where the study adds value to the literature.

Delivery service quality is the extent to which the customer's perceived delivery time matches the expected delivery time. Specifically, it is the probability that the perceived delivery time is shorter than the expected maximum delivery time (Ho & Zheng, 2004). The customer's perceived delivery time is 15 to 30 minutes – the period in which food can still be served fresh and while the customer is hungry. We use constructs such as service quality and BI to gauge whether delivery quality affects the consumer's intentions.

Boyer and Hult's (2005) model integrates marketing and operations in the online grocery industry, using moderating variables such as consumer attitudes and online accessibility as factors that affect customer BI. We build on this framework in the context of the fast food delivery industry. Intuitively, an online grocery ordering service adds consumer value in a way similar to fast food delivery services.

While both corporate and functional strategies are critical for an organization to be successful, we focus on the relationship between marketing and operations. Drawing on Narver and Slater (1990), responsive market orientation is a function of three subcomponents: (i) customer orientation (understanding the customer's needs and wants), (ii) competitor orientation (understanding competitors' strengths and weaknesses, and how they meet their customers' needs and wants), and (iii) inter-functional coordination (the coordinated use of the organization's resources to create superior value for customers) (Boyer & Hult, 2005).

Our study aims to determine the extent to which marketing (customer orientation) and operations (inter-functional coordination) are integrated and how this affects consumer BI in Pakistan's fast food delivery

industry.² The idea that customers prefer higher service quality is intuitive, particularly if price and other cost elements are held constant. Additionally, equity theory suggests that customers who perceive that an organization's delivery service quality is accompanied by better-quality ingredients, for example, are more likely to attribute greater equity to their relationship with that organization (Kelley & Davis, 1994).

Service firms that value customer closeness may be able to provide higher levels of effective service (Reichheld & Sasser, 1990; Schlesinger & Heskett, 1991; Reichheld, 1996). Customer satisfaction is considered the cumulative evaluation of a customer's total purchase and consumption experience of a good or service over time (Fornell, 1992; Fournier & Mick, 1999). We take this a step farther by adding the construct consumer intentions and bringing in two distinctly different functions: marketing and operations.

Most fast food delivery service companies fail to strike a balance between marketing and operations when they are unable to align business strategies with customers' needs and wants. Our research questions are derived from the literature on marketing and operations in different industries. However, no other study has examined the integration of marketing and operations strategies in the fast food delivery industry in Pakistan, which represents a relatively new market for this sector. When consumers prefer convenience over all other attributes of the product, it becomes necessary to develop a suitable mix of marketing and operations. We study this against the backdrop of the growing number of restaurants in Pakistan that offer fast food delivery services.

3. Research Framework and Hypotheses

We analyze three primary constructs: telephone customer service quality (TSQ), product quality (PQ) and service quality (SQ). All three constructs are related to marketing and operations. The basic premise is that the fast food delivery industry is becoming fiercely competitive and that companies must now integrate both these aspects to achieve business success.

² See Boulding, Kalra and Staelin (1999); Cronin and Taylor (1992); Zeithaml et al. (1996).

3.1. Telephone Customer Service Quality

The first hypothesis takes into account the role of TSQ and its relationship with SQ and PQ in the fast food delivery industry. One of the biggest concerns in telephone ordering is the fundamental shift from the traditional process of physically going to a restaurant to select and purchase food to providing it directly to the consumer at home. From a corporate point of view, this is a greater operational challenge because the company is essentially taking back work that was previously self-sourced by the customer (Yrjola, 2001).

In the absence of a model that integrates marketing and operations in Pakistan's fast food delivery industry, we develop one that draws on existing models of TSQ and online purchasing. From the customer's perspective, ordering food on the telephone is fundamentally different from walking into a restaurant. The firm must process the customer's order while ensuring that it is delivered in time and still meets certain quality standards. We examine the premise that companies must facilitate their customers by (i) providing a simple, understandable helpline service and (ii) making transactions as easy and transparent as possible while delivering the product according to customers' needs and wants within the promised window.

We analyze TSQ based on ease of use, which is an important indicator of customers' adoption of and satisfaction with fast food delivery service (Agarwal & Prasad, 1999). Perceived ease of use includes elements of marketing (customer perceptions) and operations (the company's ability to meet customers' expectations while incurring the lowest possible cost). Several studies demonstrate the link between user satisfaction and TSQ factors (see Gwinner, Gremler & Bitner, 1998; Harris & Goode, 2004). It is fair to assume that customers who are more comfortable accepting and understanding the ordering process will make fewer mistakes when placing an order and will indicate higher levels of satisfaction. Moreover, if customers fully understand what the restaurant has to offer in terms of value for money, they will have a positive perception of its SQ and PQ. Based on this discussion, we test the following hypotheses:

- H1a: The quality of XYZ's³ telephone customer care (TSQ) is positively related to SQ in a fast food delivery service.
- H1b: The quality of XYZ's telephone customer care (TSQ) is positively related to PQ in a fast food delivery service.

³ XYZ represents the three different fast food brands we have surveyed: A, B and C.

3.2. Product Quality

The second hypothesis considers the role of PQ in consumer BI when using a fast food delivery service. The impact of service-encounter constructs such as the physical quality of the good, the quality of service provided and the scope of service is widely researched (see Lovelock, 1983). Crosby (1979) defines quality as “conformance to requirements.” When the consumer’s product requirements meet his/her needs and wants, he/she is deemed satisfied with the quality of the product. Quality itself is composed of the core quality (what is delivered) and relational quality (how it is delivered) with various levels of tangible and intangible elements (McDougall & Levesque, 2000).

The quality of the food is the most important element affecting customer satisfaction and re-patronage intentions in a full-service restaurant (Sulek & Hensley, 2004). If we look at customer satisfaction as a cumulative evaluation of the consumer’s total purchase and consumption experience of a good or service over time (Fornell, 1992; Fournier & Mick, 1999), we can gauge how positive BI is reflected in the firm’s ability to persuade its customers to remain loyal (Zeithaml et al., 1996). More experienced customers will express their BI by making repeat purchases. Based on this, the second hypothesis is:

- H2: The PQ offered by XYZ is positively related to a customer’s BI of using fast food delivery services in the future.

3.3. Service Quality

There is significant support in the literature for the link between SQ and consumer BI (see Boulding et al., 1999; Zeithaml et al., 1996). The concept that customers seek greater SQ is intuitive, particularly if price is held constant. In this case, we define delivery quality as the probability that the customer’s perceived delivery time is shorter than the expected maximum delivery time (Ho & Zheng, 2004). Thus, a higher level of SQ will increase customer satisfaction (Crosby, Evans & Cowles, 1990; Innis & La Londe, 1994; Zeithaml et al., 1996). As above, customer satisfaction is seen as a cumulative evaluation of the total purchase and consumption experience over time (Fornell, 1992; Fournier & Mick, 1999).

Given that firms compete increasingly on the basis of response, delivery or shipping time, we cite the conventional wisdom that a firm’s commitment to providing timely delivery can be a powerful competitive

advantage if the service guarantee represents a breakthrough in service and the firm is able to fulfill this guarantee reliably (Ho & Zheng, 2004). As before, we assume that more experienced customers express their BI by making repeat purchases. Based on the discussion above, the third hypothesis is:

- H3: The SQ offered by XYZ is positively related to a customer's BI of using fast food delivery services in the future.

3.4. Customer Attitudes and Accessibility

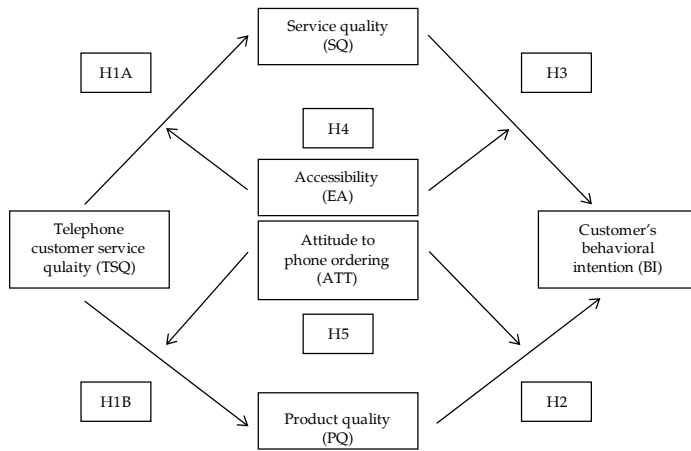
Telephony spans diverse information systems to enable accurate, widespread and low-cost communication (Harris & Goode, 2004). Over the years, it has become an integral means of interaction in retail markets (Bailey, 1998). In line with Agarwal and Prasad (1999), we examine the moderating role of technology using two variables: (i) customer attitudes toward telephone ordering (ATT) and (ii) accessibility or ease of access (EA), which gauges whether the helpline is answered quickly and is available at the user's discretion (Boyer & Olson, 2002). Accordingly, we test the following hypotheses:

- H4: ATT moderates the relationships in H1–H3 as well as a customer's BI of using fast food delivery services.
- H5: EA moderates the relationships in H1–H3 as well as a customer's BI of using fast food delivery services.

3.5. Research Framework

Based on the hypotheses above, Figure 1 presents an overview of our research.

Figure 1: Integration of operations and marketing in the fast food delivery industry



4. Dataset, Methodology and Variables

The sample consists of customers who patronize three different fast food delivery service restaurants in Pakistan. All three restaurants are large multinational food chains denoted by A, B and C (see Appendix). Table 1 shows the basis on which the sample restaurants were selected and the differences in their product categories and marketing and operations strategies. The shortlist comprised multinational firms that provide a food delivery service, while their marketing communications include both operational and marketing content. Two independent experts from the restaurant industry, with more than 15 years’ experience, were asked to narrow down the choice of fast food restaurants to three.

The overall sample consisted of 332 customers from Lahore, but was narrowed down to 200 customers who reported purchasing from one of the sample restaurants at least once a month (see Table 2 for details). All the data was collected between January and March 2013 over the course of two weeks per subsample.

Table 1: Selection of subsamples

Restaurant	Multinational	Product category	Marketing	Operations
A	Yes	Burgers	Convenience	Product quality
B	Yes	Burgers	Quick delivery	Offers available
C	Yes	Pizza	Quick delivery	Oven-hot pizzas

Table 2: Data collection methodology and response rates

	Overall	A	B	C
Customers contacted	332	138	92	102
Response received	200	77	55	68
Response rate (%)	60.2	55.8	59.8	66.7
Data collection method	NA	Intercept survey	Mall intercept survey	Intercept survey

Source: Authors' calculations.

The survey was based on a self-administered questionnaire (see Appendix). At A and C, customers at the checkout point were asked to fill out the questionnaire. At B, we approached customers inside the mall but outside the restaurant itself, which did not allow surveys to be conducted inside. Out of a total of 332 customers approached at the three restaurants (138, 92 and 102 at A, B and C, respectively), 200 completed the questionnaire (77, 55 and 68 at A, B and C, respectively). This implies a response rate of about 56 percent for A, about 60 percent for B and about 67 percent for C. The average response rate was 60.2 percent for the collective sample.

Three categories of variables are used to test the hypotheses: quality measures (PQ, SQ and TSQ), performance measures (BI) and moderating variables (EA and ATT).⁴ All three quality measures were specifically selected to determine the integration between marketing and operations. PQ is an operational concern, TSQ relates to marketing and operations, and SQ is a marketing concern. TSQ is measured by seven items adapted from Agarwal and Prasad (1999) and Boyer and Olson (2002). SQ is measured by ten items proposed by Hartline and Ferrell (1996). PQ is measured by six items adapted from Brucks, Zeithaml and Naylor (2000) and Garvin (1988).

A restaurant that offers high levels of TSQ, PQ and SQ is more likely to encourage customer loyalty, which we measure using BI. Five items are used to determine BI. In line with the literature, a positive BI is reflected in a firm's ability to persuade its customers to remain loyal and promote its goods and services by word of mouth (Zeithaml et al., 1996). Finally, two constructs, ATT and EA, are expected to affect BI either directly or as moderating variables.

⁴ A moderating variable represents a process or factor that alters the impact of the independent variable X on the dependent variable Y (Olsen, 2004).

5. Empirical Results

This section presents the results of the regression analysis for the overall sample as well as for the individual subsamples.

5.1. Correlation Analysis

Table 3 shows the overall correlation between the variables. Both TSQ and PQ have a significant, positive relationship with all the variables ($p < 0.01$). The moderators EA and ATT are positive and significant ($p < 0.01$). BI has a positive, significant relationship with TSQ, PQ, SQ, EA and ATT ($p < 0.01$).

Table 3: Pearson correlation results

Construct	TSQ	PQ	SQ	EA	ATT	BI
TSQ	1.000	0.509***	0.344***	0.590***	0.285***	0.404***
PQ	0.509***	1.000	0.654***	0.418***	0.222***	0.514***
SQ	0.344***	0.654***	1.000	0.257***	0.170**	0.450***
EA	0.590***	0.418***	0.257***	1.000	0.297***	0.386***
ATT	0.285***	0.222***	0.170**	0.297***	1.000	0.330***
BI	0.404***	0.514***	0.450***	0.386***	0.330***	1.000

Note: *** significant at 0.01 level (two-tailed), ** significant at 0.05 level (two-tailed). All correlations are significant at $p < 0.01$. All items are measured on a seven-point Likert scale ranging from “strongly disagree” = 1 to “strongly agree” = 7. Shared variances are included above the diagonal.

Source: Authors’ calculations.

Table 4 breaks down the correlation among the variables by A, B and C. For A, all the variables are highly significant at $p < 0.01$ and $p < 0.05$, apart from SQ and ATT. For B, all the coefficients are positive and highly significant with $p < 0.01$ and $p < 0.05$, apart from the relationships between SQ and ATT and PQ and ATT, which are both insignificant. For C, all the variables are significant and positive, apart from the relationships between SQ and TSQ, which is negative and insignificant, and between ATT and TSQ and SQ, which are insignificant.

Table 4: Correlation among variables in subsamples

Construct	TSQ	PQ	SQ	EA	ATT	BI
A (N = 77)						
TSQ	1.000	0.497**	0.412**	0.501**	0.519**	0.359**
PQ	0.497**	1.000	0.735**	0.350**	0.289*	0.434**
SQ	0.412**	0.735**	1.000	0.402**	0.200	0.391**
EA	0.501**	0.350**	0.402**	1.000	0.585**	0.593**
ATT	0.519**	0.289*	0.200	0.585**	1.000	0.475**
BI	0.359**	0.434**	0.391**	0.593**	0.475**	1.000
B (N = 55)						
TSQ	1.000	0.630**	0.547**	0.717**	0.319*	0.494**
PQ	0.630**	1.000	0.698**	0.564**	0.200	0.650**
SQ	0.547**	0.698**	1.000	0.537**	0.200	0.464**
EA	0.717**	0.564**	0.537**	1.000	0.281*	0.360**
ATT	0.319*	0.200	0.200	0.281*	1.000	0.319*
BI	0.494**	0.650**	0.464**	0.360**	0.319*	1.000
C (N = 68)						
TSQ	1.000	0.359**	-0.100	0.605**	0.100	0.339**
PQ	0.359**	1.000	0.455**	0.253*	0.200	0.479**
SQ	-0.100	0.455**	1.000	-0.284*	0.252*	0.489**
EA	0.605**	0.253*	-0.284*	1.000	0.339**	0.200
ATT	0.100	0.200	0.252*	0.339**	1.000	0.540**
BI	0.339**	0.479**	0.489**	0.200	0.540**	1.000

Note: All correlations in each of the three samples are significant at $p < 0.01$ and $p < 0.05$. All items are measured on a seven-point Likert scale ranging from "strongly disagree" = 1 to "strongly agree" = 7. Shared variances are included above the diagonal.

Source: Authors' calculations.

5.2. Measurement Statistics

Table 5 gives the mean, standard deviation (SD), average variance extracted (AVE), composite reliability (CR), factor loading interval and discriminant validity for the overall sample ($n = 200$). To test for validity and reliability, we calculate the AVE, CR and discriminant validity. The factor loadings for all the variables are above 0.47, due to which they are retained. Items with a loading of less than 0.4 are dropped.

Two types of validity are calculated: convergent and discriminant validity. The first is tested using the AVE. If the AVE is higher than 0.5, convergent validity holds, although a value of 0.4 is also acceptable. Discriminant validity is tested by comparing the AVE with the squared correlation (Fornell & Larcker, 1981). Here, it is higher than the squared

correlation (not shown in the table), which implies that discriminant validity holds for the overall sample. The cut-off point for CR is 0.7, although some studies suggest that a value of 0.6 is also acceptable. Thus, discriminant and convergent validity and CR hold for the overall sample.

Table 5: Measurement statistics for overall sample

Variable	Mean	SD	AVE	CR	Factor loading	Discriminant validity
TSQ	5.07	0.95	0.53	0.78	0.64–0.80	0.709
PQ	5.04	0.99	0.50	0.86	0.47–0.87	0.710
SQ	5.16	0.89	0.50	0.85	0.57–0.85	0.730
BI	5.11	0.92	0.46	0.60	0.51–0.93	0.727

Note: N = 200. Reliability: the CR for ATT is less than 0.70. Convergent validity: the AVE for ATT is less than 0.50.

Source: Authors' calculations.

Table 6 presents a measurement analysis for each subsample. The factor loading for each item is higher than 0.4. The validity and reliability values for A, B and C are all above the cut-off figure suggested by Hair et al. (2006). The AVE is above 0.4, the discriminant validity is higher than the correlation squared (not shown in the table) and the CR is higher than 0.6.

Table 6: Measurement statistics for subsamples

Variable	Mean	SD	AVE	CR	Factor loading	Discriminant validity
A (N = 77)						
TSQ	4.81	1.04	0.433	0.703	0.62–0.90	0.748
PQ	4.65	0.82	0.559	0.882	0.31–0.85	0.604
SQ	5.00	0.91	0.421	0.796	0.42–0.87	0.718
BI	4.94	0.90	0.515	0.909	0.45–0.85	0.658
B (N = 55)						
TSQ	5.29	0.87	0.664	0.881	0.40–0.99	0.692
PQ	5.03	1.28	0.479	0.821	0.41–0.88	0.810
SQ	5.19	0.99	0.656	0.916	0.41–0.89	0.755
BI	5.23	0.92	0.570	0.926	0.44–1.01	0.815
C (N = 68)						
TSQ	5.19	0.83	0.565	0.774	0.41–0.90	0.702
PQ	5.50	0.65	0.493	0.840	0.45–0.95	0.604
SQ	5.32	0.75	0.365	0.678	0.54–0.94	0.755
BI	5.20	0.94	0.571	0.928	0.66–1.01	0.752

Source: Authors' calculations.

5.3. Results for Overall Sample

We analyze the regression results in three steps (Table 7). In the first step, we establish that all four relationships are positive and significant, that is, we accept H1A, H1B, H2 and H3 at $p < 0.01$. TSQ and SQ have a significant relationship ($\beta = 0.204$). TSQ and PQ have a positive, significant relationship ($\beta = 0.493$). SQ and PQ are correlated with BI, with $\beta = 0.332$ and $\beta = 0.393$ at $p < 0.01$.

Table 7: Standardized regression results with BI as criterion variable

Hypothesis	Overall	A	B	C
	N = 200	N = 77	N = 55	N = 68
Step 1: Integrating marketing and operations				
H1: TSQ				
H1A: TSQ and SQ	0.204***	0.170***	0.435***	0.167***
H1B: TSQ and PQ	0.493***	0.442***	0.780***	0.409***
H2: SQ and BI	0.332***	0.427***	0.336	0.637
H3: PQ and BI	0.393***	0.328	0.605***	0.436***
Step 2: Accessibility (moderator)				
H4A: High EA				
TSQ and SQ	0.224***	0.235***	1.337***	0.560***
TSQ and PQ	0.619***	0.365	1.338***	1.428***
SQ and BI	1.090***	0.177	0.545***	-0.899
PQ and BI	0.163	0.453	0.617***	1.894***
H4B: Low EA				
TSQ and SQ	0.115***	0.072	1.108***	-0.028
TSQ and PQ	0.350	0.382***	1.161***	-0.062
SQ and BI	-0.094	0.874***	0.251	2.210***
PQ and BI	0.394***	0.769***	0.598	-1.328
Step 3: Customer attitudes to telephone ordering (moderator)				
H5A: High ATT				
TSQ and SQ	0.067	0.311***	1.270***	0.820
TSQ and PQ	0.493***	0.457***	1.298***	0.338***
SQ and BI	0.029	-0.196	0.524***	-0.083
PQ and BI	0.232	0.455	0.678***	1.801***
H5B: Low ATT				
TSQ and SQ	0.225***	-0.810	1.136***	-0.280
TSQ and PQ	0.307***	0.144	1.184***	-0.620
SQ and BI	0.586***	0.311***	0.277	2.210***
PQ and BI	0.101	0.382***	0.575	-1.328

Source: Authors' calculations.

In the second step, we introduce EA as a moderating variable. The relationships between TSQ and SQ, TSQ and PQ, and SQ and PQ (leading to BI) are moderated by high EA and low EA. In the first case, the relationship between TSQ and SQ is positive and significant ($\beta = 0.224$ at $p < 0.01$). In the second case, the relationship between TSQ and PQ is positive and significant ($\beta = 0.619$ at $p < 0.01$). The relationship between SQ and BI is significant ($\beta = 1.090$ at $p < 0.01$). When EA is low, only two relationships are positive and significant: TSQ and SQ ($\beta = 0.115$ at $p < 0.01$) and PQ and BI ($\beta = 0.394$ at $p < 0.01$).

In the third step, we moderate all four relationships using ATT. When ATT is high, TSQ and PQ have a positive, significant relationship ($\beta = 0.493$ at $p < 0.01$). However, when ATT is low, TSQ has a significant relationship with SQ ($\beta = 0.225$ at $p < 0.01$) and with PQ ($\beta = 0.307$ at $p < 0.01$), while SQ and BI have a significant relationship ($\beta = 0.586$ at $p < 0.01$).

5.4. Results for Subsamples

Empirically testing the data by individual subsample gives us an overview of both categories of fast food restaurant: burgers/sandwiches and pizzas. The different choice of restaurants is supported by Teimoury and Fathi (2013).

5.4.1. Restaurant A

In the first step, we find that the relationships between TSQ and SQ and between TSQ and PQ are positive and significant ($\beta = 0.17$ and 0.442 at $p < 0.01$, respectively). SQ has a significant correlation with BI ($\beta = 0.427$ at $p < 0.01$), but PQ and BI are insignificantly correlated. In the second step, when high EA moderates the relationship between TSQ and SQ, $\beta = 0.235$ at $p < 0.01$. When EA is low, TSQ and SQ have a significant, positive relationship ($\beta = 0.382$ at $p < 0.01$). SQ and PQ are significantly correlated with BI ($\beta = 0.87$ and 0.76 at $p < 0.01$, respectively). In the third step, when ATT is high, TSQ is significantly and positively correlated with PQ and SQ ($\beta = 0.311$ and 0.457 at $p < 0.01$, respectively). At a low ATT, SQ and PQ are significantly correlated with BI ($\beta = 0.311$ and 0.382 at $p < 0.01$, respectively).

5.4.2. Restaurant B

In the first step, we find that the relationships between TSQ and SQ and between TSQ and PQ are positive and significant ($\beta = 0.435$ and 0.780 at $p < 0.01$, respectively). Unlike SQ, PQ has a significant correlation with BI (β

= 0.605 at $p < 0.01$). In the second step, a high EA moderates these relationships as follows: TSQ and SQ ($\beta = 1.337$ at $p < 0.01$), TSQ and PQ ($\beta = 1.338$ at $p < 0.01$), SQ and BI ($\beta = 10.545$ at $p < 0.01$), and PQ and BI ($\beta = 0.617$ at $p < 0.01$). When EA is low, TSQ has significant and positive relationships with PQ and SQ ($\beta = 0.874$ and 0.769 at $p < 0.01$, respectively). In the third step, when ATT is high, two relationships are significant: TSQ and SQ, and TSQ and PQ. With a low ATT, SQ and PQ are both significantly correlated with BI ($\beta = 0.311$ and 0.382 at $p < 0.01$).

5.4.3. Restaurant C

In the first step, we find that the relationships between TSQ and SQ and between TSQ and PQ are positive and significant ($\beta = 0.167$ and 0.409 at $p < 0.01$, respectively). PQ is significantly correlated with BI ($\beta = 0.436$ at $p < 0.01$), while SQ is insignificantly correlated with BI. In the second step, a high EA moderates these relationships as follows: TSQ and SQ ($\beta = 0.560$ at $p < 0.01$), TSQ and PQ ($\beta = 1.428$ at $p < 0.01$), and PQ and BI ($\beta = 1.894$ at $p < 0.01$). When EA is low, only SQ and BI have a significant, positive relationship ($\beta = 2.210$ at $p < 0.01$). In the third step, when ATT is high, TSQ has a significant and positive correlation with PQ ($\beta = 0.338$ at $p < 0.01$) while PQ is significantly correlated with BI ($\beta = 1.801$ at $p < 0.01$). SQ is significantly correlated with BI ($\beta = 2.210$ at $p < 0.01$) when ATT is low.

5.5. Discussion

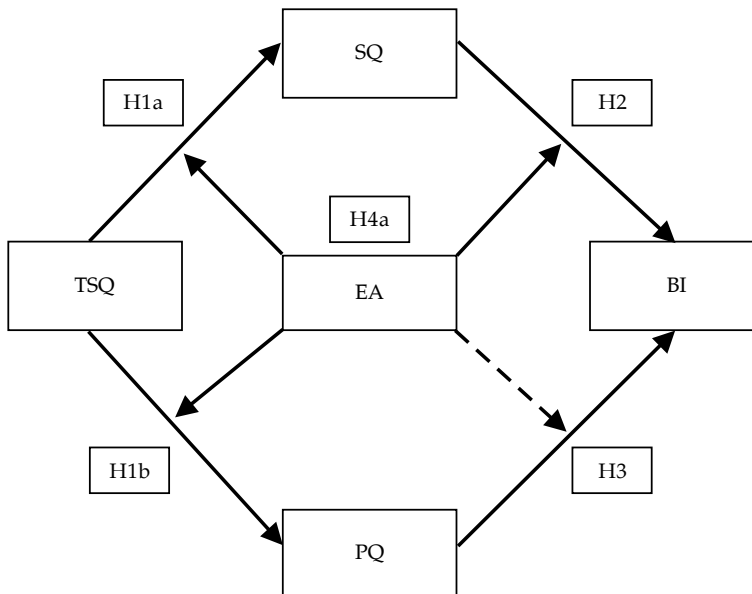
In examining the level of integration between marketing and operations in Pakistan's fast food delivery industry, we use the constructs TSQ, PQ, SQ and BI. Two additional variables, EA and ATT, moderate these relationships. We use descriptive statistics, correlation analysis and a structural equation model to gauge the integration between marketing and operations in the sample firms. A key finding of this study is that TSQ is not directly correlated with BI: instead, it is correlated with PQ and SQ, which are in turn correlated with BI. The results show how consumers perceive various components of fast food delivery. Analyzing the subsamples simultaneously gives an insight into customer perceptions of PQ (operational concern) and TSQ (marketing concern). The standardized regression results (Table 7) represent the relationships between the constructs and can also be used to analyze operational and marketing differences among the subsamples.

In the overall sample, the three quality constructs TSQ, PQ and SQ have a significant impact on customer BI, thus supporting hypotheses H1–

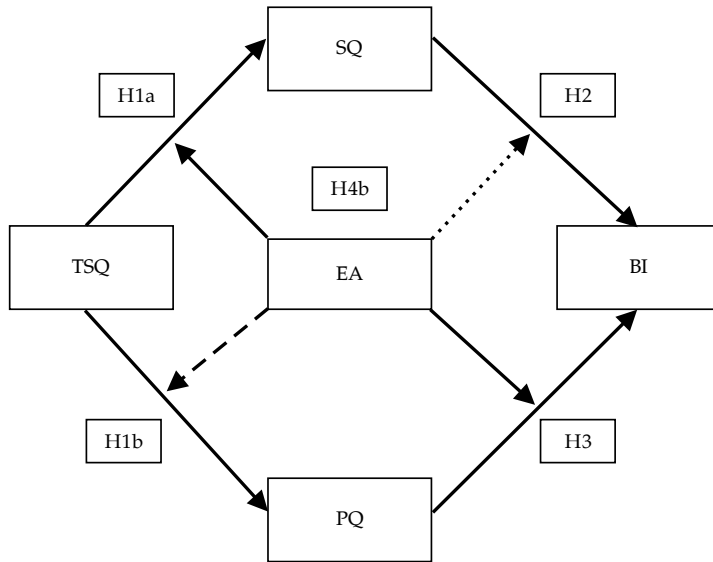
3. TSQ is significantly correlated with PQ and SQ, both of which have a significant effect on BI. The results underscore the importance of these quality constructs. Moreover, the most significant relationship is between TSQ and PQ, which reflects the integration between marketing and operations. Given the significant relationships that exist between TSQ and SQ, TSQ and PQ, SQ and BI, and PQ and BI, we conclude that the model integrating operations and marketing in the fast food delivery industry (Figure 1) holds. In the presence of high EA, the relationships between TSQ and SQ, TSQ and PQ, and SQ and BI are strong, whereas the relationship between PQ and BI is not significant. When EA is low, there is a significant relationship between TSQ and SQ and PQ and BI. Finally, given a low ATT, there is a significant relationship between TSQ and SQ, and between TSQ and PQ.

Figures 2 and 3 illustrate the relationships among the variables (for the overall sample) when moderated by high and low EA, respectively.

Figure 2: High EA as moderator variable

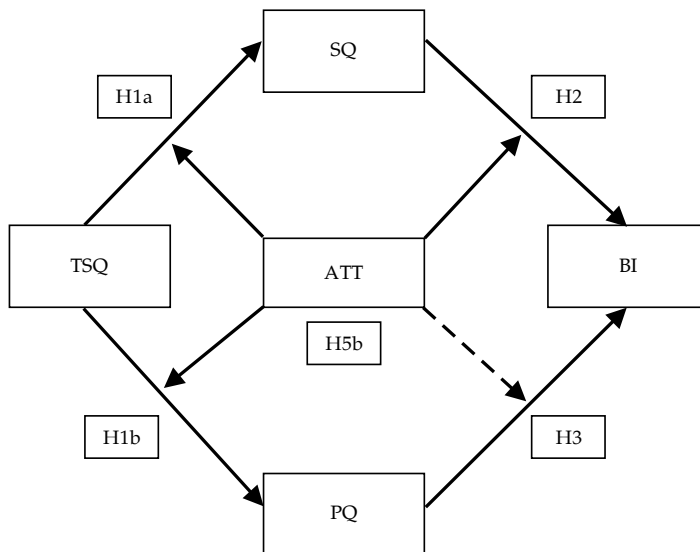


Note: Significant = bold line, insignificant = broken line, negative = dotted line.

Figure 3: Low EA as moderator variable

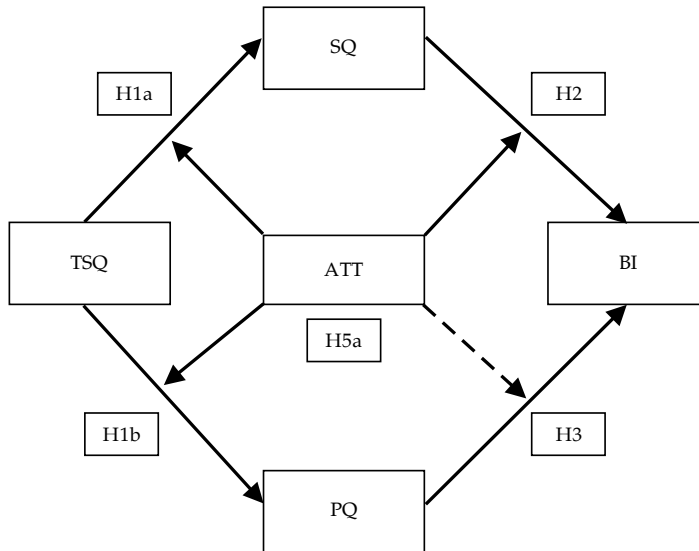
Note: Significant = bold line, insignificant = broken line, negative = dotted line.

Figures 4 and 5 illustrate the relationships among the variables (for the overall sample) when moderated by high and low ATT, respectively.

Figure 4: High ATT as moderator variable

Note: Significant = bold line, insignificant = broken line, negative = dotted line.

Figure 5: Low ATT as moderator variable



Note: Significant = bold line, insignificant = broken line, negative = dotted line.

Given a high level of accessibility, restaurant A must focus on improving the quality of its service and telephone customer care in order to have a positive impact on customer BI. This implies that its customers value the quality of service and telephone customer care over the quality of the product itself.

Restaurant B does not have a significant relationship between PQ and BI; consumers appear to value the quality of telephone customer care as well as service provided. This result is supported by Table 1 where quick delivery and product quality are B’s primary strategies. Given high levels of accessibility, all the constructs have a significant relationship with BI. These findings are in line with B’s marketing strategy. When the ATT variable is low, there is a significant relationship between TSQ and SQ and between TSQ and PQ. This may be due to the restaurant’s promotional delivery offers, which compensate for the low ATT.

Restaurant C has a negative relationship between SQ and BI, which implies that its consumers value the quality of the product over that of the service. This reflects its marketing strategy of delivering fresh pizza to the consumer quickly. When low accessibility moderates the relationship, only SQ seems to have a positive impact on BI. Given higher levels of accessibility, consumers value the quality of the product and telephone customer care over service.

6. Managerial and Research Implications

Our findings provide some useful insights in the context of better marketing and operational strategies. Overall, the data in Table 7 indicates that consumers generally value fast food delivery services. The mean of BI (Table 5), which is the highest of the other values, supports this notion. As companies try to improve the quality of their telephone customer care, products and service in the presence of high accessibility, customers will have a more positive attitude to telephone ordering, reflected in a positive BI.

When fast food restaurants cannot offer high-quality telephone customer care, then they must use product or promotional offers to attract consumers. Fast food consumers may be more willing to compromise on the quality of the food if they are guaranteed a quick and efficient delivery service, which implies that companies must reduce their delivery window. This integration between marketing and operations will help the business become more successful. Thus, when consumers are willing to forego a particular attribute of performance or quality or a moderating variable, they are likely to want something else that gives them value for money. All elements of quality – the product, the service and customer care – need to be synergized rather than focusing on just one or two. The most interesting findings arise from a comparison across the subsamples. Table 8 shows which aspects each restaurant should pay attention to.

Table 8: Study implications for subsamples

Restaurant	Concern	Focus
A	Accessibility, customer attitudes to telephone ordering, product quality	Marketing and operations
B	Service quality	Operations
C	Service quality, accessibility, customer attitudes to telephone ordering	Marketing and operations

This study has several limitations. First, it is context-specific and thus not necessarily replicable for other countries. Second, in-depth interviews with managers engaged in marketing and operations would provide stronger qualitative insights into the managerial side of the integration process between marketing and operations – in this case, we have focused solely on the consumer’s perspective of each organization’s marketing communications and efficiency of delivery. Third, the data used is cross-sectional; it would be interesting to examine longitudinal data, which may not establish the causality between integration and its effectiveness, but would provide a

before/after scenario and help understand changing trends in the fast food delivery industry. Finally, other factors such as price and packaging could also be included in the model: price, for example, acts as a distinguishing factor in the impact on BI.

References

- Agarwal, R., & Prasad, J. (1999). Are individual differences germane to the acceptance of new information technologies? *Decision Sciences*, 30(2), 361–391.
- Bailey, J. P. (1998). *Electronic commerce: Prices and consumer issues for three products: Books, compact discs and software*. Report prepared for the Working Party on the Information Economy. Paris: OECD.
- Boulding, W., Kalra, A., & Staelin, R. (1999). The quality double whammy. *Marketing Science*, 18(4), 463–484.
- Boyer, K. K., & Hult, G. T. (2005). Extending the supply chain: Integrating operations and marketing in the online grocery industry. *Journal of Operations Management*, 23(6), 642–661.
- Boyer, K. K., & Olson, J. R. (2002). Drivers of Internet purchasing success. *Production and Operations Management*, 11(4), 480–498.
- Brucks, M., Zeithaml, V. A., & Naylor, G. (2000). Price and brand name as indicators of quality dimensions for consumer durables. *Journal of the Academy of Marketing Science*, 28(3), 359–374.
- Cronin, J. J., Brady, M. K., & Hult, G. M. (2000). Assessing the effects of quality, value and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing*, 76(2), 193–218.
- Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, 56(3), 55–68.
- Crosby, L. A., Evans, K. R., & Cowles, D. (1990). Relationship quality in services selling: An interpersonal influence perspective. *Journal of Marketing*, 54(3), 68–81.
- Crosby, P. B. (1979). *Quality is free: The art of making quality certain*. New York, NY: McGraw-Hill.
- Erickson, G. M. (2011). A differential game model of the marketing–operations interface. *European Journal of Operational Research*, 211(2), 394–402.

- Feng, Y., D'Amours, S., & Beauregard, R. (2008). The value of sales and operations planning in oriented strand board industry with make-to-order manufacturing system: Cross-functional integration under deterministic demand and spot market recourse. *International Journal of Production Economics*, 115(1), 189–209.
- Fornell, C. (1992). A national customer satisfaction barometer: The Swedish experience. *Journal of Marketing*, 56(1), 6–21.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Fournier, S., & Mick, D. G. (1999). Rediscovering satisfaction. *Journal of Marketing*, 63(4), 5–23.
- Garvin, D. (1988). *Managing quality: The strategic and competitive edge*. New York, NY: Free Press.
- Glanz, K., Basil, M., Maibach, E., Goldberg, J., & Snyder, D. (1998). Why Americans eat what they do: Taste, nutrition, cost, convenience and weight control concerns as influences on food consumption. *Journal of the American Dietetic Association*, 98(10), 1118–1126.
- Gwinner, K. P., Gremler, D. D., & Bitner, M. J. (1998). Relational benefits in services industries: The customer's perspective. *Journal of the Academy of Marketing Science*, 26(2), 101–114.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson.
- Harris, L. C., & Goode, M. M. (2004). The four levels of loyalty and the pivotal role of trust: A study of online service dynamics. *Journal of Retailing*, 80(2), 139–158.
- Hartline, M. D., & Ferrell, O. C. (1996). The management of customer-contact service employees: An empirical investigation. *Journal of Marketing*, 60(4), 52–70.
- Ho, T. H., & Zheng, Y.-S. (2004). Setting customer expectation in service delivery: An integrated marketing–operations perspective. *Management Sciences*, 50(4), 479–488.

- Innis, D. E., & La Londe, B. J. (1994). Customer service: The key to customer satisfaction, customer loyalty and market share. *Journal of Business Logistics*, 15(1), 1–27.
- Ioannidis, S., & Kouikoglou, V. (2008). Revenue management in single-stage CONWIP production systems. *International Journal of Production Research*, 46(22), 6513–6532.
- Kelley, S., & Davis, M. (1994). Antecedents to customer expectations for service recovery. *Journal of the Academy of Marketing Science*, 22(1), 52–61.
- Lambert, D. M., & Stock, J. R. (1993). *Strategic logistics management*. Chicago, IL: Irwin.
- Lee, H. L., & Whang, S. (2001). *E-business and supply chain integration* (White Paper No. 2). Stanford, CA: Stanford Global Supply Chain Management Forum.
- Lovelock, C. H. (1983). Classifying services to gain strategic marketing insight. *Journal of Marketing*, 47(3), 9–20.
- McDougall, G. H., & Levesque, T. (2000). Customer satisfaction with services: Putting perceived value into the equation. *Journal of Services Marketing*, 14(5), 392–410.
- Mentzer, J. T., Gomes, R., & Krapfel, R. E. (1989). Physical distribution service: A fundamental marketing concept? *Journal of the Academy of Marketing Science*, 17(1), 53–62.
- Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, 54(4), 20–35.
- O’Leary-Kelly, S. W., & Flores, B. E. (2002). The integration of manufacturing and marketing/sales decisions: Impact on organizational performance. *Journal of Operations Management*, 20(3), 221–240.
- Oliva, R., & Watson, N. (2011). Cross-functional alignment in supply chain planning: A case study of sales and operations planning. *Journal of Operations Management*, 29(5), 434–448.

- Olsen, W. K. (2004). Moderating variable. In M. S. Lewis-Beck, A. Bryman & T. F. Liao (Eds.), *The SAGE encyclopedia of social science research methods* (p. 29). New York, NY: SAGE.
- Rao, V. R. (2009). *Handbook of pricing research in marketing*. Cheltenham: Edward Elgar.
- Ray, S. (2005). An integrated operations–marketing model for innovative products and services. *International Journal of Production Economics*, 95(3), 327–345.
- Reichheld, F. (1996). Learning from customer defections. *Harvard Business Review*, 74, 56–69.
- Reichheld, F., & Sasser, W. E. (1990). Zero defections: Quality comes to services. *Harvard Business Review*, 68, 105–111.
- Roth, A. V., & Van Der Velde, M. (1991). Operations as marketing: A competitive service strategy. *Journal of Operations Management*, 10(3), 303–328.
- Schlesinger, L., & Heskett, J. (1991). Breaking the cycle of failure in services. *Sloan Management Review*, 32(3), 17–28.
- Schlosser, E. (2012). *Fast-food nation: The dark side of the all-American meal*. Boston, MA: Houghton Mifflin Harcourt.
- Stank, T., Crum, M., & Arango, M. (1999). Benefits of interfirm coordination in food industry supply chains. *Journal of Business Logistics*, 20(2), 21–41.
- Sulek, J. M., & Hensley, R. L. (2004). The relative importance of food, atmosphere and fairness of wait: The case of a full-service restaurant. *Cornell Hospitality Quarterly*, 45(3), 235–247.
- Tang, C. S. (2010). A review of marketing–operations interface models: From coexistence to coordination and collaboration. *International Journal of Production Economics*, 125(1), 22–40.
- Teimoury, E., & Fathi, M. (2013). An integrated operations–marketing perspective for making decisions about order penetration point in multi-product supply chain: A queuing approach. *International Journal of Production Research*, 51(18), 5576–5596.

- Vandaele, N., & Perdu, L. (2010, June). *The operations–finance interface: An example from lot sizing*. Paper presented at the 7th International Conference on Services Systems and Services Management, Tokyo.
- Yrjola, H. (2001). Physical distribution considerations for electronic grocery shopping. *International Journal of Physical Distribution and Logistics Management*, 31(10), 746–761.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2–22.
- Zeithaml, V. A., Berry, L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60(2), 31–46.

Appendix

Survey Questionnaire

Which fast food restaurant do you order from most often?

McDonald's KFC Pizza Hut

Telephone customer service quality (TSQ)

- TSQ1 It is easy for me to remember how to perform tasks using XYZ's toll-free/helpline number.
- TSQ2 It is easy to get XYZ's toll-free/helpline number to do what I want.
- TSQ3 My interaction on XYZ's toll-free/helpline number is clear and understandable.
- TSQ4 Overall, I believe that XYZ's toll-free/helpline number is easy to use.
- TSQ5 XYZ's toll-free/helpline number is easy to navigate.
- TSQ6 XYZ's toll-free/helpline number has a logical sequence of steps for placing an order.
- TSQ7 XYZ's toll-free/helpline number is easy to search for.

Product quality (PQ)

- PQ1 XYZ offers prestigious (high-quality) products.
- PQ2 XYZ has an excellent assortment of products.
- PQ3 XYZ's products are among the best.
- PQ4 XYZ has a sufficient range of product choices (I can get what I want).
- PQ5 XYZ's products are of the same quality as I can buy at a store.
- PQ6 The number of substitutions or out-of-stock items is reasonable.

Service quality (SQ)

- SQ1 XYZ's employees are reliable in providing the service I expect.
- SQ2 XYZ's employees understand my service needs.
- SQ3 XYZ's employees are responsive to my service requests.
- SQ4 XYZ's employees are competent in providing the expected service.
- SQ5 I feel secure in my service encounters with XYZ's employees.

- SQ6 XYZ's employees are courteous when providing me service.
- SQ7 XYZ's employees are accessible enough to answer my questions.
- SQ8 The tangible aspects of XYZ's service (appearance of delivery vans, staff, products, etc.) are excellent.
- SQ9 XYZ has good credibility in providing the service I need.
- SQ10 I can communicate easily with XYZ regarding my service needs.

Accessibility (EA)

- EA1 I can dial the toll-free/helpline number when I want to.
- EA2 The call is answered quickly (I don't have to wait long for new material).

Attitudes to phone ordering (ATT)

- ATT1 I like using phone-ordering services.
- ATT2 Phone-ordering services are fun to use.
- ATT3 Phone-ordering is an attractive ordering method.

Behavioral intention (BI)

- BI1 I would classify myself as a loyal customer of XYZ.
- BI2 I do not expect to switch to another company to get better service in the future.
- BI3 I would continue to shop at XYZ even if I had to pay more.
- BI4 I would complain to other customers if I experienced a problem with XYZ's service.
- BI5 I would complain to XYZ's employees if I experienced a problem with their service.

The Efficiency of Credit Portfolio Management in Pakistan's Banking Sector

Syed M. Waqar Azeem Naqvi,* Tahseen M. Khan, Sayyid Salman Rizavi*****

Abstract

This study highlights the differences in performance of commercial banks operating in Pakistan in the context of credit portfolio management. Specifically, we look at their credit allocation policies and outcomes in the shape of nonperforming loans (NPLs). We categorize a sample of 34 banks into four major groups: public, private, Islamic and foreign banks. The study tests several hypotheses related to the overall efficiency of banks' credit portfolio management over time as well as the drivers of NPLs and priority sectors for lending across these four categories. The findings broadly suggest that public banks tend to suffer most from NPLs, whereas Islamic and foreign banks manage their portfolios more efficiently. NPLs are highest in the priority lending sectors across all types of banks, which underscores the inefficiency of managerial decision-making when managing credit portfolios. Over time, at an aggregate level, all four types of banks have become less efficient, as reflected by the increase in NPLs as a percentage of gross credit and assets.

Keywords: credit portfolio, nonperforming loans, priority sector lending.

JEL classification: G10, G20, G21.

1. Introduction

As financial intermediaries, commercial banks lend to the industry and services sectors; this not only boosts economic activity, but also provides returns to stakeholders. The main hurdle in achieving the desired results is the risk of nonpayment and subsequent default by borrowers. These nonperforming loans (NPLs) create a significant additional cost for banks (Maggi & Guida, 2011) and lower their return on capital. This, in turn, can jeopardize banks severely, given the highly leveraged capital

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structure of the banking industry (Doyran, 2012). NPLs can also create a liquidity crisis that may be manageable initially, but still carries the risk of shattering depositors' confidence and even leading to a bank run or complete insolvency (Arif & Anees, 2012). Nonetheless, NPLs can be managed. The regulatory authority in Pakistan instructs banks to create loan loss reserves, particularly against consumer loans, which have a higher default rate. Banks also learn from experience and thus higher NPL levels are usually associated with higher levels of loan loss reserves (Hasan & Wall, 2004).

Some banks develop models to calculate loan loss provisions on the basis of NPLs (Isa, Choong & Fie, 2013). Despite such protection mechanisms and buffers, it is a bank's managerial structure and efficiency that also plays a pivotal role in dealing with NPLs. There is strong evidence that changes in management structure, primarily through privatization, can improve a bank's performance by significantly reducing its NPLs (Ijaz, Haq, Naseem & Iqbal, 2012).

It is equally important for banks to be aware of the effects of macroeconomic shocks on the sectors and industries to which they have given loans. The effect of the same shock can vary across sectors (Belgrave, Guy & Jackman, 2012), which means adopting a dynamic and robust approach to managing NPLs. A more conservative or aggressive strategy may be warranted, depending on the overall economic situation and need for credit (Balla & McKenna, 2009). Apart from general macroeconomic shocks, banks have to be cautious when managing the effect of shocks in the context of key NPL drivers such as the interest rate. An interest rate hike will always put the borrower in a difficult situation since most of these loans are floating rate loans and any increase in the interest rate could give rise to an NPL (Bofondi & Ropele, 2011).

Another important, if relatively ignored, dimension of analyzing NPLs is the bank's lending behavior and choice of priority sectors for lending. Both these depend heavily on the managerial and governance structure of a bank or cluster of banks operating in a particular economy (Hou & Dickinson, 2007). However, the outcome of a particular choice of priority sectors cannot be generalized: the literature yields mixed results. Some studies suggest that priority sector lending does not benefit the bank's overall profitability (Sharma, 2005). At the same time, major defaulters are often big borrowers from nonpriority sectors (Premnath, Balachandran & James, 2013).

The discussion above establishes the importance of analyzing the performance of Pakistan's banking sector across managerial structures and types in the context of credit portfolio management. We focus on the credit portfolios managed by different types of banks and the infection ratio associated with the level of NPLs. The data for this study was drawn from the annual reports of a sample of 34 banks divided into four categories: public, private, Islamic and foreign banks. We employ both panel as well as pooled data where appropriate.

The study yields mixed results, suggesting that Islamic banks manage their credit portfolios more efficiently: NPLs account for a smaller percentage of their gross credit portfolios than in the other cases. Foreign banks appear to be more efficient if we measure NPLs as a percentage of average total assets over the sample period 2008–12. There is sound evidence that public banks suffer most from NPLs when measured as a percentage of average gross credit portfolios and average total assets. Regardless of the rising trend in the level of NPLs, which indicates deteriorating efficiency, commercial banks' assets and credit portfolios have also increased over time.

The study also looks at the outcome of management decisions to lend to selected priority sectors by analyzing the breakup of NPLs. The results suggest that the category "other sectors" accounts for the largest volume of credit in nominal terms, although the textiles sector is clearly a priority sector in terms of its average share of gross credit portfolios over the sample period. These choices are not necessarily optimal for banks: both sectors are associated with a high infection ratio.

Section 2 provides an overview of the banking sector and describes the dataset. Section 3 outlines our hypotheses and methodology. Section 4 discusses the results and policy implications. Section 5 concludes the study.

2. A Profile of Pakistan's Banking Sector

We have extracted the relevant data from the annual financial statements of 34 commercial banks operating in Pakistan over the five-year period 2008–12. These include public, private, foreign and Islamic banks. The data comprises observations for different variables, including gross credit portfolios, assets, deposits, lending by sector, classification of sectors, credit provisions by sector, profits and other performance and structural variables. In order to manage the data better, we have merged the loans in about 55 business sectors into 11 sectors as follows:

- *Agriculture*: agriculture, forestry and hunting, tobacco and cigarette manufacture, fishing, farming, cattle and dairy, fertilizers, wool.
- *Engineering*: basic metals, engineering and surgical goods, machinery and equipment, transport equipment and automobiles, cables, electronics and electrical appliances, mining and quarrying.
- *Foods*: ghee and edible oils, grains and related foods, beverages, foods and allied products, rice processing and trading, sugar.
- *Services*: education, containers and ports, hotels, rest-houses and clubs, health and social welfare, housing and trusts, media, travel agencies, transport, storage, communications and services, IT and telecommunication, financial institutions and investment companies, services (other than finance, hotels and travel), infrastructure.
- *Construction*: construction (glass and ceramics), RE, renting and bus activities, cement, clay and ceramics.
- *Nonengineering*: footwear and leather garments, shoes, furniture and sports goods, printing, publishing and allied products, paper and paper-board, carpets, chemicals and pharmaceuticals, rubber and plastic, plastic products, synthetic and rayon.
- *Power*: petroleum products, fuel and energy, power, gas, water and sanitary products.
- *Textiles*: spinning, weaving, finishing, made-ups, readymade garments.
- *Trade*: import and export, wholesale and retail trade.
- *Individuals*.
- *Other sectors*.

Figure 1 provides a snapshot of the size of gross credit portfolios and assets in the banking sector. Despite a tremendous increase in the asset base from almost PRs 5.3 trillion to PRs 9.5 trillion, gross credit portfolios increased by merely PRs 0.9 trillion to a total of PRs 4.1 trillion.

Figure 1: Gross credit portfolio and asset base of the banking sector

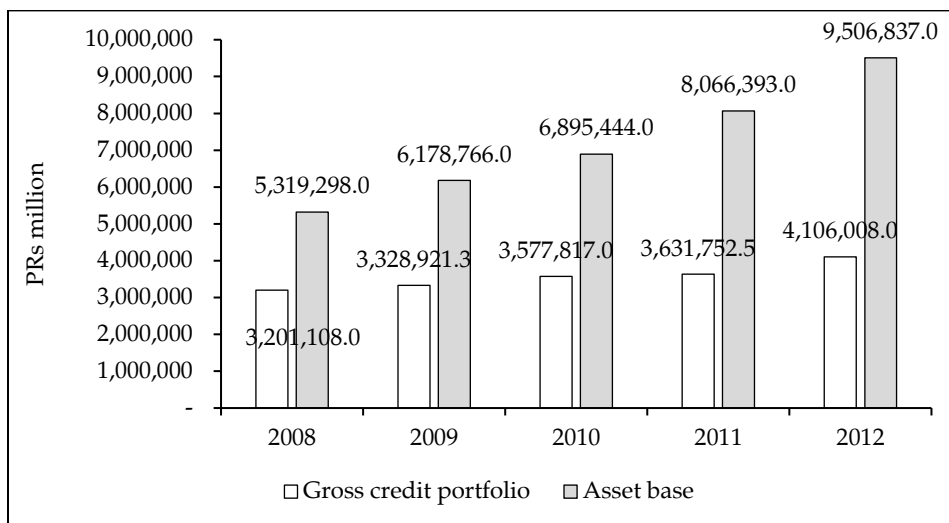
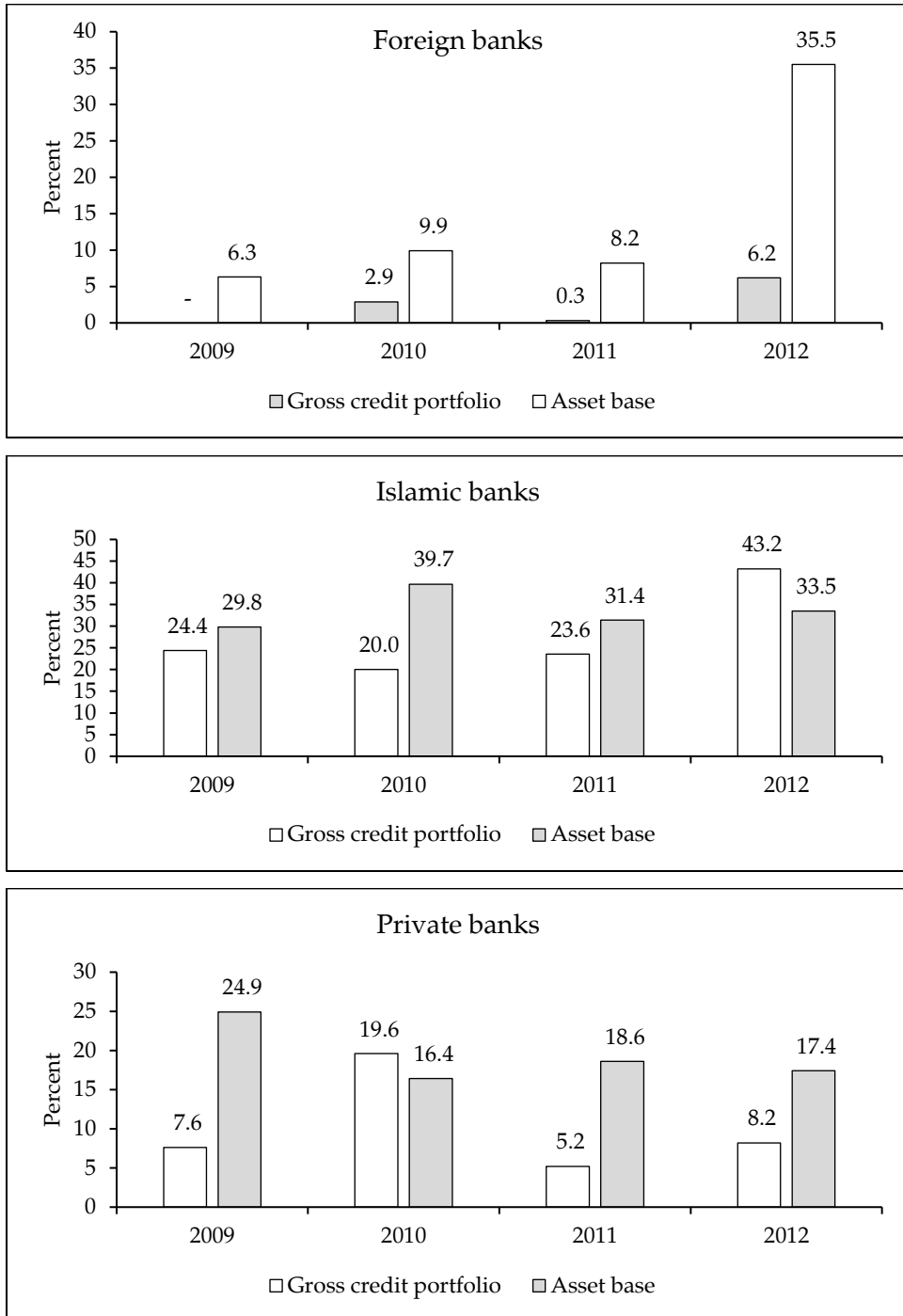


Figure 2 compares growth rates in gross credit portfolios and assets across the four types of banks. Foreign banks experienced relatively little growth in assets, except in 2012, when the asset base grew by 35 percent (led primarily by the growth in assets for Barclays). Islamic banks grew consistently by more than 30 percent while sustaining their primary function (lending), with credit portfolios rising by 27 percent annually. In the last year of the sample period, their lending increased by almost 43 percent. Public banks increased their lending by a massive 45.9 percent despite the small increase in assets. Private banks registered a reasonable asset growth rate, but extended little credit; the percentage change in their credit portfolios remained volatile. This is likely due to the government's deficit financing. The government borrowed heavily from private banks during this period, while the latter earned reasonable returns simply by investing in government papers during 2009–12.

Figure 2: Gross credit portfolio and asset base, by type of bank

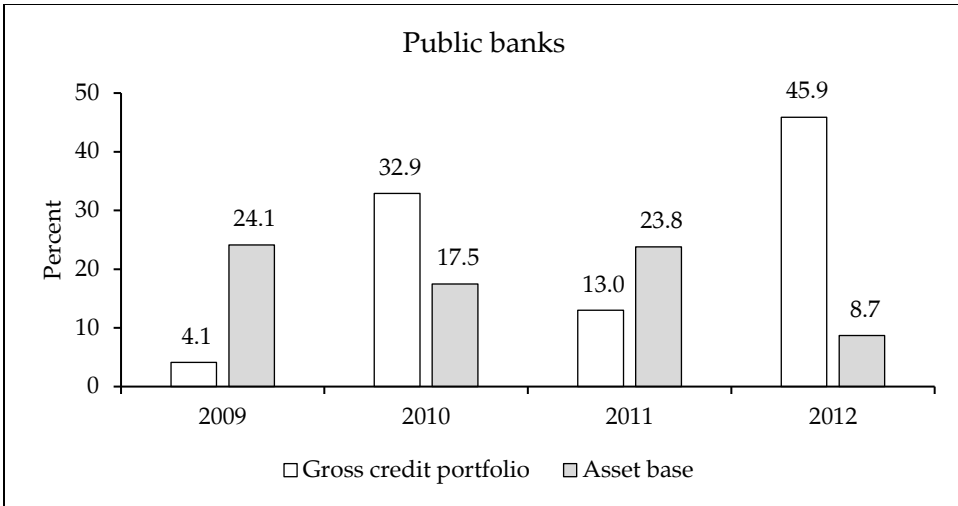


Figure 3 and Table 1 provide a more recent picture of credit portfolios and market shares across different types of banks. In 2012, private banks were the largest providers of credit, extending more than PRs 2.86 trillion or approximately 70 percent of the total credit provided by the banking sector that year.

Figure 3: Gross credit portfolios of banks, 2012

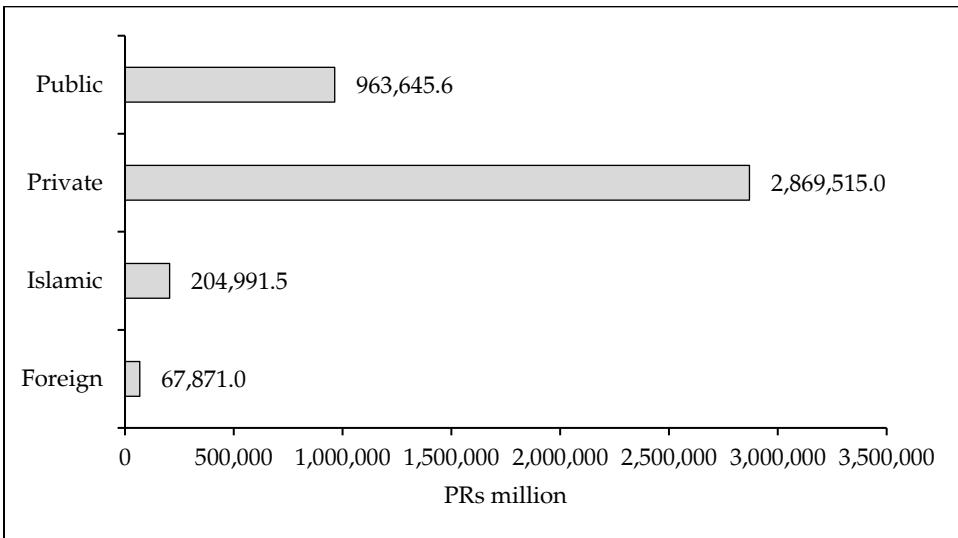


Table 1: Gross credit portfolios of banks, 2012

Type	Total credit PRs million	Market share %	Banks Number	Average credit PRs million
Foreign	67,871	1.7	7	9,695.9
Islamic	204,998	5.0	5	40,999.6
Private	2,869,515	69.9	17	168,795.0
Public	963,624	23.5	5	192,724.8
All	4,106,008	100.0	34	120,764.9

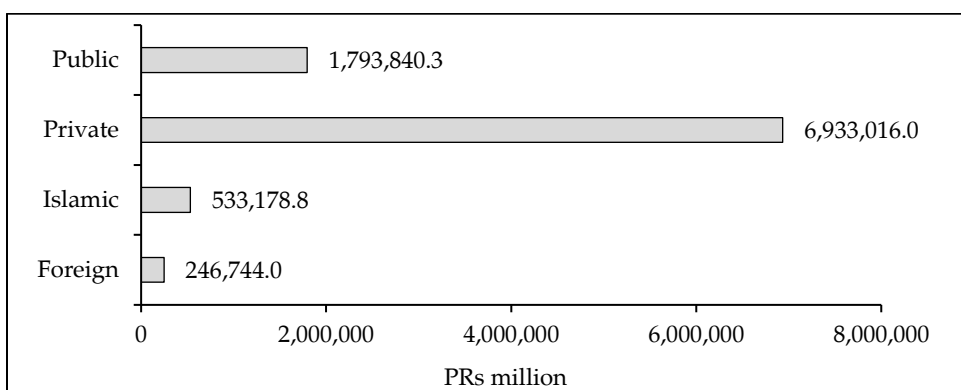
Source: Authors' calculations.

Assets reflect a similar pattern. As Figure 4 and Table 2 show, private banks account for PRs 6.9 trillion out of PRs 9.5 trillion in total assets (almost 73 percent). The average asset base of each bank in this category is almost PRs 400 billion.

Table 2: Asset base of banks, 2012

Type	Total credit PRs million	Market share %	Banks Number	Average credit PRs million
Foreign	246,744	2.6	7	35,249.14
Islamic	533,228	5.6	5	106,645.60
Private	6,933,016	72.9	17	407,824.50
Public	1,793,849	18.9	5	358,769.80
All	9,506,837	100.0	34	279,612.90

Source: Authors' calculations.

Figure 4: Asset base of banks, 2012

Although the data above ranks the types of commercial banks quite clearly in terms of credit portfolios and assets, one should not ignore the

fact that Islamic banks, despite their small share of the banking industry, are growing exponentially. Almost all leading banks now have Islamic banking windows, which this study does not take into account.

3. Hypotheses and Methodology

We develop the following hypotheses:

- H1: X-type banks manage their credit portfolios more efficiently.
- H2: The efficiency of banks has improved over time.
- H3: NPLs are a major hurdle to managing credit portfolios.
- H4: X-type banks are jeopardized most by NPLs.
- H5: Sector Y is the main beneficiary of credit provided by all types of banks.
- H6: Sector Y is the main sector responsible for generating NPLs.
- H7: Sector Y is a priority lending sector for X-type banks.

The data is categorized into a balanced panel of 34 entities and five years of observations, yielding a total of 170 observations. We use the Hausman test to determine whether a random or fixed effects generalized least squares model is best. The test rejects the null hypothesis that differences in coefficients are not systematic, thus supporting the use of fixed effects regression.

Given the emphasis on the different types of banks rather than on individual banks, we apply fixed effects through a least squares dummy variable (LSDV) model instead of within-estimation or between-estimation (available in different software by default). We also examine descriptive statistics for different variables across several categories, including the type of bank and time period.

The basic LSDV model used to test H1 and H4 is:

$$\begin{aligned}
 NPL_{i,t} = & \beta_0 + \beta_1 Assets + \beta_2 Credit\ portfolio + \beta_3 Equity + \beta_4 Deposits \\
 & + \beta_5 Dummy_{Foreign} + \beta_6 Dummy_{Islamic} + \beta_7 Dummy_{Private} \\
 & + \varepsilon_{i,t}
 \end{aligned}$$

The dependent variable is *NPL*, which is measured in nominal terms as a percentage of gross credit portfolios and a percentage of assets. The independent (control) variables are as follows. Assets capture bank

size in terms of balance sheets. Credit portfolios describe the bank's portfolio developed against lending to different business sectors. Equity is the bank's net equity. Deposits measure the money deposited by customers, payable on demand by the bank. Three dummy variables capture the performance differential of different banks: foreign, Islamic and private, where the base is public banks.

The regression model incorporates *NPL* and the control variables in nominal terms, as a percentage of assets and as a percentage of gross credit portfolios to check the robustness of the results. However, the results reported here are from the regression in which *NPL* was measured as a percentage of gross credit portfolios.

4. Results and Policy Implications

This section tests the hypotheses presented above.

4.1. Efficiency by Type of Bank

We start by looking at the infection rate of the sample in 2012. Table 3 shows that the total NPLs for all commercial banks are approximately equal to PRs 387 billion against PRs 4.1 trillion in credit portfolios and PRs 9.5 trillion in assets. Islamic banks emerge as the most efficient, with the lowest ratio of NPLs to both the asset base and credit portfolios. Public banks are the most inefficient, with the highest ratio of NPLs to assets and credit portfolios (5.5 and 10.3 percent, respectively). Private banks follow Islamic banks with the second-lowest ratio of NPLs to credit portfolios.

Table 3: NPLs against asset base and credit portfolio of banks, 2012

	Assets	Credit portfolio	NPLs	NPLs/assets	NPLs/credit portfolio
Type	PRs million	PRs million	PRs million	%	%
Foreign	246,744	67,871	8,327	3.4	12.3
Islamic	533,228	204,998	9,075	1.7	4.4
Private	6,933,016	2,869,515	271,571	3.9	9.5
Public	1,793,849	963,624	98,996	5.5	10.3
Total	9,506,837	4,106,008	387,969	4.1	9.4

Source: Authors' calculations.

To strengthen these findings, we determine the impact of NPLs across types of banks, using the following LSDV model:

$$\begin{aligned} \frac{NPLs}{Credit\ portfolios} = & 0.15068 + 0.00601 \frac{Assets}{Credit\ portfolios} \\ & + 0.00691 \frac{Equity}{Credit\ portfolios} - 0.03849 \frac{Deposits}{Credit\ portfolios} \\ & - 0.04500 Dummy_{Foreign} - 0.05855 Dummy_{Islamic} \\ & - 0.01252 Dummy_{Private} + \varepsilon_{i,t} \end{aligned}$$

To ensure the robustness of the results, we run a regression where NPLs are measured as a percentage of gross credit portfolios and assets. The control variables include assets, equities and deposits, each as a percentage of credit portfolios. The three dummy variables that capture the performance differential of banks are foreign, Islamic and private banks, where public banks are the base. The results reported here are from the regression in which NPLs are measured as a percentage of credit portfolios.

The negative and significant dummies for foreign and Islamic banks in Table 4 confirm the initial inference that these banks are significantly better at managing their credit portfolios than public banks. Although the average ratio of NPLs to credit portfolios is highest for foreign banks, negating the idea that they are better off than public banks, this is primarily because of an abnormal increase from 5.7 to 16.5 percent in the last year of the sample period.

Although it initially seems that private banks are better at managing their credit portfolios than public banks, the insignificant dummy for private banks indicates that this performance differential is not very meaningful. This inference is the same when we use the ratio of NPLs to assets.

Table 4: LSDV model results

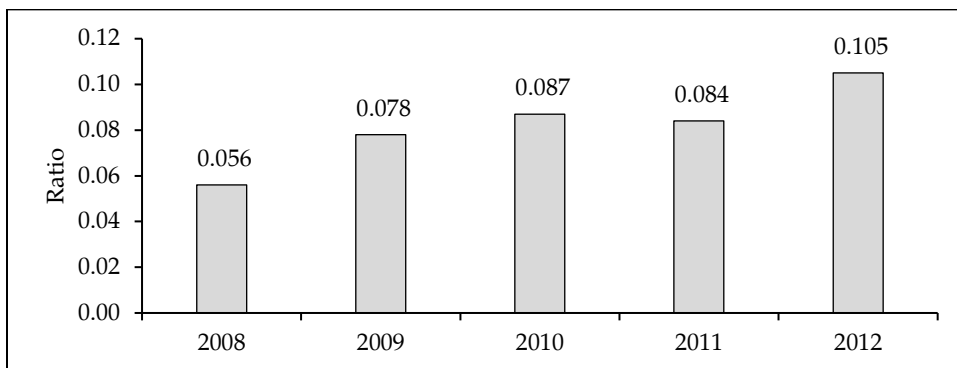
NPLs_GLoans	Coefficient	SE	t	P-value	95% conf. interval	
Assets_Gloans	0.0060090	0.0017054	3.52	0.001	0.0026406	0.0093775
Equity_Gloans	0.0069072	0.0020120	3.43	0.001	0.0029331	0.0108813
Deposits_Gloans	-0.0384888	0.0102423	-3.76	0.000	-0.0587192	-0.0182584
Dum_foreign	-0.0449991	0.0218334	-2.06	0.041	-0.0881242	-0.0018741
Dum_Islamic	-0.0585486	0.0221068	-2.65	0.009	-0.1022137	-0.0148835
Dum_private	-0.0125203	0.0180781	-0.69	0.490	-0.0482280	0.0231874
Con	0.1506768	0.0205055	7.35	0.000	0.1101744	0.1911791

Source: Authors' calculations.

4.2. Improvements in Efficiency Over Time

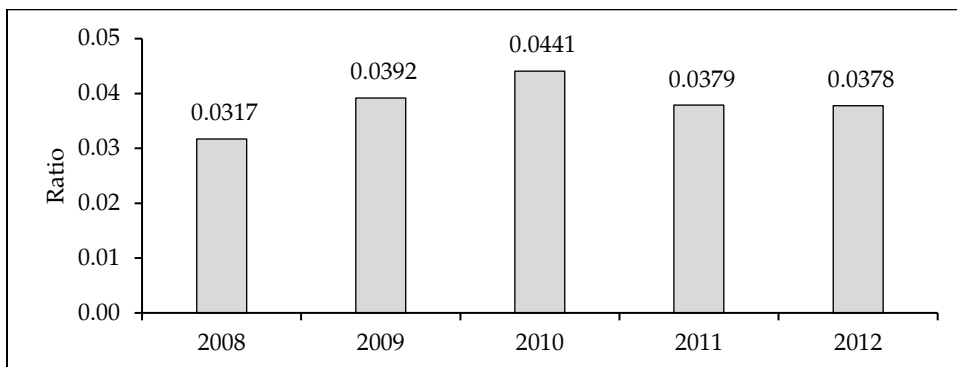
To test H2, we analyze the efficiency of the banking sector over the period 2008–12 by comparing trends in the yearly level of average NPLs as a proportion of gross credit portfolios. There is clearly an increasing trend in NPLs (Figure 5).

Figure 5: Ratio of yearly NPLs to average credit portfolios



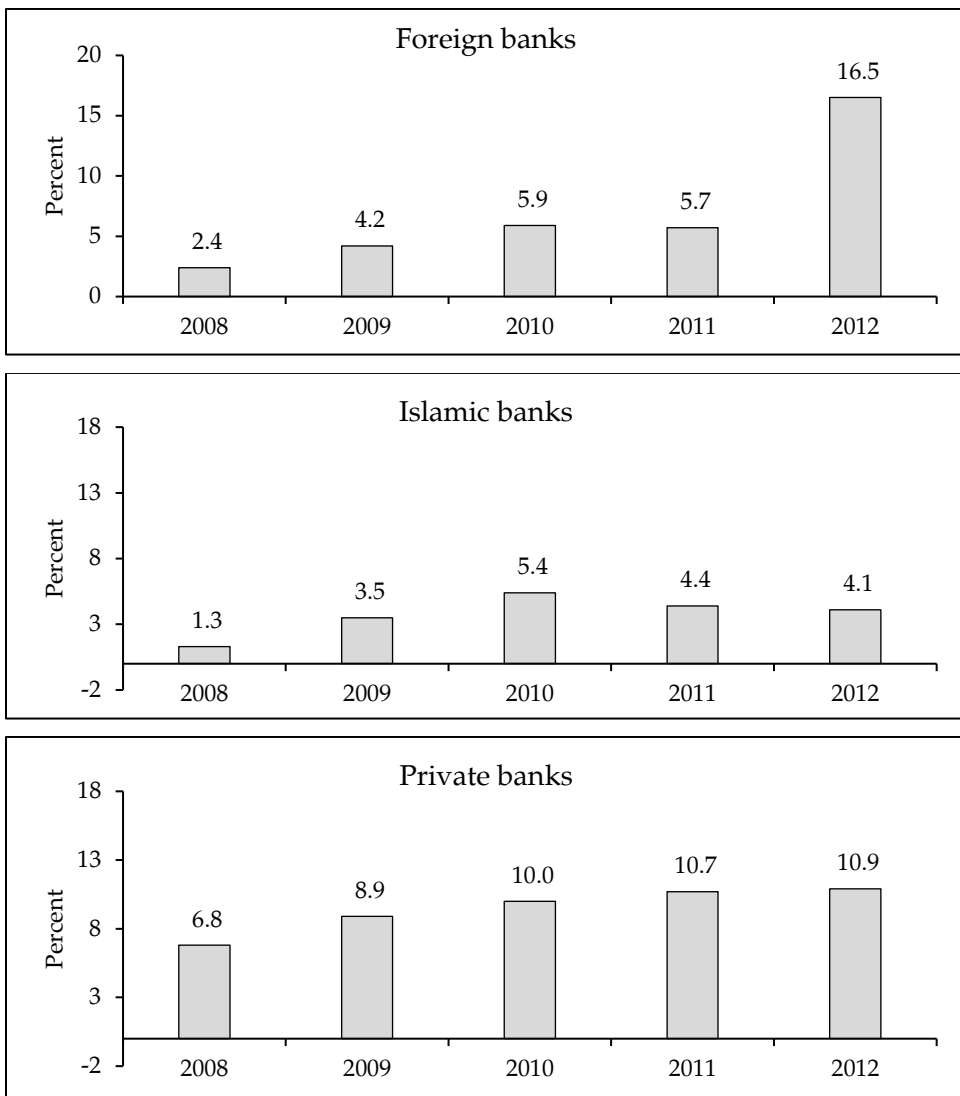
However, this trend is not apparent when we take NPLs as a proportion of the asset base (Figure 6). The contrast in the two ratios shows that, although the asset base of banks increased significantly during the sample period, they did not carry out their primary function of lending to the same degree. Instead, most of the increase in assets was absorbed by high-yield investment portfolios comprising primarily government securities. At the same time, the existing credit portfolio was affected severely by the increasing interest rate, coupled with the fact that most loans are based on a variable interest rate.

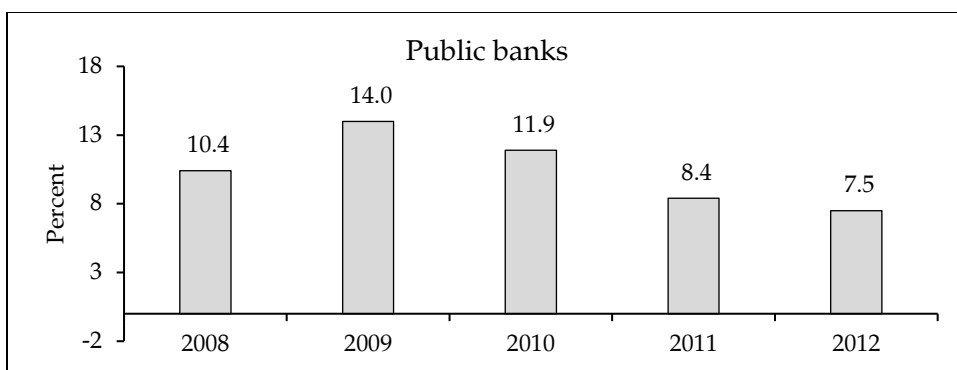
Figure 6: Ratio of yearly NPLs to assets



While the figures above tell us about the evolution of NPLs and the efficiency of the overall industry, they do not illustrate trends in the performance of individual categories of banks. Figure 7 shows that, although public banks carry the largest proportion of NPLs (equivalent to 10.3 percent of their credit portfolio), their performance reflects a stark improvement. This holds true for Islamic banks as well. On the other hand, private banks, which are the largest providers of credit in Pakistan, seem to have been plagued by the gradually increasing ratio of NPLs to credit over this period.

Figure 7: NPLs as a percentage of credit portfolios, by type of bank





This finding is verified when we run a panel regression for each group, adding a time variable to capture the trend in performance. These trend coefficients are reported in Table 5.

Table 5: NPL trend coefficients, by type of bank

Type	NPLs as % of assets			NPLs as % of credit portfolio		
	Coefficient	SE	P-value	Coefficient	SE	P-value
Overall	0.0075159	0.0017261	0.000	0.016579	0.004258	0.0001
Foreign	0.0022732	0.0026333	0.396	0.042270	0.016558	0.0167
Islamic	0.0018046	0.0018163	0.332	0.004980	0.004370	0.2680
Private	0.0104492	0.0024107	0.000	0.020474	0.004307	0.0000
Public	-0.0029990	-0.0043099	0.496	-0.006090	0.008800	0.4981

Source: Authors' calculations.

The results above suggest that the efficiency of banks has not improved over time, both in terms of NPLs as a percentage of average gross credit portfolios and as a percentage of total assets. While public banks appear to have done better, with a negative time dummy, the variable is still insignificant in both regressions.

4.3. NPLs as a Constraint to Managing Credit Portfolios

We regress the credit portfolios variable on the contemporaneous and lagged values of *NPL* and add the contemporaneous and lagged values of deposits and equity as control variables. All variables are taken as a percentage of assets. We run regressions for the overall banking sector as well as for each group. The results reported in Table 6 suggest that neither contemporaneous nor lagged NPLs have any effect on the size of credit portfolios. The estimated coefficients for contemporaneous NPLs are negative for foreign and Islamic banks. The coefficients of lagged NPLs are

negative for foreign and public banks, but none of these is significant, thus rejecting the hypothesis that NPLs are a major constraint to managing credit portfolios.

Table 6: Results of LSDV (lagged effect) model

Group	Credit portfolio as % of assets		
	Coefficient	SE	P-value
Overall			
NPLs (contemporaneous)	1.777881	0.600825	0.0037
NPLs (lagged)	0.207213	0.580173	0.7216
Foreign			
NPLs (contemporaneous)	-1.244647	1.126518	0.2838
NPLs (lagged)	-1.506169	1.649270	0.3732
Islamic			
NPLs (contemporaneous)	-2.299673	3.085268	0.4693
NPLs (lagged)	1.026400	2.964387	0.7347
Private			
NPLs (contemporaneous)	2.338104	0.786017	0.0042
NPLs (lagged)	-0.432728	0.703672	0.5409
Public			
NPLs (contemporaneous)	2.664933	1.446766	0.0953
NPLs (lagged)	-1.535655	1.476033	0.3227

Source: Authors' calculations.

4.4. Banks Jeopardized by NPLs

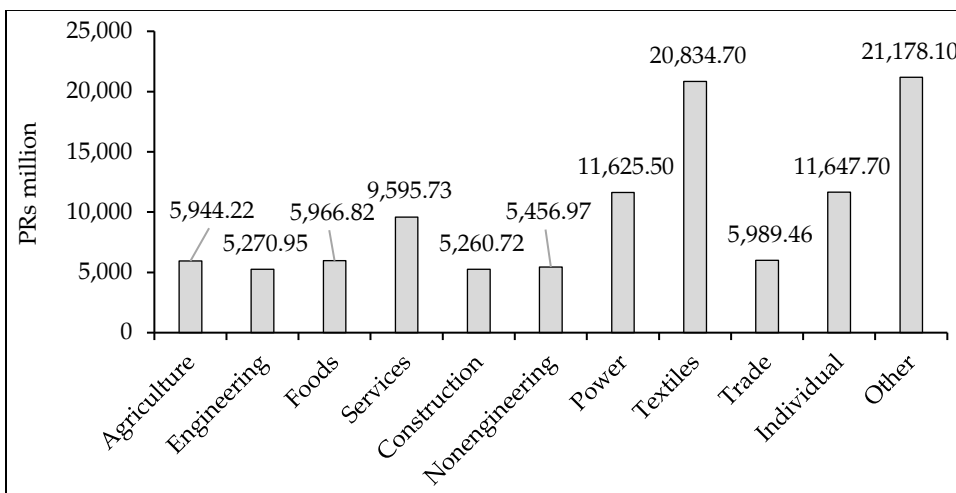
We have already analyzed the different types of banks in terms of average NPLs as a percentage of average credit portfolios and of average total assets (H1). The results of this analysis also suggest that public banks are jeopardized most by NPLs as a percentage of average gross credit portfolios and of average total assets over the sample period (Figure 5 and Table 5).

4.5. Sector Beneficiaries of Bank Credit

In order to identify the main beneficiary of the credit provided by commercial banks, we analyze the average annual lending by sector in nominal rupee terms. Figure 8 shows that the maximum credit (extended by all banks) is channeled to the "other" sector, equivalent to PRs 21,178.10 million in nominal terms and 19.47 percent of the average gross credit

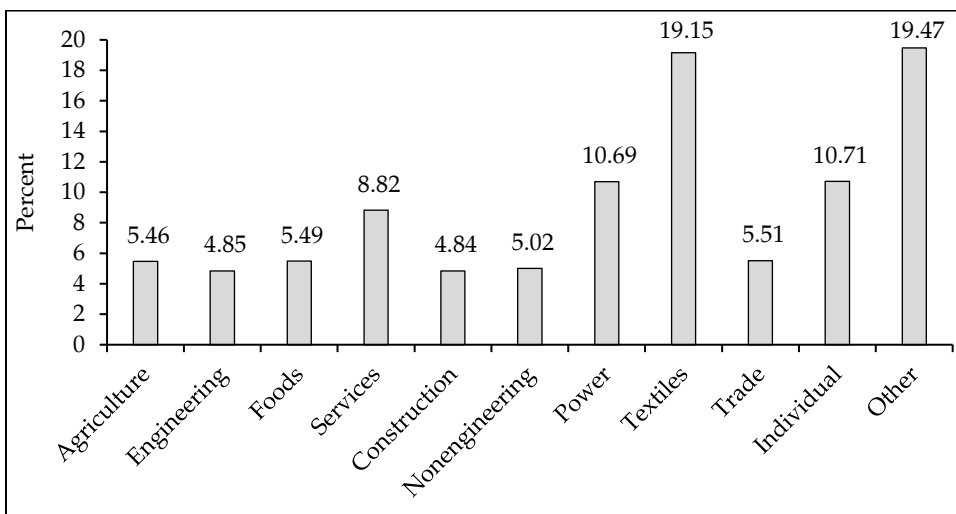
portfolio. The textiles sector follows, with a credit volume of PRs 20,834.7 million in nominal terms, equivalent to 19.15 percent of the average gross credit portfolio (Figure 9). These two sectors were, therefore, commercial banks’ priority lending sectors during the sample period.

Figure 8: Nominal value of lending, by sector, 2008–12



Note: The figure gives mean values.

Figure 9: Lending as a percentage of average credit portfolio, by sector, 2008–12



Note: The figure gives mean values.

4.6. Sectors Responsible for Generating NPLs

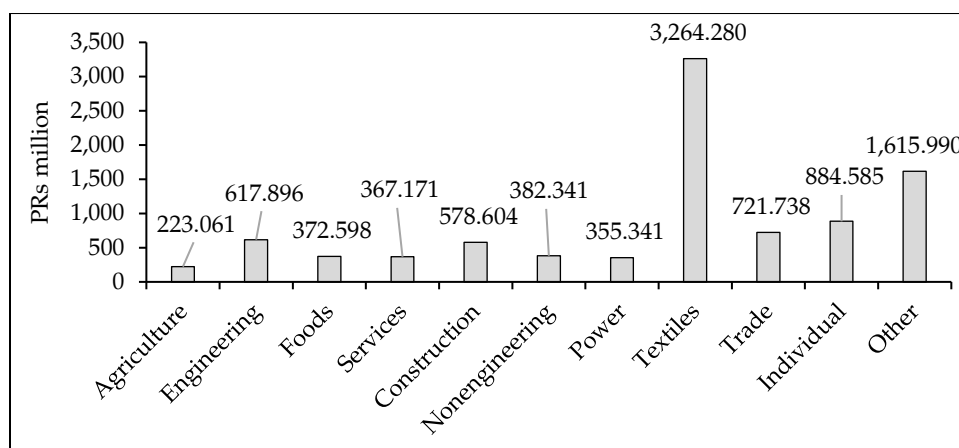
In testing H5, it is important to gauge the outcomes of the choice of priority lending sectors to see if it benefits the sample banks. Table 7 and Figures 10 and 11 show that the textiles sector is responsible for generating the largest volume of NPLs: PRs 3,264.28 million or approximately 34.79 percent of the average total NPL level. The choice of priority sectors is, therefore, not optimal: the textiles sector is associated with the lion's share of credit.

Table 7: Average NPLs, by sector

Sector	Nominal NPLs	NPLs as % of total
Agriculture	223.06	2.38
Engineering	617.90	6.58
Foods	372.60	3.97
Services	367.17	3.91
Construction	578.60	6.17
Nonengineering	382.34	4.07
Power	355.34	3.79
Textiles	3,264.28	34.79
Trade	721.74	7.69
Individuals	884.58	9.43
Other	1,615.99	17.22

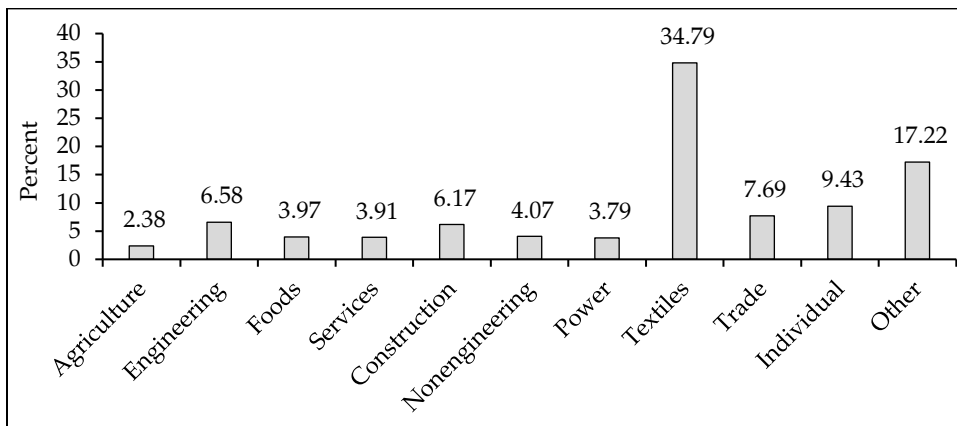
Source: Authors' calculations.

Figure 10: Average NPLs, by sector, 2008–12



Note: The figure gives mean values.

Figure 11: Sectoral NPLs as a percentage of total NPLs, 2008–12

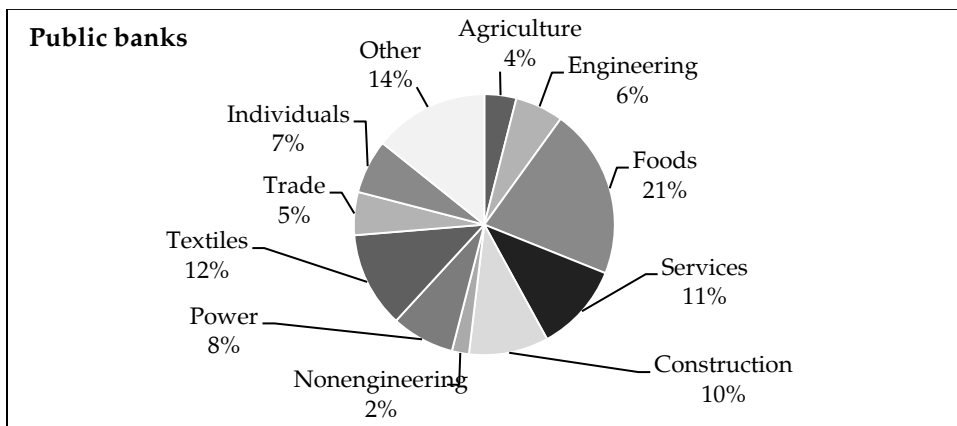


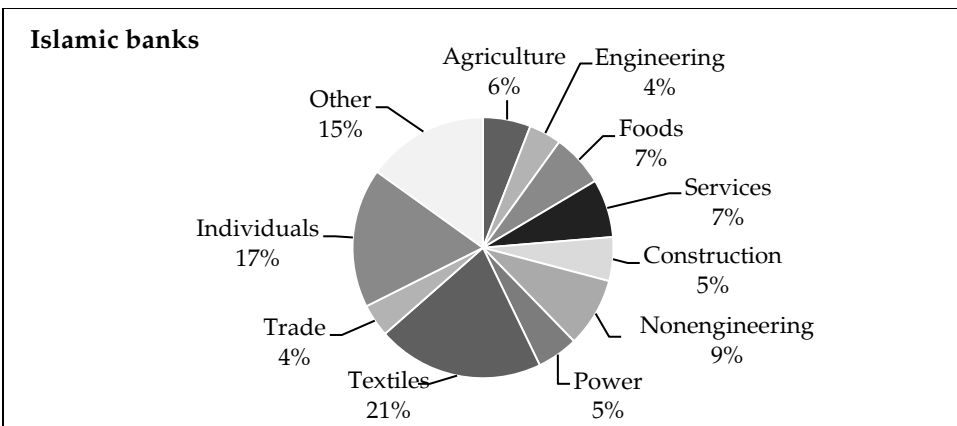
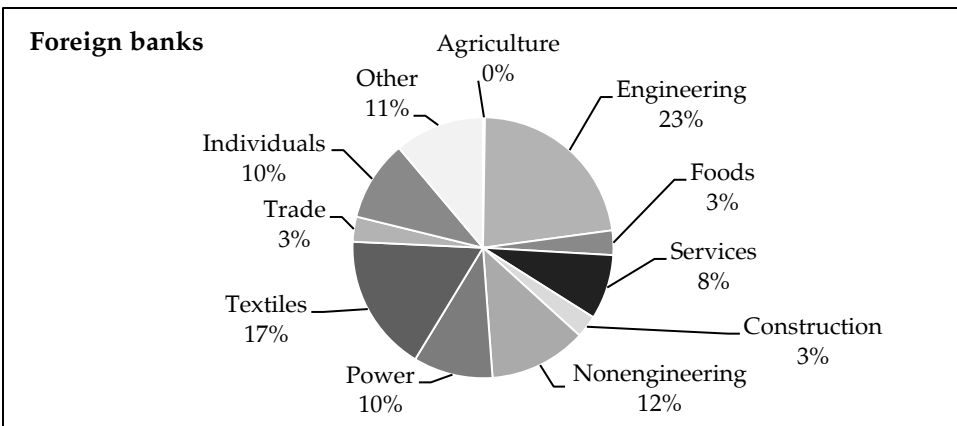
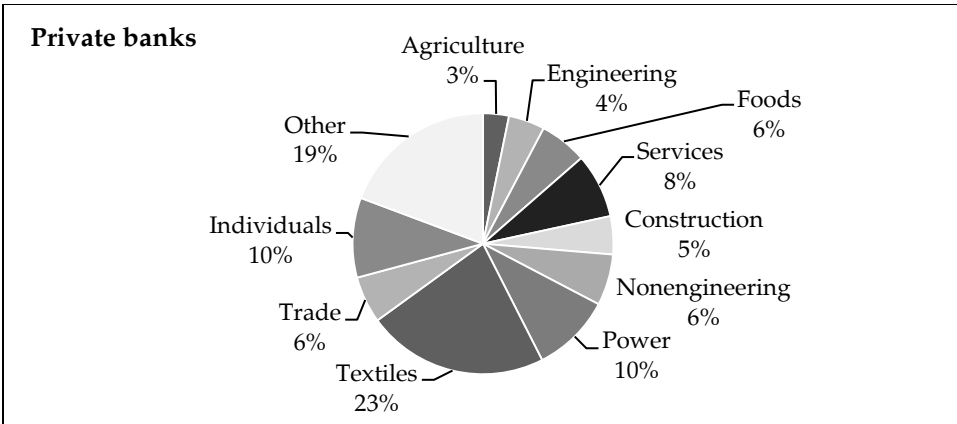
Note: The figure gives mean values.

4.7. Priority Sectors in Bank Lending

To understand individual banks’ lending preferences, we conduct a sectoral analysis of loans across the four types of banks, looking at priority sector lending as a percentage of the total loans to all sectors. The foods sector emerges as a priority lending sector for public banks, accounting for 21 percent of the total credit they issued in the sample period. The textiles sector is a priority lending sector for private banks (23 percent of the total credit issued). Foreign banks appear to favor the engineering sector (23 percent of their total credit portfolio), while the textiles sector is the priority lending sector for Islamic banks (21 percent of total credit allocations). These results are presented in Figure 12.

Figure 12: Lending as a percentage of credit portfolios, by sector, 2008–12





5. Conclusion

This study examines the performance of a sample of 34 commercial banks with reference to their credit portfolio management and NPLs. The analysis is conducted across four types of banks – public, private, foreign

and Islamic banks – operating in Pakistan over the period 2008–12. We look at their lending behavior across 11 sectors: agriculture, engineering, foods, services, construction, nonengineering, power, textiles, trade, individuals and others. The study analyzes the differences in managerial decision-making based on the type of bank, which reflects its management structure, as well as the choice of priority lending sectors. We measure performance in terms of NPLs as a percentage of gross credit portfolios. To ensure robustness, we also use other proxies for NPLs, including the nominal value as a percentage of assets and as a percentage of gross loans.

The results suggest that the “other” sector is a priority lending sector, accounting for 19.47 percent of average gross credit portfolios. This is followed closely by the textiles sector at 19.15 percent of average gross credit portfolios. Overall, commercial banks’ decision to lend to these two sectors does not appear to benefit the banks themselves: both sectors have a high infection rate, where the maximum level of NPLs is 19.74 and 16.40 percent of the average gross credit portfolio. Our analysis across different types of banks suggests that the foods, textiles and engineering sectors are favored by public, private, Islamic and foreign banks.

Finally, the study highlights some interesting results with respect to the credit policies of commercial banks. For example, despite the rise in NPLs in the banking sector, we observe an increasing trend in total assets and gross credit portfolios over the sample period. This implies that commercial banks have continued to support industry even at the cost of their own efficiency.

References

- Arif, A., & Anees, A. N. (2012). Liquidity risk and performance of banking system. *Journal of Financial Regulation and Compliance*, 20(2), 182–195.
- Balla, E., & McKenna, A. (2009). Dynamic provisioning: A countercyclical tool for loan loss reserves. *Federal Reserve Bank of Richmond Economic Quarterly*, 95(4), 383–418.
- Belgrave, A., Guy, K., & Jackman, M. (2012). Industry-specific shocks and nonperforming loans in Barbados. *Review of Finance and Banking*, 4(2), 123–134.
- Bofondi, M., & Ropele, T. (2011). *Macroeconomic determinants of bad loans: Evidence from Italian banks* (Occasional Paper No. 89). Rome: Bank of Italy.
- Doyran, M. A. (2012). Evidence on US savings and loan profitability in times of crisis. *International Journal of Business and Finance Research*, 6(1), 35–51.
- Hasan, I., & Wall, L. D. (2004). Determinants of the loan loss allowance: Some cross-country comparisons. *The Financial Review*, 39(1), 129–152.
- Hou, Y., & Dickinson, D. (2007, August). *The nonperforming loans: Some bank-level evidences*. Paper presented at the Asia-Link Conference on Safety and Efficiency of the Financial System, Manila, Philippines.
- Ijaz, D., Haq, A., Naseem, M. A., & Iqbal, J. (2012). Impact of privatization on nonperforming loans of conventional commercial banks in Pakistan. *Academic Research International*, 3(1), 322–332.
- Isa, M. Y., Choong, Y. V., & Fie, D. Y. (2013). Loan loss provisioning practices. *Journal of Modern Accounting and Auditing*, 9(6), 814–822.
- Maggi, B., & Guida, M. (2011). Modelling nonperforming loans probability in the commercial banking system: Efficiency and effectiveness related to credit risk in Italy. *Empirical Economics*, 41(2), 269–291.

Premnath, D., Balachandran, S., & James, G. (2013). A sector-wise analysis of nonperforming asset in state bank of Travancore. *International Journal of Research in Commerce, IT and Management*, 3(5), 82–87.

Sharma, M. (2005). Problem of NPAs and its impact on strategic banking variables. *Finance India*, 19(3), 953–967.

The Effect of Perceived Organizational Support on Doctors' Organizational Commitment in Pakistan

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Abstract

Maintaining employees' commitment to their workplace is a major challenge faced by many organizations. This study examines the impact of perceived organizational support (POS) on different dimensions of organizational commitment among medical doctors working in healthcare organizations in Pakistan. It also compares the level of POS and organizational commitment between doctors working in the public and private sectors. Based on a 32-item questionnaire administered to a sample of 160 respondents working at two private and two public hospitals, we find a significant, positive relationship between POS and affective as well as normative commitment, and an insignificant relationship between POS and continuance commitment. This suggests that the management should take measures to increase organizational support among employees in order to raise their level of organizational commitment.

Keywords: Perceived organizational support, organizational commitment, healthcare organizations, medical doctors.

JEL classification: M14.

1. Introduction

In today's highly competitive environment and in an age of rapid technological advancements, the survival of an organization is tied to its competitive advantage. This, in turn, depends on the extent to which the organization's employees are committed to its targets. Managerial support for employees increases their organizational commitment (Çelik & Findik, 2012). For employees, their organization is a significant source of tangible (salaries and other perks and benefits) and intangible benefits (respect and social and emotional support). When the management has high regard for its employees' efforts, this has a positive impact on their self-esteem and organizational affiliation. This constructive valuation also signals that good

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performance will be recognized and rewarded, in turn leading to increased commitment on the employee's part. It also improves performance and causes withdrawal behaviors such as absenteeism and turnover to decline. The theory of organizational support thus stems from the expectations that employees have of their organization.

One way of looking at organizational support is from the employee's perspective or perceived organizational support (POS). This refers to how employees develop a belief system about the degree to which the firm values their contribution and cares about their wellbeing (Eisenberger, Huntington, Hutchison & Sowa, 1986). Organizational support theory asserts that employees believe their firm has a generic positive or negative orientation that encompasses recognition of their contribution and concern for their welfare (Eisenberger et al., 2002). POS is also considered an assurance that the firm will help its employees work more effectively and in stressful or challenging situations (George et al., 1993).

The concept of POS draws on social exchange theory, the norm of reciprocity and organizational support theory. The latter holds that POS is driven by employees' capacity to assign "human" traits to a firm such that the actions taken by the firm's agents are perceived to be the acts of the organization itself. This personification of the firm is supported by the fact that the firm is held responsible for the actions of its agents: these actions take the shape of organizational policies, norms and culture, provide continuity and determine role behaviors. Based on this personification, employees perceive how they are treated as a signal of favor or disfavor (Rhoades & Eisenberger, 2002).

Social exchange theorists assert that resources obtained from others are valued more highly if they are given on a discretionary, rather than obligatory, basis. Such voluntary assistance is perceived as a signal that the donor genuinely values the recipient (Cropanzano & Mitchell, 2005). Thus, organizational rewards, incentives, a good working environment, salaries, promotions, job rotation and job enrichment opportunities all contribute more to POS if employees believe that these are voluntary actions rather than the result of external constraints such as union negotiations or government health and safety regulations. When a supervisor serves as the firm's agent, his/her relationship with the employee depends on the extent to which the latter identifies the supervisor with the firm rather than as someone taking an individual action.

According to the norm of reciprocity, when one person helps another, the latter feels obliged to return the favor. From an organizational point of view, POS creates a felt obligation to be concerned about the organization's wellbeing (Muneer, Iqbal, Khan & Long, 2014). This obligation to reciprocate the firm's concern for its employees increases their affective commitment toward the organization and its objectives.

Employees expect their organizations to treat them fairly and to provide supervisory support and human resource practices such as recognition, pay and promotion, job security, autonomy and training, all of which contribute to their POS (Rhoades & Eisenberger, 2002). From the firm's point of view, POS is linked with various desirable outcomes such as greater organizational commitment (Arshadi, 2011), performance-reward expectancies (Eisenberger et al., 2001), employee performance (Witt & Carlson, 2006), organizational identification (Çelik & Findik, 2012), job involvement (Allen, Armstrong, Reid & Riemenschneider, 2008) and decreased turnover intentions (Maertz, Griffeth, Campbell & Allen, 2007).

This study focuses on organizational commitment, which is one of the positive outcomes of POS and is conceptualized as the "strength of a person's identification with and involvement in their organization" (Allen & Meyer, 1990). Allen and Meyer (1990) provide a three-component model of organizational commitment, which classifies commitment as affective, normative or continuance commitment. These are discussed below.

The affective component refers to employees' emotional dedication to, identification with and involvement in the company (Allen & Meyer, 1990). Buchanan (1974) interprets this as a partisan, affective dedication to the objectives and values of the company, to an employee's part in relation to these objectives and values, and to the company per se apart from its exclusively instrumental worth. One of the positive outcomes of affective commitment is that it encourages employees to remain members of the organization (Rhoades, Eisenberger & Armeli, 2001). Normative commitment represents an employee's feelings of obligation and loyalty to the organization. This includes the "totality of internalized normative pressures to act in a manner" that meets the company's objectives and motives, that is, it compels employees to behave in a way only because they consider it the right and just thing to do (Meyer & Allen, 1991). Finally, continuance commitment is the cost that employees associate with leaving the company (Meyer & Allen, 1991). An employee will remain with an organization only because there is no other option or because the cost of leaving the organization is too high.

This study examines the impact of POS on affective, normative and continuance commitment among medical doctors in Lahore. While many studies have explored the relationship between POS and organizational commitment in sectors such as manufacturing, hoteling, education and prison, no study has, to our knowledge, tested this relationship in Pakistan's healthcare sector. Moreover, POS is particularly important for employees working in stressful environments (Viswesvaran, Sanchez & Fisher, 1999) such as hospitals, where the support provided by the management – such as equality and justice, supervisory support, training and organizational rewards – can help doctors cope with challenging work situations. Therefore, we attempt to verify whether the results obtained in previous research (see Aubé, Rousseau & Morin, 2007; Colakoglu, Culha & Atay, 2010) can be replicated in a hospital setting.

Following the arguments presented above, this study aims to:

- Measure the level of POS among doctors
- Gauge the extent of organizational commitment (affective, normative and continuance commitment) among doctors
- Measure the relationship between POS and affective commitment
- Evaluate the relationship between POS and normative commitment
- Assess the relationship between POS and continuance commitment
- Determine whether POS and affective, normative and continuance commitment differ between doctors in public and private sector hospitals.

2. Theoretical Framework

POS has a positive impact on affective commitment (Aubé et al., 2007; Eisenberger et al., 1986; LaMastro, 1999). Rhoades and Eisenberger (2002) carry out a meta-analysis, which shows that POS is positively and strongly correlated with affective commitment. The results show that employees are far more emotionally involved with the organization when they feel valued and supported by their management.

The relationship between POS and affective commitment can be explained in terms of social identity theory. Tyler and Blader (2003) argue that, when an employer values the contribution of an individual to the organization, this induces feelings of recognition and acknowledgement in that individual. Appreciation and respect for their work and status helps

employees meet their social and emotional needs (Fuller, Barnett, Hester & Relyea, 2003). This, in turn, builds their social identity and enhances their sense of belonging to that organization.

Under social exchange theory, behaviors related to POS – such as an increase in salary, promotion, training and development or some form of assistance – are perceived by employees as a sign of the firm's concern for their wellbeing. This raises their trust and boosts the quality of their relationship with the management (Chen, Aryee & Lee, 2005; Cheung, 2000). Consequently, employees develop a more positive attitude toward their organization, increasing their affective commitment (Rhoades et al., 2001). Kim, Leong and Lee (2005) support the view that individuals are likely to develop a strong desire to remain part of an organization when they perceive it as being supportive. Based on these theories and empirical studies, our first hypothesis is as follows:

- H1: POS is positively related to employees' affective commitment.

Several studies support the relationship between POS and normative commitment (see Meyer, Stanley, Herscovitch & Topolnytsky, 2002). This relationship is explained in terms of the norm of reciprocity, that is, when a person or entity helps another such that the beneficiary feels obligated to return the favor (Gouldner, 1960). From an organizational point of view, when employees perceive that the management is supportive, concerned for their wellbeing and seeks to satisfy their needs, they will feel obligated to remain loyal to the firm and let this reflect in their performance (Aubé et al., 2007). Thus, POS is likely to increase the level of normative commitment. Accordingly, our second hypothesis is:

- H2: POS is positively related to employees' normative commitment.

Continuance commitment is different from affective and normative commitment because employees tend to keep working for their organization by default rather than because they necessarily want to (affective commitment) or feel obligated to do so (normative commitment). Rhoades and Eisenberger (2002) find a strong, positive relationship between POS and affective commitment, and a weak, negative relationship between POS and continuance commitment. While the literature provides considerable support for the first relationship, the second is less easily established. Generally, POS appears to lower continuance commitment: several studies show either a negative or insignificant relationship between POS and

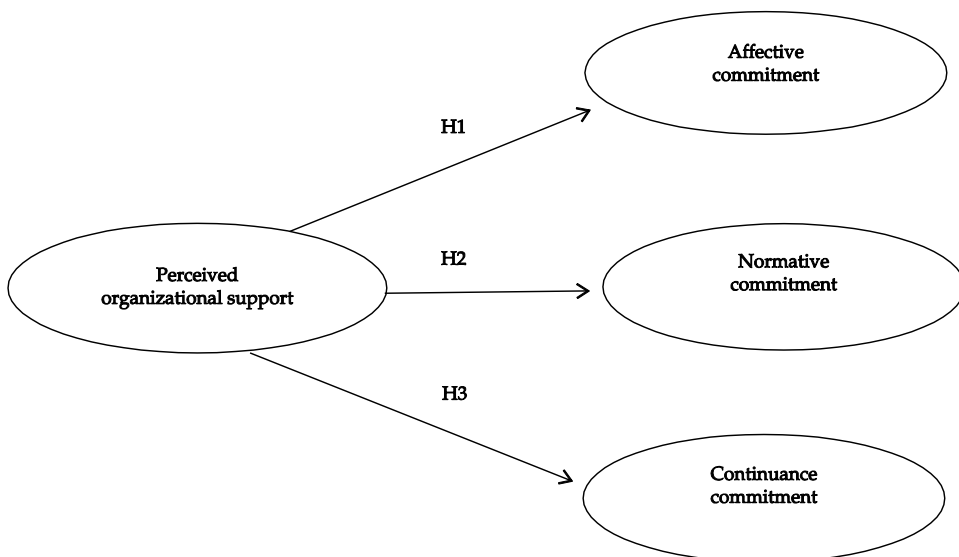
continuance commitment (see Aubé et al., 2007; LaMastro, 1999; Rhoades & Eisenberger, 2002).

In explaining this negative relationship, Rhoades and Eisenberger (2002) argue that POS reduces an employee's sense of "entrapment," which builds up when he/she feels bound to continue working for an organization, given the greater cost of leaving. Moreover, the more supportive the organization, the more likely that an employee's continuance commitment may become affective commitment (Colakoglu et al., 2010). Based on these findings, our third hypothesis is:

- H3: POS is negatively related to employees' continuance commitment.

The three hypotheses above are illustrated in Figure 1.

Figure 1: Schematic diagram



The study's subsequent hypotheses concern organizational commitment in Pakistan's healthcare sector, which comprises public and private sector hospitals. Private hospitals are owned and managed by an individual or a group that is responsible for the institution's finances and administration. Public hospitals are government-owned and run.

There is a considerable difference between private and public sector hospitals in terms of size, location, management systems and service quality. The current public healthcare system in Pakistan has limited resources,

equipment and services compared to the private sector, but it is also far cheaper and, therefore, attracts poorer households. Urban residents are likely to have better access to well-resourced private hospitals than rural residents. There are also differences in management systems: doctors prefer to join the private sector because it offers better salaries and working conditions. With these factors in mind, we propose the following hypotheses:

- H4: There is a significant difference in the affective commitment of doctors working in public and private sector hospitals.
- H5: There is a significant difference in the normative commitment of doctors working in public and private sector hospitals.
- H6: There is a significant difference in the continuance commitment of doctors working in public and private sector hospitals.
- H7: There is a significant difference in the POS of doctors working in public and private sector hospitals.

3. Study Rationale and Contribution to the Literature

This study generates empirical evidence to verify social exchange theory (Blau, 1964), organizational support theory (Eisenberger et al., 1986), social identity theory (Tyler & Blader, 2003) and the norm of reciprocity (Gouldner, 1960) by looking at the employer–employee relationship and investigating the impact of POS on organizational commitment.

It also provides some insight into how organizational support can help manage employees, specifically doctors, more effectively. The findings help establish the relationship between POS and organizational commitment among doctors. Other studies that explore this relationship include Colakoglu et al. (2010), who analyze the impact of POS on dimensions of organizational commitment in Turkey's hotel industry, and Aubé et al. (2007), who examine the relationship between POS and organizational commitment among employees at a Canadian prison. Both studies indicate a strong, positive relationship between POS and affective and normative commitment. Their results imply that, in today's competitive environment, services-based organizations must devise effective policies to retain their most valuable asset, i.e., their employees.

The study is distinct from previous research in four ways:

- To date, no other study has examined the relationship between POS and affective, normative and continuance commitment in the context of Pakistan.
- The little research that has been carried out on this topic in Pakistan looks at organizational commitment as a unidimensional construct, whereas we apply a multidimensional model based on Allen and Meyer (1990).
- We have used an unusual organizational setting – the hospital sector in Lahore. The study's results are expected to help hospital administrations to adopt practices geared toward increasing levels of POS among doctors. These include implementing fair rewards, creating a positive work environment, and providing organizational justice and career development opportunities. This would signal to employees that they were valued, thus raising their organizational commitment.
- Finally, we evaluate how public and private sector hospital doctors differ in terms of their affective, normative and continuance commitment as well as their POS. This has not been observed in Pakistani hospitals and our results reveal significant differences between these variables.

4. Methodology

This is a quantitative study. According to Bryman (2006, p. 35), “quantitative research is an impersonally objective, logical and data-led approach, manipulating variables and controlling natural phenomena, by constructing hypotheses and testing them against the hard facts of reality. This approach is the most appropriate one to use if the purpose of an investigation is to describe the degree of relationship which exists between the variables.” Our unit of analysis is the individual. The study is a cross-sectional/one-shot study with data collected at one point in time in a noncontrived setting (with minimal interference in doctors' normal workflow).

4.1. Measurement of Variables

All the variables included in this study have been measured using previously established instruments. A seven-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7) was employed for all item statements. An eight-item scale developed by Eisenberger et al. (1986) was adapted and condensed to measure POS; the authors report a Cronbach's alpha value of 0.97 for this scale. The three dimensions of organizational

commitment – affective, normative and continuance – were assessed using Allen and Meyer's (1990) scale, which includes 24 items. Their study yields a Cronbach's alpha of 0.87 for the affective commitment (AC) scale, 0.79 for the normative commitment (NC) scale and 0.75 for the continuance commitment (CC) scale.

4.2. Survey Method and Data Collection

The initial questionnaire included 32 items measuring POS and organizational commitment. In order to establish its usability and comprehensibility, the survey was administered to 15 doctors. All 15 completed the survey. The internal consistency values were 0.904 for POS, 0.759 for affective commitment, 0.647 for normative commitment and 0.841 for continuance commitment. This showed that the questionnaire was fairly reliable.

We employed purposive sampling, dividing eight selected hospitals into either public or private hospitals and then collecting primary data. Over the course of almost a month, we distributed 180 questionnaires among the doctors at these hospitals, of which 172 were returned (a response rate of 95.5 percent). Only 160 of these had been completed correctly and were thus usable.

5. Data Analysis

The questionnaire's reliability was confirmed using alpha coefficients to demonstrate internal consistency. Table 1 gives the Cronbach's alpha values for all four measures, all of which exceed 0.6 and are, therefore, deemed acceptable (see Cavana, Delahaye & Sekaran, 2001).

Table 1: Reliability of individual measures

Scale	Cronbach's alpha
POS	0.867
AC	0.807
NC	0.604
CC	0.611

Source: Authors' calculations.

5.1. Sample Characteristics

Out of 160 respondents, 52.5 percent were male and 47.5 percent were female. Most respondents (39.4 percent) were aged between 26 and 30, 26.9 percent were aged between 20 and 25 years, 18.15 percent were 31–35 years old, 9.4 percent were 36–40 years old, 4.4 percent were older than 45 and 1.9 percent were between 41 and 45. About 48.8 percent were single and 51.2 percent were married. Most respondents (48.1 percent) were medical officers, 23.1 percent were postgraduate residents, 16.2 percent were house officers, 2.5 percent were demonstrators, 1.2 percent were surgeons, 2.5 percent were consultants and 3.1 percent each were registrars and senior registrars. In terms of work experience at their current hospital, 69.9 percent of respondents had worked there for one to five years, 21.9 percent for six to ten years, 6.9 percent for 11–15 years, 1.2 percent for 16–20 years and 0.6 percent for 21–25 years. Finally, 63.8 percent had a permanent job while 36.2 percent were contractually employed.

Table 2 provides the mean and standard deviation scores of the independent and dependent variables used in this study.

Table 2: Descriptive statistics

Scale	Min	Max	Mean	SD	Skewness		Kurtosis	
						SE		SE
POS	1.00	7.00	4.9063	1.19007	-0.643	0.192	0.318	0.381
AC	1.62	7.00	5.0383	1.03068	-0.616	0.192	0.193	0.381
NC	2.12	6.88	4.8953	0.83375	-0.438	0.192	0.374	0.381
CC	2.00	7.00	4.1359	0.95582	0.389	0.192	0.178	0.381

Source: Authors' calculations.

5.2. Correlation Analysis

In order to find the strength and direction of the relationship between the independent and dependent variables, we conduct a Pearson-product moment correlation analysis. Tabachnick and Fidell (2006) suggest that, if $r = 0.1$ to 0.29 , this indicates a weak relationship; if $r = 0.3$ to 0.49 , this indicates a moderate relationship; and if $r = 0.5$ to 1 , this indicates a strong relationship. Table 3 shows a strong, positive correlation between POS and AC: $r = 0.563$, $n = 160$ and $p < 0.001$, with high levels of POS associated with high levels of affective commitment. Therefore, we reject the null hypothesis

of a negative association and accept the hypothesis that POS is positively related to employees' affective commitment.

There is a moderate, positive correlation between POS and NC: $r = 0.426$, $n = 160$ and $p < 0.001$, with high levels of POS associated with high levels of normative commitment. Therefore, we reject the null hypothesis of a negative association and accept the hypothesis that POS is positively related to employees' normative commitment.

There is a very weak, positive correlation between POS and CC: $r = 0.048$ and $n = 160$ and it is insignificant. Our third hypothesis was that POS is negatively related to employees' continuance commitment, but the results indicate a very weak, insignificant relationship. Therefore, we reject this hypothesis and accept the null hypothesis of no association between POS and continuance commitment.

Table 3: Correlation analysis

Scale	1	2	3	4
POS	1.000	0.563**	0.426**	0.048
AC		1.000	0.417**	-0.111
NC			1.000	0.034
CC				1.000

Note: ** = correlation is significant at the 0.01 level (two-tailed).

Source: Authors' calculations.

5.3. Regression Analysis

A hierarchical multiple regression is performed to evaluate the ability of the independent measure (POS) to predict levels of commitment (affective commitment), after controlling for the influence of the organization, job position, gender, age, marital status, work experience in the current organization and job type. Initial analyses were conducted to ensure that the assumptions of normality, linearity, multicollinearity and homoskedasticity were not violated. The control variables were entered in the first step, which explained 12.8 percent of the variance in affective commitment. The POS variable was entered in the second step and the total variance explained by the model as a whole was 37.3 percent ($p < 0.05$).

Table 4 shows that POS explains an additional 24.5 percent of the variance in affective commitment, after controlling for organization, job position, gender, age, marital status, work experience in the current

organization and job type. The change in R-squared is 0.245, the F change is 59.038 and $p < 0.001$. In the final model, POS is statistically significant ($B = 0.453, t = 7.09, p < 0.05$).

Table 4: Regression analysis between POS and AC

Model	R	R-squared	Change statistics		
			R-squared change	F change	Sig. F change
1	0.358	0.128	0.128	3.190	0.004
2	0.611	0.373	0.245	59.038	0.000

Source: Authors' calculations.

Next, we evaluate the association between POS and normative commitment. Table 5 shows that the control variables explain 25.5 percent of the variance in normative commitment. After entering POS, the total variance explained by the model as a whole is 37 percent ($p < 0.001$). POS explains an additional 11.5 percent of the variance in normative commitment. The change in R-squared is 0.115, the F change is 27.519 and $p < 0.05$. In the final model, POS is statistically significant ($B = 0.253, t = 5.39, p < 0.05$), thus explaining the significant variation in normative commitment. We can conclude that POS positively affects normative commitment.

Table 5: Regression analysis between POS and NC

Model	R	R-squared	Change statistics		
			R-squared change	F change	Sig. F change
1	0.505	0.255	0.255	7.422	0.000
2	0.608	0.370	0.115	27.519	0.000

Source: Authors' calculations.

A regression analysis for POS and continuance commitment is not carried out because we have already shown that the two variables have an insignificant relationship in the correlation analysis (see Table 3)

In order to compare the organizational support and commitment levels of doctors in public and private organizations, we conduct an independent sample t-test (Table 6). The t-value for affective commitment is significant ($p = 0.034$). This is less than 0.05, which implies that there is a statistically significant difference in the mean affective commitment scores

for public ($M = 1.74, SD = 0.273$) and private sector doctors ($M = 1.64, SD = 0.313; t(160) = 2.138, p = 0.034$, two-tailed). For affective commitment, the effect size (calculated using the formula $t^2/t^2 + (N1 + N2 - 2)$) is 0.028. This is considered small according to the guidelines given by Cohen (2013).

Table 6: Results of t-test for comparison between public and private sector doctors

Scale	T	df	Sig. (2-tailed)
AC	2.138	158	0.034
NC	0.078	158	0.938
CC	2.589	158	0.011
POS	3.544	158	0.001

Source: Authors' calculations.

Next, the difference in normative commitment is evaluated. The significance value is 0.938 (> 0.05), which means that there is no statistically significant difference between the mean normative commitment scores for public ($M = 1.71, SD = 0.195$) and private sector doctors ($M = 1.70, SD = 0.282; t(160) = 0.078, p = 0.0938$, two-tailed).

In evaluating the difference in continuance commitment, the results demonstrate that the significant value is 0.011 (< 0.05), implying that there is a statistically significant difference in the mean continuance commitment scores for public ($M = 4.32, SD = 0.946$) and private sector doctors ($M = 3.94, SD = 0.932; t(160) = 2.589, p = 0.01$, two-tailed). The effect size is 0.04, indicating a small statistically significant difference.

Finally, we find a statistically significant difference between the mean POS scores for public ($M = 1.81, SD = 0.314$) and private sector doctors ($M = 1.63, SD = 0.33; t(160) = 3.544, p = 0.001$, two-tailed). The magnitude of the difference in the means (the effect size) is moderate (eta squared = 0.073).

6. Discussion

According to the first hypothesis, POS has a positive impact on employees' affective commitment. The results of the correlation analysis indicate a significant, positive relationship between these variables. Specifically, the regression analysis shows that POS accounts for a considerable part of the variance in affective commitment. These findings are consistent with previous studies (see Colakoglu et al., 2010; Fuller et al., 2003; LaMastro, 1999; Rhoades et al., 2001). Our study, therefore, supports

hypothesis H1 – when employees perceive that their organization is supportive and concerned about their wellbeing, they are more likely to develop a sense of belonging and pride. Ahmad and Abu Bakar (2003) report that, when supervisors provide greater support to human resource activities, there is a significant increase in organizational commitment.

The second hypothesis states that POS has a positive effect on employees' normative commitment. The results of the correlation analysis indicate a significant relationship between these variables. POS accounts for a significant positive variance in normative commitment as seen in the regression analysis. Previous studies have also found a similar relationship (see Aubé et al., 2007; Colakoglu et al., 2010; Meyer et al., 2002). Thus, our evidence supports hypothesis H2 – organizations can influence normative commitment in a positive sense by taking into account employees' goals and values, and by involving them in the firm's decision making.

The third hypothesis holds that POS has a negative effect on employees' continuance commitment. The results of the correlation analysis indicate a slightly positive but nonsignificant relationship between these variables, implying that the study does not support this hypothesis. Again, similar results have been obtained by previous studies (see Aubé et al., 2007; Eisenberger et al., 2002). One explanation for this result is that doctors in Lahore's hospital sector perceive few other employment options. Thus, even if they consider their organization to be supportive, they will still have high levels of continuance commitment. Moreover, even if they do have alternative options, they may feel compelled to remain with their organization in view of Pakistan's poor economic situation.

The remaining four hypotheses state that there is a difference in the affective, normative and continuance commitment and POS of doctors working in public and private sector hospitals. Barring H5 on normative commitment, we find evidence to support the other hypotheses. This implies that public and private hospitals tend to adopt different policies with respect to their employees' wellbeing. A moderate effect size occurs in the case of continuance commitment, where the mean difference for the public sector is higher than that for the private sector. This could mean that doctors in the public sector are more afraid of losing their jobs and also have fewer job alternatives.

The largest mean difference is between the POS of public and private doctors – the latter have higher levels of POS. This shows that private sector hospitals probably show greater concern for their employees' wellbeing,

while doctors in the public sector are disillusioned by how their organizations treat them.

7. Conclusion

Some study limitations should be kept in mind when considering further avenues for research. Given the small sample used in this study, increasing the sample size and extending it geographically would yield more generalizable, more accurate findings. Similar research could also be carried out in other sectors of Pakistan to enhance our understanding of the relationship between these variables among employees.

This study uses a cross-sectional design. Given time and resource restrictions, we could not cover all possible aspects of this topic. Future studies could use a causal study design and longitudinal data to draw cause-and-effect relationships between POS and organizational commitment. They could also explore sub-constructs of POS to gain a more refined understanding of which aspects of POS affect organizational commitment and to what degree.

Our findings yield a number of practical and policy implications. Hospital management should seek ways to increase the organizational commitment of their doctors. This could include efforts to create organizational equality and justice, provide better supervisory support, build a more positive work environment, and offer organizational rewards and desired occupational grounds to their doctors.

Providing organizational equality and justice means ensuring that resources are allocated fairly among staff, and that organizational procedures are applied impartially. Supervisory support implies giving employees a chance to participate in decision making, taking their opinions and goals into account, and helping them overcome problems at work. Managers should also make time for their employees at a social level to minimize emotional fatigue on the job and boost their commitment and performance.

Organizations should review their management procedures in order to create a positive work environment that helps them retain employees. Administrations may have to transform their structure from authoritative to participative, accounting for their employees' goals, values and wellbeing, and seeing their input as a valuable contribution to how the organization functions as a whole.

Quality control is also essential: all equipment and accessories must be stable and in working condition for employees to be able to carry out their tasks effectively. Managers should also encourage their staff to undergo training or study for personal and professional development. In turn, employees should be rewarded for making this effort and the management should provide opportunities for them to implement what they have learned.

Organizations should conduct staff satisfaction surveys as well as exit interviews to help them improve the quality of their employees' work life. They should make sure that the organization's mission, objectives and policies are explained properly to each employee, with a clear, written job description for every position. Employees tend to associate their supervisor's feedback with the organization itself, so the feedback they receive should be appropriate. Giving rewards or assistance is not only a criterion for support from one's manager, but also from the organization itself. Overall, this study corroborates the argument that organizations that take measures to support their employees and succeed in communicating that support are more likely to retain employees who are committed to their work and to the organization.

References

- Ahmad, K. Z., & Abu Bakar, R. (2003). The association between training and organizational commitment among white-collar workers in Malaysia. *International Journal of Training and Development*, 7(3), 166–185.
- Allen, M. W., Armstrong, D. J., Reid, M. F., & Riemenschneider, C. K. (2008). Factors impacting the perceived organizational support of IT employees. *Information and Management*, 45(8), 556–563.
- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational and Organizational Psychology*, 63(1), 1–18.
- Arshadi, N. (2011). The relationships of perceived organizational support (POS) with organizational commitment, in-role performance and turnover intention: Mediating role of felt obligation. *Procedia – Social and Behavioral Sciences*, 30, 1103–1108.
- Aubé, C., Rousseau, V., & Morin, E. M. (2007). Perceived organizational support and organizational commitment: The moderating effect of locus of control and work autonomy. *Journal of Managerial Psychology*, 22(5), 479–495.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley & Sons.
- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6(1), 97–113.
- Buchanan, B. (1974). Building organizational commitment: The socialization of managers in work organizations. *Administrative Science Quarterly*, 19(4), 533–546.
- Cavana, R., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*. New York: Wiley & Sons.
- Çelik, A., & Findik, M. (2012). The effect of perceived organizational support on organizational identification. *World Academy of Science, Engineering and Technology*, 6(8), 2089–2094.

- Chen, Z. X., Aryee, S., & Lee, C. (2005). Test of a mediation model of perceived organizational support. *Journal of Vocational Behavior, 66*(3), 457–470.
- Cheung, C.-K. (2000). Commitment to the organization in exchange for support from the organization. *Social Behavior and Personality, 28*(2), 125–140.
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. New York: Routledge.
- Colakoglu, U., Culha, O., & Atay, H. (2010). The effects of perceived organizational support on employees' affective outcomes: Evidence from the hotel industry. *Tourism and Hospitality Management, 16*(2), 125–150.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management, 31*(6), 874–900.
- Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology, 86*(1), 42–51.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500–507.
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of Applied Psychology, 87*(3), 565–573.
- Fuller, J. B., Barnett, T., Hester, K., & Relyea, C. (2003). A social identity perspective on the relationship between perceived organizational support and organizational commitment. *Journal of Social Psychology, 143*(6), 789–791.
- George, J. M., Reed, T. F., Ballard, K. A., Colin, J., & Fielding, J. (1993). Contact with AIDS patients as a source of work-related distress: Effects of organizational and social support. *Academy of Management Journal, 36*(1), 157–171.

- Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, 25(2), 161–178.
- Kim, W. G., Leong, J. K., & Lee, Y.-K. (2005). Effect of service orientation on job satisfaction, organizational commitment and intention of leaving in a casual dining chain restaurant. *International Journal of Hospitality Management*, 24(2), 171–193.
- LaMastro, V. (1999). Commitment and perceived organizational support. *National Forum of Applied Educational Research Journal*, 12(3), 1–13.
- Maertz, C. P., Griffeth, R. W., Campbell, N. S., & Allen, D. G. (2007). The effects of perceived organizational support and perceived supervisor support on employee turnover. *Journal of Organizational Behavior*, 28(8), 1059–1075.
- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61–89.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance and normative commitment to the organization: A meta-analysis of antecedents, correlates and consequences. *Journal of Vocational Behavior*, 61(1), 20–52.
- Muneer, S., Iqbal, M. J., Khan, S. R., & Long, C. S. (2014). An incorporated structure of perceived organizational support, knowledge-sharing behavior, organizational trust and organizational commitment: A strategic knowledge management approach. *Pakistan Journal of Commerce and Social Sciences*, 8(1), 42–57.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87(4), 698–714.
- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of Applied Psychology*, 86(5), 825–836.
- Tabachnick, B., & Fidell, L. (2006). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.

- Tyler, T. R., & Blader, S. L. (2003). The group engagement model: Procedural justice, social identity and cooperative behavior. *Personality and Social Psychology Review*, 7(4), 349–361.
- Viswesvaran, C., Sanchez, J. I., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior*, 54(2), 314–334.
- Witt, L., & Carlson, D. S. (2006). The work–family interface and job performance: Moderating effects of conscientiousness and perceived organizational support. *Journal of Occupational Health Psychology*, 11(4), 343–357.

Deviant Workplace Behaviors in Organizations in Pakistan

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Abstract

While employees bring their own set of values and attitudes to the workplace, companies that adopt a positive approach toward their employees are likely to be more productive. Employee misbehavior and workplace deviance can have a severe impact on overall organizational performance and productivity, with a corresponding increase in costs. The literature indicates that deviant behaviors include stress, violence, sexual harassment, employee hostility and organizational injustice. This study examines the extent of organizational and interpersonal deviance at a private sector firm in Pakistan, in which a sample of 50 employees were asked to rate deviant workplace behaviors. The independent variables include leader mistreatment, employee hostility, organizational sabotage, intention to quit, and political and production deviance. The study finds a significant relationship between workplace deviance and most of these variables.

Keywords: workplace deviance, employee hostility, production deviance, job satisfaction, leader mistreatment.

JEL classification: M19.

1. Introduction

Deviant behavior can be described as any activity that violates the rules, regulations and norms of a particular organization. The literal meaning of deviance is that which differs from what most people would consider acceptable (Durrat, Amyx & Bennett, 2010). At an organizational level, deviance could include the use of abusive language or physical violence and attempts to humiliate a colleague (Greenberg & Baron, 2007). While most organizations try to create a healthy work atmosphere that encourages teamwork and maximizes productivity, there may be situations in which employers or employees engage voluntarily in deviant behavior. This has a detrimental effect on the organization as a whole (Liu & Ding, 2012) and makes it more difficult for the firm to meet its targets.

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While the phenomenon of deviant workplace behavior is not new, globalization, flexible technological environments, increased competition, workplace stress and materialism have all increased the incidence of deviant workplace behavior. This, in turn, affects employees' morale and their drive to excel, making it important to examine and resolve the issue. This study examines the extent of organizational and interpersonal deviance at a private sector firm in Pakistan, in which a sample of 50 employees were asked to rate deviant workplace behaviors, including leader mistreatment, employee hostility, organizational sabotage, intention to quit, and political and production deviance.

2. Literature Review

Workplace deviance is defined by Litzky, Eddleston and Kidder (2006) as "abnormal" or antisocial behavior on the part of an employer or employee. From an organizational perspective, this includes unwillingness to comply with a firm's values and rules as well as aggression and retaliation at the workplace.

This study uses Robinson and Bennet's (1995) definition of workplace deviance, which has served as a comprehensive framework for numerous subsequent studies. The authors divide workplace deviance into two broad categories: organizational and interpersonal deviance. Under this typology, organizational deviance includes acts such as sabotage or theft of a company's assets, and behavior such as an unwillingness to work or to meet targets and deadlines. Interpersonal deviance includes instances such as blaming another coworker without reason, or physically or verbally abusing a colleague. Key factors that relate to employee deviance include absenteeism, high turnover and withholding efforts (Oh, Lee, Ashton & de Vries, 2011). While most studies determine the causes of such behaviors and discuss their importance relative to other factors, Robinson and Bennet (1995) integrate deviant behaviors into a single framework.

Various studies show that factors such as stress, job commitment, organizational sabotage and leader mistreatment are strongly and positively related with workplace deviance (see Walsh, 2014). Duffy, Ganster and Pagon (2002) examine the causes and effects of deviant workplace behaviors in a sample of manufacturing firms. In another study, Ambrose, Seabright and Schminke (2002) highlight the relationship between injustice and organizational sabotage. Nasir and Bashir (2012) look at the level of deviance in the public sector in Pakistan. However, Bolin and Heatherly (2001) believe that much of the research does not address the relationship between employee deviance and personality or attitudes.

Workplace deviance occurs in almost every organization. The literature examines the role of political and production deviance, leader mistreatment, employee hostility, organizational sabotage and stress in deviant workplace behaviors (Chen, Chen & Liu, 2013). Many authors conclude that this area needs further research to help firms create better working environments for their employees. Deviant workplace behavior may be related to employee stress, which ultimately affects the firm's productivity and returns. Furthermore, as employee turnover increases, organizations may lose their position and status in the market. This underscores the importance of addressing workplace deviance (Palo & Chawla, 2015).

3. Rationale for Job Satisfaction

In examining workplace deviance, we need to take into account its relationship with job satisfaction. Good human resource management means ensuring that employees are satisfied with their jobs, which in turn makes them more productive to the advantage of the organization. This entails gauging the relationship between staff and the nature or content of their work (Liu & Ding, 2012). Emotion is central to workplace deviance in that job dissatisfaction can give rise to aggression and negativity among employees (Spector, Fox & Domagalski, 2006).

Greenberg and Baron (2007) suggest that job satisfaction is an attitude: employees will weigh the actual outcomes of their job against their expectations. Vogelsmeier, Halbesleben and Scott-Cawiezell (2008) show that job satisfaction contributes to positive behavior among employees. On the other hand, low job satisfaction has negative implications for the organization, including a decline in returns, increased overheads and high turnover (Zeffane, Ibrahim & Al Mehairi, 2008). Studies such as Marcus and Schuler (2004) and Marcus et al. (2016) find that job satisfaction plays a major role in workplace deviance.

Durrat et al. (2010) show that lower levels of job satisfaction are correlated with higher levels of workplace deviance: dissatisfied employees are more likely to retaliate against their colleagues and employers. The nature of a job can have a significant impact on staff attitudes, making it necessary for employers to prioritize their employees' quality of work-life. Human resource managers must, therefore, understand exactly how the firm's work environment functions, which recruits will fit best and how to overcome any communication gaps that might hinder the relationship between the firm and the employee. This is especially important given the

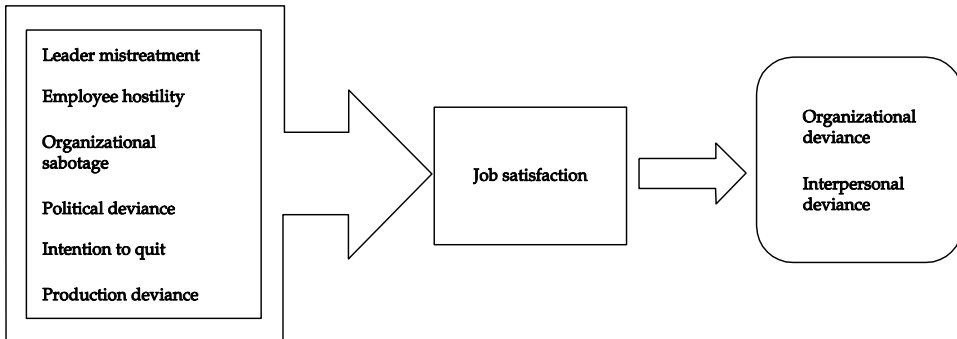
nature of competition not only among firms, but also among employees at the same firm. An organization's competitive advantage may lie in attracting and retaining competent, committed employees.

From the perspective of the employee, job satisfaction leads to a better relationship with one's coworkers, a long-term relationship with the organization, reduced stress and anxiety, and opportunities for advancement based on greater trust. A cross-sectional survey conducted by Nasir and Bashir (2012) – based on a sample of 100 employees from the government sector in Pakistan – shows that job satisfaction contributes inversely to about 80.2 percent of the variance in workplace deviance. This implies that lower levels of job satisfaction result in higher workplace deviance.

This study assesses the effects of job satisfaction, given its significance in the literature on workplace deviance and in the context of work-related stress and anxiety. Sims (2002) reports that employees who are highly satisfied with their jobs are less likely to engage in workplace deviance, and more likely to remain committed to the rules, regulations and norms set by their organization.

We expect job satisfaction to be negatively associated with workplace or employee deviance. This is tested across five areas (pay, supervisors, coworkers, advancement opportunities and benefits), with each response rated on a scale of 0–4 (0 = "very dissatisfied" and 4 = "very satisfied"). This helps determine the factors associated with deviant workplace behavior. Based on Robinson and Bennet's (1995) determinants of workplace deviance – organizational sabotage, political and production deviance, intention to quit, leader mistreatment, stress and job satisfaction – this study proposes the following hypotheses (see Figure 1):

- H1: individuals who are mistreated by their leaders engage in deviant workplace behaviors.
- H2: the prevalence of organizational sabotage leads to employee deviance in the organization.
- H3: employees who are satisfied with their jobs are less likely to engage in deviant workplace behaviors.
- H4: political deviance among employees increases deviant workplace behaviors.

Figure 1: Research framework

4. Methodology and Variables

The overall study has a quantitative and a qualitative component. The first part entailed gathering primary data for quantitative analysis. A sample of 50 employees working at a private organization in Lahore were asked to complete a questionnaire adapted from Robinson and Bennet (1995). The respondents represented a range of job levels, incomes and qualifications. Although the questionnaire was tailored to determine the level of deviance prevalent in the organization, it was deemed a credible instrument, given that it was based on Robinson and Bennet's (1995) well-established framework. Each variable being tested was rated on a Likert scale. Respondents were allowed to remain anonymous, given the sensitivity of the topic and to ensure the integrity of the data. Participants were told they could withdraw at any point if they were reluctant to respond.

The second part of the study entailed in-depth interviews with the organization's managers: although 15 senior managers were contacted, only five agreed to participate. In addition to thematic questions, they were asked to provide information on gender, marital status, educational qualifications, job contract, income range and current designation.

Following Robinson and Bennett (1995), the dependent variable, deviant workplace behavior, was measured using five independent variables (political deviance, production deviance, intention to quit, organizational sabotage and leader mistreatment) and one control variable (job satisfaction). Each variable was tested on the basis of four or five different questions to ensure reliable results.

5. Data Analysis and Discussion

This section presents the quantitative and qualitative results of the study.

5.1. Quantitative Analysis

Hypothesis H1 proposes that individuals or employees who have been mistreated by their leaders are likely to engage in workplace deviance. The literature supports the view that leader mistreatment and deviant workplace behaviors are positively correlated with one another. In the regression analysis, the leader mistreatment variable has a significance level of 0.034, which is less than 0.05. This implies that it has a strong and significant relationship with deviant workplace behavior. Thus, we reject the null and accept H1.

Hypothesis H2 states that organizational sabotage is associated with employee workplace deviance. The results show that organizational sabotage has a significance value of 0.020, which is less than 0.05. This confirms that the variable is significantly and positively correlated with workplace deviance. If organizational sabotage increases, there will be a corresponding rise in workplace deviance. This is consistent with previous studies. Therefore, we reject the null and accept H2.

Hypothesis H3 concerns job satisfaction as a control variable: the higher the level of job satisfaction, the smaller will be the likelihood of workplace deviance, that is, we expect a negative relationship between the two variables. The results indicate a significance value of 0.021 for job satisfaction. As determined by previous studies, the two variables should have a negative relationship: employees who are happy with their jobs in terms of salary, coworkers, supervisors, advancement opportunities and benefits are less likely to engage in deviant acts. Since the relationship is significant, we reject the null and accept H3.

Hypothesis H4 suggests that political deviance – in this case, instances of nepotism, disharmony among colleagues and unhealthy competition – results in increased workplace deviance. When tested, we find that this factor has a significant and positive relationship with workplace deviance, with a significance value of 0.016. This is closest to 0.000, implying that it is strongly correlated with workplace deviance.

Table 1 gives the regression results for the independent variables being tested. Overall, there is a significant relationship between the dependent and independent variables.

Table 1: Regression results for separate independent variables

Dependent variable = workplace deviance			
Independent variable	Significance level	Beta value	R2
Leader mistreatment	0.034	0.169	0.113
Employee hostility	0.040	0.167	0.111
Organizational sabotage	0.020	0.015	0.000
Political deviance	0.016	0.053	0.154
Intention to quit	0.033	0.085	0.148
Production deviance	0.012	0.189	0.127
Job satisfaction	0.021	-0.526	0.107

Source: Author's calculations.

In a multiple regression analysis, the R-squared term indicates the level of variability of the dependent variable. In this model, the variability of workplace deviance is 4.5 percent, with 95.5 percent of the variability being accounted for by the independent variables. The overall model is significant as the collective significance level of all the independent variables is 0.0381 (3.81 percent), which is less than 0.05. Therefore, these variables play an important role in explaining the variations in workplace deviance.

Table 2 gives beta values for the independent variables. A positive beta indicates that the variable moves in the same direction as the dependent variable, that is, they are positively correlated. Job satisfaction, as a control variable, has the only negative beta, indicating that there is an inverse relationship between workplace deviance and job satisfaction. All the values are significant at the 0.01 level. Apart from job satisfaction, all the other variables have positive beta values.

Table 2: Regression results for multiple independent variables

Dependent variable = workplace deviance

Independent variable	Beta value
Leader mistreatment	0.265
Employee hostility	0.240
Organizational sabotage	0.882
Political deviance	0.110
Intention to quit	0.104
Production deviance	0.140
Job satisfaction	-0.369

Note: Adjusted R-squared = 0.055.

Source: Author's calculations.

Table 3 confirms the reliability of the findings using Cronbach's alpha values. In this case, the alpha value is 0.84 or 84 percent, which falls in the acceptable range of 0.74 to 0.94.

Table 3: Individual Cronbach's alphas

Variable	Cronbach's alpha
Leader mistreatment	0.81
Employee hostility	0.63
Organizational sabotage	0.81
Political deviance	0.66
Intention to quit	0.72
Production deviance	0.74
Job satisfaction	0.82
Output value for all independent variables	0.84

Source: Author's calculations.

5.2. Qualitative Analysis

The five managers interviewed as part of the qualitative analysis were all male with an average age of 44 years. The purpose of these interviews was to assess workplace deviance from the perspective of senior management. Participants were asked whether they felt they had been mistreated and, if so, in what sense. They were also asked to describe how they had responded in such situations.

Most respondents replied that they had taken company property without authorization, although some said that employee deviance was relatively rare in the organization. Most of the answers were biased even though respondents were assured their answers would remain confidential. The human resources manager reported that deviance tended to increase when salary increments were being announced because employees were curious to find out what their colleagues had received.

Respondents were asked to describe how they had reacted to instances of perceived mistreatment:

- “Initially, I would get really upset at being scolded in front of my coworkers by my boss, but now I just say “Okay” and don’t utter any word in response. Jobs are difficult to get in these times and I am the only breadwinner in my family.”
- “When we see him [the director] coming or are told by our manager that the director will be paying a visit today or tomorrow, we act as though we are very busy, even if we are doing nothing. Our boss is hyperactive and insults everyone in front of others. Therefore, we pretend to be working hard so that he can’t pin the blame on anyone.”
- “I know there is no point in arguing when I am in a no-win situation. Therefore, I focus on my work and don’t interfere in other people’s matters.”

6. Conclusion

Workplace deviance, particularly in services-based organizations, can be detrimental to the firm’s performance (Chen et al., 2013). It incurs a direct cost when employees engage in unproductive behavior or damage firm property. Its indirect costs include preventing customers from receiving good service or dampening the morale of coworkers (Sady, Spitzmuller & Witt, 2008). In order to prevent workplace deviance, firms need to have a clear understanding of what drives this phenomenon. This study contributes to good managerial practices by investigating the relationship between job satisfaction and workplace deviance (Christian & Ellis, 2011).

In practice, managers must gauge what drives employee deviance and attempt to manage their employees and workplace more effectively. Service-oriented firms should monitor their clients’ level of satisfaction (Durrat et al., 2010). Managers and supervisors must try and create a

positive work environment for their employees to discourage workplace deviance (Nasir & Bashir, 2012). The present study suggests that job satisfaction is a key determinant in reducing workplace deviance.

The literature argues that it is necessary for employees to abide by the norms and rules of their organization. Failure to do so carries not only financial risk, but also compromises organizational integrity (Robbins & Galperin, 2010). This means addressing both individual as well as organizational factors that can lead to employee deviance in this context.

Rather than simply screening individual employees for potentially undesirable traits, organizations should focus on creating a fair work environment that prevents such behavior by providing their employees with “sociocultural support and access to information” (Robbins & Galperin, 2010). Just procedures, “equitable outcome distributions” and respect for employees increases their “perceptions of justice” (Robbins & Galperin, 2010). It is worth noting that the present study underscores the substantial difference in working environments in Pakistan compared to the West in the context of factors determining workplace deviance. However, further research is needed to examine and address the issue.

Our results show that all the variables tested have a positive effect on workplace deviance, except for job satisfaction. These results are consistent with the literature, although this does not rule out the need for further Pakistan-specific research. Future research should examine steps to lower workplace deviance among employees, provide them with safer and better work environments, and increase job satisfaction. Finally, this could also include exploring other methodologies to address these variables and provide optimal solutions.

References

- Ambrose, M., Seabright, M., & Schminke, M. (2002). Sabotage in the workplace: The role of organizational injustice. *Organizational Behavior and Human Decision Processes*, *89*, 947–965.
- Bolin, A., & Heatherly, L. (2001). Predictors of employee deviance: The relationship between bad attitudes and bad behavior. *Journal of Business and Psychology*, *15*(3), 405–418.
- Chen, C.-C., Chen, M. Y., & Liu, Y.-C. (2013). Negative affectivity and workplace deviance: The moderating role of ethical climate. *International Journal of Human Resource Management*, *24*(15), 2894–2910.
- Christian, M., & Ellis, A. (2011). Examining the effects of sleep deprivation on workplace deviance: A self-regulatory perspective. *Academy of Management Journal*, *54*(5), 913–934.
- Duffy, M., Ganster, D., & Pagon, M. (2002). Social undermining in the workplace. *Academy of Management Journal*, *45*(2), 331–351.
- Durrat, M., Amyx, D., & Bennett, R. (2010). An investigation into the effects of work–family conflict and job satisfaction on salesperson deviance. *Journal of Personal Selling and Sales Management*, *30*(3), 239–251.
- Greenberg, J., & Baron, R. A. (2007). *Behavior in organizations* (9th ed.). Upper Saddle River, NJ: Prentice Hall.
- Litzky, B., Eddleston, K., & Kidder, D. (2006). The good, the bad, and the misguided: How managers inadvertently encourage deviant behaviors. *Academy of Management Perspectives*, *20*(1), 91–103.
- Liu, N.-T., & Ding, C. G. (2012). General ethical judgments, perceived organizational support, interactional justice and workplace deviance. *International Journal of Human Resource Management*, *23*(13), 2712–2735.
- Marcus, B., & Schuler, H. (2004). Antecedents of counterproductive behavior at work: A general perspective. *Journal of Applied Psychology*, *89*(4), 647–660.
- Marcus, B., Taylor, O., Hastings, S., Sturm, A., & Weigelt, S. (2016). The structure of counterproductive work behavior: A review, a structural meta-analysis and a primary study. *Journal of Management*, *42*(1), 203–233.

- Nasir, M., & Bashir, A. (2012). Examining workplace deviance in public sector organizations of Pakistan. *International Journal of Social Economics*, 39(4), 240–253.
- Oh, I.-S., Lee, K., Ashton, M., & de Vries, R. (2011). Are dishonest extraverts more harmful than dishonest introverts? The interaction effects of honesty-humility and extraversion in predicting workplace deviance. *Applied Psychology*, 60(3), 496–516.
- Palo, S., & Chawla, A. (2015). Incidences of workplace deviance behavior among nurses. *Indian Journal of Industrial Relations*, 51, 150–161.
- Robbins, D. L., & Galperin, B. L. (2010). Constructive deviance: Striving toward organizational change in healthcare. *Journal of Management and Marketing Research*, 5, 1–11.
- Robinson, S. L., & Bennett, R. J. (2004). A typology of deviant workplace behaviors: A multidimensional scaling study. *Academy of Management Journal*, 38, 555–572.
- Sady, K., Spitzmuller, C., & Witt, L. A. (2008). Good employee, bad business: An interactionist approach to workplace deviance. *Academy of Management Proceedings*. Available from <http://proceedings.aom.org/content/2008/1/1.98.full.pdf+html>
- Sims, R. (2002). *Managing organizational behavior*. Westport, CT: Praeger.
- Spector, P., Fox, S., & Domagalski, T. (2006). Emotions, violence and counterproductive work behavior. In E. K. Kelloway, J. Barling & J. Hurrell (Eds.), *Handbook of workplace violence* (chap. 3). New York: SAGE.
- Vogelsmeier, A., Halbesleben, J., & Scott-Caweizell, J. (2008). Technology implementation and workarounds in the nursing home. *Journal of the American Medical Informatics Association*, 15(1), 114–119.
- Walsh, G. (2014). Extra- and intra-organizational drivers of workplace deviance. *The Services Industries Journal*, 34(14), 1134–1153.
- Zeffane, R., Ibrahim, M., & Al Mehairi, R. (2008). Exploring the differential impact of job satisfaction on employee attendance and conduct: The case of a utility company in the United Arab Emirates. *Employee Relations*, 30(3), 237–250.

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