ISSN 2223-0025

THE LAHORE JOURNAL OF BUSINESS

Lahore School of Economics

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Volume 03, No.01 **Apr-Sep, 2014**

THE LAHORE JOURNAL OF BUSINESS

Indexing/Abstracting *EBSCO Host, IndexCopernicus Master List*
Editorial Staff: Tele. No: 0092 - 42 – 111-656-111 Ext. 198
Telefax: 0092 - 42 – 36561230
URL: www.ljbs.org
E-mail: ljb@lahoreschool.edu.pk, ljbs@ymail.com
Publisher: Lahore School of Economics, Lahore, Pakistan.

Correspondence relating to subscriptions and changes of address should be sent to *The Lahore Journal of Business*, Intersection Main Boulevard Phase VI DHA and Burki Road, Burki Lahore - 53200 – Pakistan.
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03 2014

THE LAHORE JOURNAL OF BUSINESS

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Contact Info

Ms. Sehrish Nisar
Assistant Editor, Lahore Journal of Business
Lahore School of Economics, Lahore, Pakistan
T +92 (0) 42 111-656-111 Ext. 198
ljb@lahoreschool.edu.pk, ljbs@ymail.com

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OF

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Printed by Lahore School of Economics Press

The Lahore Journal of Business
3 : 1 (Autumn 2014): pp. 1–19

Earnings Management Through Deferred Taxes Recognized Under IAS 12: Evidence From Pakistan

Abdul Rafay* **and Mobeen Ajmal****

Abstract

This study examines earnings management through deferred taxes calculated under the IAS 12 and its impact on firm valuation. The literature finds that book–tax nonconformity leads to better earning quality and a greater association between earnings and future expected cash flows. Given that Pakistan is a pioneering implementer of the International Financial Reporting Standards, our hypothesis is that the components of deferred tax disclosed under the IAS 12 provide value-relevant information to equity investors. We divide deferred tax components into three categories: those arising from (i) operational activities, (ii) investing activities, and (iii) financing activities. These are subdivided to ensure that no value-relevant component is aggregated with a nonvalue-relevant component, which might otherwise lead to an information slack. Our sample includes data on shariah-compliant companies listed on the Karachi Meezan Index (KMI-30). We find that deferred tax line items in firms' balance sheets are reflected in market prices. Investors also tend to treat deferred tax line items (arising from operating, financing, and investing activities) differently. Furthermore, the value relevance is dissimilar for different components of deferred tax. Investors are wary of deferred tax assets and liabilities when pricing and are likely to penalize firms with a higher deferred tax position.

Keywords: Deferred tax, earnings, IFRS, IAS 12.

JEL classification: H22, H25, M410.

1. Introduction

Over the years, the position of deferred taxes has increased as fair-value accounting takes precedence over cash-basis accounting (Poterba, Rao, & Seidman, 2007), which results in a net increase in book–tax nonconformity. Pakistani firms report their net deferred tax position in their financial and related disclosures. The aim of this study is to analyze whether investors find these disclosures value-relevant.

* Associate professor of finance and accounting, University of Management and Technology, Lahore.
** Lecturer in finance, University of Management and Technology, Lahore.

Although we find that deferred taxes are value-relevant, investors tend to penalize firms reporting a deferred tax position: deferred tax liabilities (DTL) are treated as real liabilities while deferred tax assets (DTA) are treated as a negative asset class. This is because taxes generally have a negative connotation and deferred taxes are often misunderstood. The European Financial Reporting Advisory Group (EFRAG) points out that many users and preparers question the usability, understandability, and incremental value of decision-making under the International Accounting Standard (IAS) 12, arguing that it is difficult and costly to apply (EFRAG, n.d.). There is also a consensus that deferred tax notes and values are treated as a black box: most practitioners do not know how to use it, most stock analysts do not understand it (Carnahan & Novack, 2002), most lenders ignore it, and a few reverse the deferred tax and use it as equity (Amir & Sougiannis, 1999).

With increasing convergence toward the International Financial Reporting Standards (IFRS), many firms will have to report their deferred taxes, which will increase their costs as the IAS/IFRS entail extensive financial reporting requirements. In such an environment, it is necessary to document the value-relevance/irrelevance of deferred taxes for investors. Standard setters can use these findings to assess the usefulness of current IAS 12 reporting and disclosure requirements. Moreover, they should move toward a common deferred tax disclosure language or else investors are likely to continue discounting firms with a deferred tax position. Finally, deferred tax research on IFRS-based data is rare as most studies use data based on the Generally Accepted Accounting Principles (GAAP). Such research is, therefore, of common international interest.

2. Deferred Taxes: A Brief Overview

The tax payable for any company is calculated by multiplying its taxable income by the statutory corporate tax rate(s) devised by the federal government through legislation. A company's taxable income includes all its earnings of the tax year less permanent tax differences. This depends on whether the taxable income is charged under a presumptive tax regime or if it has a tax rate different from the corporate tax rate. The tax laws simply stipulate a methodology for computing taxable income and tax payable. However, since they account for both the fiscal and policy functions of the income tax statute, accounting personnel and tax authorities may calculate different taxable incomes (Chambers, 1968).

Permanent taxable differences arise due to the different treatment suggested by IAS 12 and the tax authorities for components of income and expenses. For example, any expenditure classified as a fine or penalty for the violation of any law, rule, or obligation cannot be deducted when calculating income under the head "income from business," although the IAS 12 treats such items as expenditure. Similarly, dividend income, which is a part of book income, is not included in taxable income and instead is taxed as a separate block of income. Such permanent differences accrue and are reflected in the firm's accounting earnings, but they do not give rise to DTA or DTL.

Temporary tax differences arise when the IAS 12 and the rulings of the tax authorities diverge on recognizing a component of income or expenses. For example, under the matching principle, compensated absences are treated as an expense for the year to which they relate even though the payment is made in the next period. Since the tax authorities require the minimization of assumptions and ask for tax payments that are cash-based more than accruals-based, compensated absences are not treated as an expense until they are paid for. These differences give rise to current tax expenses as opposed to the total tax expenses of a particular year; current tax expenses represent that portion of total tax expenses that need to be filed as part of the current year's tax return.

The disparity between a company's total tax expenses and current tax expenses arising from temporary tax differences is known as deferred tax expense. The concept of deferred tax is notional as no taxable person is allowed to defer his/her tax payments. The inter-period tax allocation arises only due to differences in reporting as a result of the matching principle; it recognizes the tax consequences of an item in the same financial period as the item itself (Chludek, 2011).

Many balance sheet and income statement line items give rise to deferred tax expenses. The IFRS allow the use of the "liability method" to recognize deferred taxes. DTA are the historical sum of all temporary differences where the accumulated current tax expense exceeds the accumulated total tax expense reported in the firm's books. This implies that the firm has paid more tax than it should and is owed future tax relief, indicating a future decrease in tax-related cash flows. The amount realized is to the extent that cash inflows are probable. On the other hand, DTL imply that the firm has not yet paid all the taxes due on income as indicated by the IAS 12 and, therefore, will have increased future cash outflows with respect to taxes.

3. The Earnings Impact of Deferred Taxes

Book–tax differences may reflect earnings management as large book-to-tax differences are correlated with a lower earnings–return relationship (Joos, Pratt, & Young, 2002). Similarly, for years in which firms show a small increase in earnings per share (EPS), their deferred tax expenses are larger than for years in which there is a small decrease in EPS (Phillips, Pincus, & Rego, 2003). These studies indicate that deferred taxes are a source of opportunistic earnings management, which, as Hanlon (2005) suggests, occurs because the accounting rules allow managers more discretion than tax authorities. The decrease in the amount of tax paid in cash—through the creation of DTL—results in a decrease in the amount of current explicit tax and thus, as per Hanlon and Heitzman (2010), can be classified as tax avoidance. Benign tax avoidance strategies increase the value of a firm (Brown, Drake, & Martin, 2013) when investors perceive greater value addition from decreasing tax expenses through low-risk methods compared to aggressive tax reduction strategies (Hanlon & Slemrod, 2009).

Deferred taxes are also a source of real increases in earning potential. Narasimhan and Harisha (2006) point out that deferring taxes is a free-of-cost source of funds. A decrease in the effective tax rate through the creation of DTL is positively correlated with the firm's future earnings (Schmidt, 2006). Givoly and Hayn (1992) note that decreases in DTL are treated as decreases in actual liabilities and as increases in share prices. Amir and Sougiannis (1999) report similar findings in that DTA are the result of carry-forward credits and treated as real assets by investors.

The value-relevance of deferred taxes depends on the timing of their reversal. Partial deferred taxes are more value-relevant because they capture only those DTL that will reverse in the short term (Wong, Wong, & Naiker, 2011), while many other DTL do not result in a cash outflow (Beechy, 1983). For instance, a growing company with continuous investment in fixed assets will have continuous tax savings annually (Davidson, 1958), thus ensuring that the DTL do not reverse (Livingstone, 1967); investors find such liabilities to be a misnomer and regard them as a portion of equity (Wolk, Tearney, & Dodd, 2001).

On the other hand, Sansing (1998) suggests that DTL are real liabilities the value of which does not depend on the timing of reversal. The fair value of such a liability is at a discount to the book value, but the discount rate is not time-dependent. The study also finds that the discount

rate is proportional to the rate at which the liability is realized and to the sum of the firm's cost of capital and deferred tax reduction rate.

Guenther and Sansing (2000) report similar results for DTA and suggest that investors understand that the book value of DTL resulting from depreciation is undiscounted. The value is not equal to the present value of future deferred tax expenses primarily because the timing of the reversal is irrelevant; moreover, their value is zero if they never reverse (Stickney, 1993). However, the timing of the reversal is important for those deferred tax items that reverse simultaneously with a cash outflow (Sansing & Guenther, 2003). These findings indicate that different components of deferred taxes are valued differently. Differentiation with respect to the value of the level of deferred taxes and the rate of reversal can also affect the valuation of the firm.

Amir, Kirschenheiter, and Willard (1997) support these findings, noting that different components of DTA and DTL affect firm valuation differently. Similar to restructuring charges, which are expected to reverse in subsequent periods, DTA are more value-relevant and thus have higher coefficients, while items such as employee benefits, which adjust slowly, are less value-relevant and have smaller coefficients. DTA related to unabsorbed losses have insignificant coefficients, indicating that they are not value-relevant: investors do not, therefore, expect to utilize these assets. DTL are similar to depreciation expenses in that their coefficients are small.

Most studies focus on the value-relevance of deferred taxes to investors. Some, such as Lev and Nissim (2004), conclude that there is no relationship between deferred tax expenses and the annual rate of return. Similarly, Chen and Schoderbek (2000) find evidence that analysts do not include deferred tax information in their earnings forecasts.

4. Model Development

We use Feltham and Ohlson's (1995) framework, which establishes the market price of equity (P) as a linear function of net financial assets (NFA), current net operating assets (NOA), and internally unrecorded goodwill. Abnormal operating earnings (AOE) are used as a proxy for unrecorded goodwill. Net DTA are considered a separate asset class on the basis that net deferred taxes contribute significantly to measuring unrecorded goodwill. Goodwill calculations vary with the existence of deferred taxes: the sooner DTA (DTL) reverse, the more (less) goodwill is available through the adjustment of the present value of deferrals. It is also

implied that the classification of deferred taxes as operating assets, financial assets, or shareholder equity affects the valuation of AOE.

Amir et al. (1997) relate the market price of equity to NOA, NFA, current AOE, and net deferred taxes (DT) in period *t* as follows:

$$P_t = \alpha + \beta_1 NOA_t + \beta_2 NFA_t + \beta_3 AOE_t + \beta_4 DT_t + \varepsilon_t \quad (1)$$

Given that firms differ in terms of earnings persistence, Amir et al. (1997) add lagged abnormal operating earnings (LAOE) to equation (1) above, which yields:

$$P_t = \alpha + \beta_1 NOA_t + \beta_2 NFA_t + \beta_3 AOE_t + \beta_4 DT_t + \beta_5 LAOE_t + \varepsilon_t \quad (2)$$

In the case of unbiased accounting, the coefficient of NFA, β_2, should be 1. However, since the IFRS adopt a conservative accounting approach, β_2 should be greater than 1. NOA should be valued at more than its book value, implying that β_1 is positive and large. The coefficient of AOE, β_3, and LAOE, β_5, should be equal to 0 if there is no persistence. The coefficient of DT, β_4, will depend on the expectation of reversal: greater reversal in the next period implies a larger beta. Its sign should be similar to that of NFA.

We capture the expected reversal of different deferred tax line items by using four different classification systems. In classification 1, we add both components of net DT, i.e., DTA and DTL, to the regression equation. In classification 2, we separate DT into the most commonly recurring line items in a deferred tax disclosure, i.e., deferred taxes from accelerated depreciation, staff gratuity, provision for current assets, and unabsorbed tax losses and credit along with a net category for all other deferred taxes. Classification 3 is based on the nature of the activity—operating, financing, or investing—that generated the deferred tax. Classification 4 clubs together deferred taxes based on common traits and comprises the following categories: (i) depreciation and amortization, (ii) revaluation, (iii) deferred costs, (iv) human resources, (v) liabilities, (vi) taxes, and (vii) long-term investments. The results are estimated by the following equation:

$$P_t = \alpha + \beta_1 NOA_t + \beta_2 NFA_t + \beta_3 AOE_t + \sum_{t=1}^{n} \delta_{it} DTC_{it} + \varepsilon_t \quad (3)$$

where n equals 2 (classification 1), 5 (classification 2), 3 (classification 3), or 7 (classification 4) depending on the classification system and DTC_{it} represents the ith component of deferred taxes in year t.

5. Sample

Our sample includes all companies currently listed on the Karachi Meezan Index (KMI-30), which measures the performance of *shariah*-compliant companies in Pakistan using free-float market capitalization. The data are drawn from the financial statements of these companies, based on two criteria: (i) each company's balance sheet should report its DT position and (ii) the notes to the financials should report both the DTA and DTL and their components. Based on these, the sample excludes companies such as HUBCO and Pakgen (Pvt.) Limited, both of which are tax-exempt. We have not used the Karachi Stock Exchange-30 because the index includes financial institutions for which it is difficult to differentiate between financial assets and operating assets.

Data on stock prices and betas are taken from Bloomberg; data on the treasury rate are from the State Bank of Pakistan's website. Firm-years for which financial data are not available have been dropped. No financial statement for Sui Northern Gas Pipelines Limited was available for 2013, while Engro Foods Limited did not start trading until 2010. Thus, after eliminating these, we obtain deferred tax data for 136 firm-years from 2009 to 2013. Once the LAOE has been determined, we are left with 108 firm-year observations (Table 1).

Table 1: Pooled sample

Firm years in KMI-30, 2009–13	150
Tax-exempt firms	(10)
Missing observations	(4)
Total observations before LAOE	136
Lagged LAOE	(30)
Total observations	108

Source: Authors' calculations.

The market value of equity at the fiscal year-end is calculated using the market value of equity per share. Data on the sample firms' financial assets and liabilities are taken from their respective risk management notes (reporting these data is compulsory under the IFRS). NOA is obtained by

subtracting financial assets and DTA from total assets; net operating liabilities are obtained by subtracting financial liabilities and DTL from total equity and liabilities. All assets are taken as positive numbers and all liabilities as negative numbers.

Operating income is taken as the firm's earnings before interest, taxes, and expenses for extraordinary items. Abnormal after-tax operating earnings are calculated as the operating income minus the previous period's NOA multiplied by the cost of capital (taken as the weighted average cost of capital). The return on stocks is obtained using the capital asset pricing model and the return on debt is calculated by dividing the interest expense by the interest-bearing debt. To ensure that the regressions are not biased due to the size effect of idiosyncratic companies, we adjust all independent and dependent variables by the number of shares outstanding.

6. Results

The average market value per share for the firms in the sample is PRs 121.69 (Table 2). The average NOA is about PRs 106.60 or roughly 87 percent of the firm's market value. The average NFA is negative, indicating that, even for shariah-compliant securities, financial liabilities exceed financial assets and tax-deductible debt is used to finance operations. However, in line with shariah regulations, firms' average net financial liabilities represent only 18 percent of their market value. Average net DT represents only 1 percent of the market value, while for most firms DTL is greater than DTA. The average AOE is positive and large, indicating the inefficiency of financial markets in Pakistan.

Table 2: Descriptive statistics (PRs per share)

	Mean	Median	SD	Inter-quartile range
P	121.690100	81.555000	133.709300	172.105000
NOA	106.602300	55.173120	167.679500	119.455600
NFA	-22.158020	-7.788727	92.040470	38.862680
Net DT	-1.499455	-1.433794	9.041167	3.775911
AOE	11.632030	2.364498	36.773870	23.763120

Source: Authors' calculations.

Table 3 gives the per-share regression results of equation (2) in which the market value of equity is regressed on NOA, NFA, current AOE,

LOAE, and DT. All the coefficients are significant at a 95 percent confidence interval. The coefficient of NOA is 0.32, which implies that PRe 1 of NOA is priced at PRe 0.32 by the market at a 99 percent level. NFA is valued at 0.35 of the book value, which is in line with proposition II of the Modigliani–Miller theorem. This suggests that investors view the debt acquired by KMI-30 firms positively. The coefficient of net DT is –5.63 (far below –1), which indicates that investors perceive deferred taxes negatively. The coefficient of AOE is positive and greater than 1. The coefficient of LAOE is equal to 1, which reflects persistent earnings and slow market correction.

Table 3: Pooled regression of share price (P) on variables I

	Coefficient	SE	T-test	P > T	95% confidence interval	
NFA	0.3542	0.0597	5.9300	0.0000	0.2357	0.4727
NOA	0.3238	0.1183	2.7400	0.0070	0.0891	0.5584
DT	-5.6308	1.2349	-4.5600	0.0000	-8.0803	-3.1813
AOE	1.8572	0.2814	6.6000	0.0000	1.2991	2.4153
LAOE	1.0666	0.2654	4.0200	0.0000	0.5402	1.5931
Intercept	47.8195	11.5488	4.1400	0.0000	24.9126	70.7264
R^2		0.5930				
Observations		108				

Source: Authors' calculations.

We apply classification 1 (see Section 4) to equation (3) to see if investors differentiate between DTA and DTL in their valuations. Net DTA is replaced by its individual components, DTA and DTL. Table 4 employs these as two dependent variables instead of using net DTA as a collective amount. As expected, the coefficient of DTL is negative and significant at a 95 percent level.

What is interesting is that the coefficient of DTA is negative. The marginal value of PRe 1 of DTA as reported in the financials is PRs –4.98. This could indicate that (i) investors do not associate this marginal value with DTA because the net DT amount reported is equivalent to net DTL in most cases, or (ii) it is a tax asset, but is not seen as a positive asset because, for laypersons, the probability of receiving a tax return from the government in the future is very small.

Table 4: Pooled regression of share price (P) on variables II

	Coefficient	SE	T-test	P > T	95% confidence interval	
NFA	0.349	0.123	2.850	0.005	0.106	0.592
NOA	0.350	0.060	5.830	0.000	0.231	0.469
AOE	1.875	0.282	6.840	0.000	1.315	2.435
DTL	-6.143	1.374	-4.470	0.000	-8.868	-3.417
DTA	-4.984	1.483	-3.360	0.001	-7.925	-2.043
LAOE	1.050	0.266	3.940	0.000	0.522	1.578
Intercept	42.687	13.235	3.230	0.002	16.432	68.943
R^2		0.5924				
Observations		108				

Source: Authors' calculations.

There is a large disparity in the frequency of the 35 different components of deferred tax reported in the financials. Deferred taxes arising from accelerated depreciation are recognized in 102 firm-years, provision for liabilities in 62 firm-years, staff gratuity in 37 firm-years, and unabsorbed credit and losses in 35 firm-years. Other categories occur in fewer than 18 firm-years. To see if these significantly recurring deferred tax items are value-relevant, we regress them (under classification 2) on the price of equity in equation (3).

Table 5 gives the per-share pooled results for equation (3) with the additional regressors of classification 2. Compared to the results of the previous regression, there is a drastic decrease in the NFA coefficient from 0.35 to 0.064 and it becomes insignificant at the 95 percent level. Almost all the recursive deferred tax components are value-relevant except provision for slow-moving items, pilferage, and bad debts. The DTL arising from accelerated depreciation is not only significant with a coefficient of –7.67, but it also acts like a liability or negative asset class. This could be due to investors' perception that the increase in capital expenditure by the sample companies is not enough to delay these liabilities for long. This would understate the book value of the liabilities and thus overstate the book value of equity. The DTL arising from staff gratuity yields similar results.

However, the DTA arising from unabsorbed losses and credit has a negative coefficient, indicating that investors do not see these items as an asset class. They do not expect inflows to be reciprocated from these DTA, thereby overstating the book value of assets and liabilities.

Table 5: Pooled regression of share price (P) on variables III

	Coefficient	SE	T-test	P > T	95% confidence interval	
NOA	0.371	0.060	6.160	0.000	0.252	0.491
NFA	0.064	0.150	0.430	0.669	-0.234	0.363
DTODT	-2.512	1.769	-1.420	0.159	-6.024	1.001
DTADP	-7.673	1.476	-5.200	0.000	-10.604	-4.742
DTWKP	-13.207	12.778	-1.030	0.304	-38.571	12.157
DTUABS	-11.414	2.687	-4.250	0.000	-16.747	-6.081
DTSTG	-68.842	31.356	-2.200	0.031	-131.083	-6.601
AOE	2.140	0.291	7.360	0.000	1.563	2.718
LAE	1.217	0.272	4.480	0.000	0.677	1.756
Intercept	46.151	12.631	3.650	0.000	21.079	71.224
R^2		0.6187				
Observations		108				

Source: Authors' calculations.

Next, we classify net DT into the deferred tax arising from operating activities (DTOPR), financing activities (DTFIN), and investing activities (DTINV) to determine the effect of investors' perception of deferred tax items based on the activity from which they arise. Table 6 gives the results of equation (3) using classification 3. Both DTFIN and DTINV are insignificant at the 95 percent level.

To check if DTFIN and DTINV are individually equal to 0, we apply the F-test, which yields a value of 0.11. This implies that the null cannot be rejected at the 95 percent level and thus both are equal to 0. This could be for two reasons: (i) the relatively small number of firm-years for which these values are reported (47 and 41 firm-years in the case of DTFIN and DTINV, respectively, but 128 in the case of DTOPR), or (ii) investors do not recognize these assets or liabilities at all. On the other hand, DTOPR is negative and significant at 95 percent, which is consistent with prior results.

Table 6: Pooled regression of share price (P) on variables IV

	Coefficient	SE	T-test	P > T	95% confidence interval	
NFA	0.307	0.125	2.460	0.016	0.059	0.554
NOA	0.349	0.062	5.660	0.000	0.227	0.472
DTFIN	-4.403	9.445	-0.470	0.642	-23.147	14.341

DTINV	0.850	11.762	0.070	0.943	-22.490	24.191
DTOPR	-5.816	1.285	-4.340	0.000	-8.133	-3.031
AOE	1.839	0.287	6.400	0.000	1.269	2.410
LAOE	1.046	0.273	3.820	0.000	0.503	1.588
Intercept	50.874	12.847	3.960	0.000	25.379	76.369
R^2		0.5825				
Observations		106				

Source: Authors' calculations.

The results of equation (3) with the additional regressors of classification 4 are given in Table 7. The categories include deferred tax from (i) accelerated depreciation (DTADP), (ii) deferred costs (DTDFC), (iii) revaluation (DTFV), (iv) human resource benefits (DTHR), (v) long-term investments (DTLTI), (vi) liabilities (DTLB), (vii) tax-related issues (DTTX), and (viii) working capital measurement (DTWKC). Consistent with the results reported in Table 2, the NOA coefficient is close to 0.33 and the NFA coefficient is positive, albeit slightly higher. The coefficient of current AOE is also slightly higher while that of LAOE is slightly lower.

As expected, almost all the components have a negative coefficient except for DTHR, which has a positive and insignificant coefficient. We apply the F-test to determine if all the coefficients are equal to each other and reject the null at 99 percent with an F-value of 4.79 (5.57 if DTHR is removed, given its positive coefficient). Thus, our results indicate that the coefficients of DT components vary by type; investors, in turn, react differently to different categories of deferred tax when pricing.

The coefficient of DTL arising from accelerated depreciation is consistent with the result in Table 5. Additionally, the coefficients of DTADP, DTDFC, DTTX, and DTWKC are all negative and significant, which is consistent with the finding that deferred taxes from operating activities are negative and significant (see Table 6). The DT components related to financing, such as fair-value calculations or provision for liabilities, are insignificant and thus value-irrelevant.

The coefficient of DTLTI is negative and significant; it is also larger than the other components' coefficients, indicating either a model misspecification or the possibility that the model captures information about long-term investments that NOA or AOE do not.

Table 7: Pooled regression of share price (P) on variables V

	Coefficient	SE	T-test	P > T	95% confidence interval	
NFA	0.464	0.161	2.880	0.005	0.144	0.784
NOA	0.332	0.057	5.800	0.000	0.218	0.446
DTADP	-9.258	1.459	-6.340	0.000	-12.157	-6.360
DTDFC	-5.453	1.710	-3.190	0.002	-8.848	-2.059
DTFV	-0.132	10.492	-0.010	0.990	-20.967	20.702
DTHR	26.060	20.644	1.260	0.210	-14.936	67.055
DTLTI	-378.195	75.012	-5.040	0.000	-527.154	-229.237
DTLB	-0.369	10.399	-0.040	0.972	-21.019	20.282
DTTX	-14.650	2.551	-5.740	0.000	-19.716	-9.585
DTWKC	-26.011	11.466	-2.270	0.026	-48.779	-3.242
AOE	2.175	0.279	7.800	0.000	1.621	2.729
LAOE	0.804	0.253	3.180	0.002	0.302	1.306
Intercept	41.776	12.609	3.310	0.001	16.737	66.816
R^2		0.6755				
Observations		106				

Source: Authors' calculations.

Our results are not model-dependent. We have changed the model specifications by (i) including the second lag of abnormal operating income, (ii) the first lag of abnormal operating income, and (iii) deflating the dependent and independent variables by the book value of equity. All three analyses yield the same results: net DTA is value-relevant and has a negative sign. Furthermore, the deferred tax from operating activities is significant in all three specifications, the deferred tax from financing activities is never significant, and the deferred tax from investing activities is significant in specification (3). DTL is significant in all three specifications while DTA is not significant in specification (2).

7. Conclusion

We have used Feltham and Ohlson's (1995) theoretical framework combined with Amir et al. (1997)'s empirical work to test whether deferred taxes are value-relevant in Pakistan. Our model identifies the market price of equity as a function of NOA, NFA, net DT, and current and lagged AOE. Based on a sample drawn from firms listed on the KMI-30 index from 2010 to 2013, we find that NFA and NOA are value-relevant. Investors do not consider firms to have created any value addition when these asset classes

grow, as a result of which they are heavily discounted. The current and lagged AOE are also significant, indicating the persistence of earnings.

Net DTA are value-relevant although their coefficients are negative, implying that investors treat them as liabilities rather than assets. Even though both net DTA and NFA are negative for most companies, investors perceive net DTA as a source of value destruction and NFA as a source of value addition. Both DTA and DTL are value-relevant: DTA are treated as a source of value destruction and DTL as real liabilities. We also find that only the deferred taxes arising from operating activities are treated as value-relevant by the market; those arising from financing and investing are value-irrelevant.

Our results suggest that different components of DTA are value-relevant. The DTL from accelerated depreciation are significant but negative, indicating that investors treat them as liabilities that will reverse in the short term. Other categories that are value-relevant, albeit negative, include DTA arising from deferred costs, long-term investments, taxes, and changes in working capital. This suggests that investors do not associate these categories with a positive cash flow in the future. Moreover, they perceive firms that have paid more tax in a negative light.

These findings suggest that Pakistani investors treat both DTA and DTL negatively, penalizing companies that attempt to manage their earnings through the use of deferred taxes. Firms' deferred tax disclosures often contain numerous terms that are neither self-explanatory nor explained adequately in their financials, thus becoming cause for concern among laypersons and novice investors. For most investors, taxes have a negative connotation because there is little faith in the system, and deferred taxes—seen as the excess payment of taxes—are perceived as a source of value destruction. What investors do not take into account is that this is simply a notional exercise, given that taxes cannot be "deferred" in the literal sense.

We recommend that the tax authorities streamline the terminology used for deferred tax components and explain book–tax nonconformity to investors in terms of deferred tax along with each firm's disclosure notes.

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Appendix

Classification of deferred tax assets/liabilities as per classification 4

	Component	Classification 4
1	Accelerated depreciation	Accelerated depreciation
2	Exploration expenditure	Deferred cost
3	Exploratory wells costs	Deferred cost
4	Prospecting and development expenditure	Deferred cost
5	Share issuance cost, net to equity	Deferred cost
6	Fair value of hedging instruments	Revaluation
7	Investments at fair value through profit and loss	Revaluation
8	Re-measurement of investment available for sale	Revaluation
9	Revaluation of property, plant, and equipment	Revaluation
10	Unamortized balance of loans at fair value	Revaluation
11	Provision for compensated absences	Human resource
12	Staff retirement benefits, gratuity	Human resource
13	Provision for Workers Welfare Fund	Human resource
14	Share of profit (loss) on associates	Long-term investments
15	Investment in associates	Long-term investments
16	Long-term receivables	Long-term investments
17	Net borrowing cost capitalized	Long-term investments
18	Assets subject to finance lease	Provision for liabilities
19	Derivative financial instruments, net to equity	Provision for liabilities
20	Interest payable on security deposits	Provision for liabilities
21	Liabilities against assets subject to finance lease	Provision for liabilities
22	Liabilities offered for taxation	Provision for liabilities
23	Preference shares/convertibles stock transaction cost-liability portion	Provision for liabilities
24	Provision for decommissioning obligations	Provision for liabilities
25	Unpaid trading liabilities	Provision for liabilities
26	Unrealized exchange losses on foreign currency loans	Provision for liabilities
27	Provision for excise, taxes, and other duties	Tax-related
28	Final tax regime	Tax-related
29	Minimum tax adjustment	Tax-related
30	Provision for tax amortization	Tax-related

	Component	Classification 4
31	Sales tax refundable	Tax-related
32	Tax on fair value adjustments	Tax-related
33	Tax on subsidiary reserves	Tax-related
34	Unabsorbed tax losses/credits	Tax-related
35	Other	Working capital
36	Provision for slow-moving spares, store obsolescence, doubtful debts, other receivables, etc.	Working capital
37	Short-term provisions	Working capital

The Lahore Journal of Business
3 : 1 (Autumn 2014): pp. 21–35

Measuring Internet Banking Service Quality in India: An Empirical Study

Syed Shahzeb Saleem* **and Mohammad Adil****

Abstract

The measurement of Internet banking services is a key management activity that provides information necessary for making effective decisions, monitoring performance, and allocating resources effectively. In this context, the E-S-QUAL scale is widely used to measure service quality in various service industries. This study attempts to measure Internet banking service quality in India based on data collected from a sample of 274 respondents through nonprobability-based convenience sampling. In order to test the reliability of the scale and determine if there are significant differences between respondents' demographic variables and factors related to E-S-QUAL, we employ Cronbach's alpha (reliability test), the t-test, ANOVA, and correlation analysis. Our preliminary analysis indicates that, in terms of internal consistency/reliability, the E-S-QUAL (when applied to India) performs just as a scale measuring service quality should. The findings suggest there are no significant differences across respondents relating to gender and age, but there is a significant difference where income is concerned. There is a high and strong level of correlation between the factors of service quality.

Keywords: banking, service quality, consumer, online, Internet, e-banking, India.

JEL classification: O31, O32, O33.

1. Introduction

The Internet banking sector has grown tremendously in many countries since the turn of the century and transformed traditional banking practices. In India, the development of Internet banking dates back to the early 1980s when the Reserve Bank of India set up two committees to accelerate the pace of operational automation in the sector (see Committee on Financial Sector Assessment, 2009).

* Department of Business Administration, Aligarh Muslim University Malappuram Centre, Kerala (email: syed.shahzeb90@gmail.com).
** Assistant professor, Department of Business Administration, Aligarh Muslim University Malappuram Centre, Kerala (email: adilcms07@gmail.com).

At a basic level, Internet banking refers to the setting up of a webpage by a bank to provide information about its products and services. Sathye (1999) defines the process at a more advanced level as the "provisioning of facilities such as accessing accounts, funds transfer and buying financial products or services online." Internet banking also entails "the automated delivery of new and traditional banking products and services directly to customers through electronic and interactive communication channels" (Salehi & Alipour, 2010).

As a medium of banking services delivery and as a strategic tool for business development, Internet banking has gained wide acceptance across the world, including in India, with more and more banks entering the fray. According to industry estimates, 7–15 percent of banks' customer base apply for Internet banking; of these registered customers, 30–40 percent use Internet banking frequently. A number of studies show that Internet banking offers opportunities in the form of smaller transaction costs, improved customer services with a unique value proposition, and larger market size (see, for example: Adil, Akhtar, & Khan, 2013; Vinayek & Jindal, 2011; Alagheband, 2006; Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004; Brown & Molla, 2005; Jayawardhena & Foley, 2000). The cost of availing Internet banking services is a fraction of the cost involved in conventional methods. Moreover, it gives rise to a "win-win" situation in which the bank's operating costs fall while its profits increase and its customers can avail banking services more conveniently.

Compared to banks abroad, however, Indian banks offering online services still have a long way to go. For online banking to reach the wider public, there need to be enough users and an adequate infrastructure in place. While various security options such as line encryption, branch connection encryption, firewalls, digital certificates, automatic signoffs, random pop-ups, and disaster recovery sites are in place or are being developed, there is as yet no certification authority offering public key infrastructure, which is necessary for online banking to become successful on a larger scale. Some of the advantages and disadvantages associated with the use of Internet banking are listed in Table 1.

The structure of this paper is as follows. Section 2 reviews the literature on the electronic service quality scale (e-S-QUAL). Section 3 presents the methodology used and Section 4 provides a data analysis and discussion. Section 5 summarizes the study's findings, recommendations, and limitations, and presents directions for future research.

Table 1: Advantages and disadvantages of Internet banking

Advantages	Disadvantages
Reduced cost of transactions (mailing and transport to bank)	Extra cost or monthly charge/bill
Availability of Internet	Extra cost of systems and connection
Ease of access	Identity theft
Convenience	Privacy problems and ambiguity
Improved service operations	
Profitability for the bank	
Customer retention	

Source: Adapted from Adil et al. (2013).

2. Literature Review

Service quality is defined as "the degree of discrepancy between customers' normative expectations for the service and their perceptions of the service performance" (Parasuraman, Zeithaml, & Berry, 1985). Consumers tend to patronize specific shops because, apart from the level of service provided, they are "assured of certain service privileges; thus, the performance of salespeople stimulates bonding through trust between them and customers, which affects the latter's perception of the store or brand" (Lau, Cheung, Lam, & Chu, 2013).

E-service is the electronic provision of a service to customers (Buckley, 2003) or the provision of a superior experience with respect to the interactive flow of information (Santos, 2003). Rowley (2006) emphasizes other aspects of e-service, such as effort or performance, the delivery of which is mediated by information technology (the Web, information kiosks, and mobile devices) and includes the service element of e-retailing, customer support, and service delivery. Thus, e-service delivery systems comprise three potential dimensions:

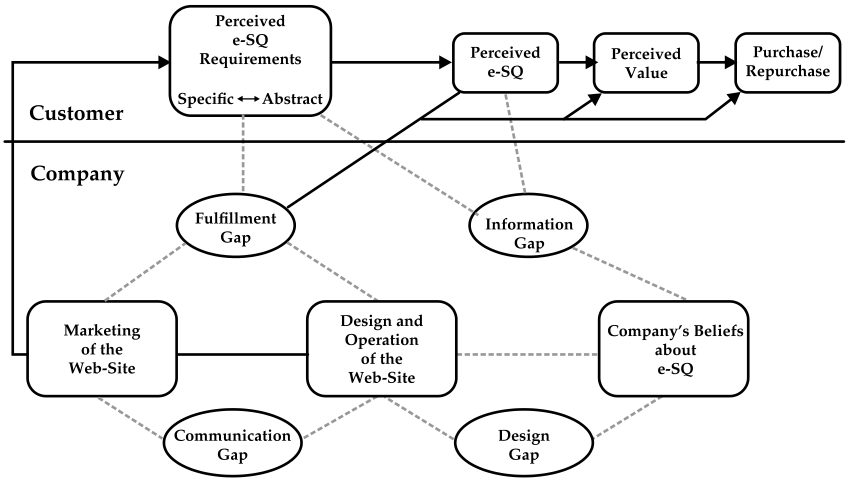
- Website design, including layout, aesthetics, and navigability.
- Information creation, selection, and quality.
- Dialogue and learning design.

Zeithaml (2002) identifies four key dimensions of quality—efficiency, reliability, fulfillment, and privacy—and defines electronic service quality (e-SQ) as the extent to which a website facilitates effective and efficient shopping, purchasing, and delivery. Customers evaluate e-SQ

at various levels of specificity, ranging from concrete cues to perceptual attributes and from broader to higher-order dimensions as indicated in Figure 1. The four key dimensions are explained below:

1. Efficiency refers to the ability of customers to access the website, locate their desired product and the information associated with it, and check out or log off with minimal effort.
2. Fulfillment refers to the accuracy with which the promised service is delivered, i.e., the capacity for having products in stock and delivered in the time promised.
3. Reliability is associated with the technical operation of the site, particularly the extent to which it is available and functions properly.
4. Privacy includes assurances that customers' shopping behavior and information are secure.

Figure 1: Model of e-SQ



Source: Adapted from Zeithaml (2002).

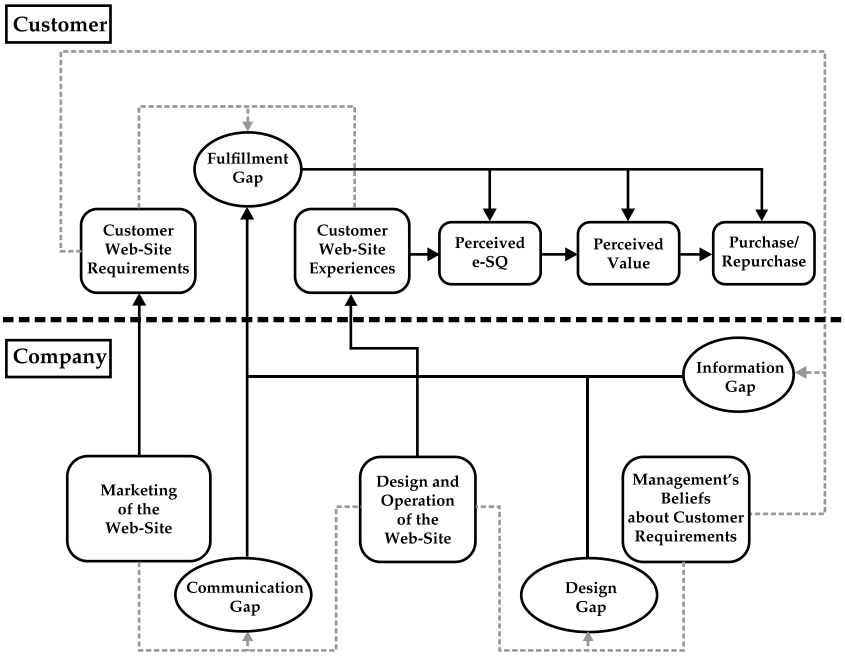
Parasuraman, Zeithaml, and Malhotra (2005) have developed a multiple-item scale for assessing e-SQ, which has the following key managerial implications:

- Efficiency and fulfillment are the most critical facets of website service quality and have the strongest impact on customers' assessment of a website, overall quality perception, perceived value, and loyalty intentions.

- Systems availability contributes significantly to customers' perception of overall quality, value, and loyalty intentions.
- Privacy emerges as the least critical of the four E-SQ dimensions.

Parasuraman et al. (2005) identify the following aspects of e-SQ: (i) access, (ii) navigability, (iii) efficiency, (iv) customization, (v) security, (vi) responsiveness, (vii) assurance, (viii) price knowledge, (ix) aesthetics, (x) reliability, (xi) flexibility, and (xii) efficiency. Each of these has a number of specific attributes. Additionally, Parasuraman (2004) has developed a conceptual gaps model for e-SQ as shown in Figure 2.

Figure 2: Gaps model of e-SQ



Source: Adapted from Parasuraman (2004).

3. Research Methodology

The study's methodology is based on descriptive research, given that its main objective is to explore customers' perception of the key service quality dimensions of Internet banking in India, i.e., (i) customer service, (ii) website design, (iii) assurance, (iv) preferential treatment, and (v) information provision. Specifically, it aims to:

- Identify the most critical dimensions of Internet banking service quality from the perspective of bank customers.
- Determine the extent to which demographics influence the perception of Internet banking service quality factors.
- Map significant differences among customers' perceptions vis-à-vis their demographic variables across different Internet banking service quality factors.

3.1. Hypotheses

The study is based on the following hypotheses:

- H1: There are no significant differences between male and female respondents with respect to various dimensions of Internet banking service quality.
- H2: There are no significant differences among different age groups of respondents with respect to various dimensions of Internet banking service quality.
- H3: There are no significant differences among different income groups of respondents with respect to various dimensions of Internet banking service quality.
- H4: The five dimensions of e-SQ are highly correlated with each other.

3.2. Survey Measures

We have used a self-administered questionnaire to measure perceived Internet banking service quality. The questionnaire is based on the e-SQ instrument developed by Parasuraman et al. (2005) (see Table 2) and was adjusted slightly to the given context of Internet banking in India. Items 1 to 17 are measured on a five-point Likert scale where 1 = "strongly disagree" and 5 = "strongly agree." The remaining questions relate to demographic variables such as age, gender, education, occupation, and household income. The data was collected using nominal, ordinal, and interval scales. In the final version of the questionnaire, the questions/items were scrambled to control for order bias (Malhotra, 2003).

3.3. Sample and Data Collection

While the geographic location of respondents was immaterial, the only criterion applied was that respondents should have personally engaged in online banking at least twice that month. We employed

convenience-based nonprobability sampling to obtain a large number of completed questionnaires quickly and economically. Personal contacts helped initiate the administration of the instrument. A total of 340 questionnaires were administered, out of which 274 were completed, yielding a response rate of 81 percent.

Table 2: E-SQ questionnaire

Factor	Item
Customer service	• The online process is accurate. • The hyperlinks on my bank's portal site are valid. • The webpage on my bank's portal site loads quickly. • My bank offers the correct Internet banking services the first time around. • I receive prompt responses to requests sent by e-mail or service line. • When problems occur, my bank's Internet banking system helps me resolve them.
Web design	• I can only complete online transactions. • I can login easily to the bank's website. • It is easy to understand which button to click to move to the next step. • My bank's Internet banking portal enables me to complete transactions quickly.
Assurance	• Transactions carried out on my bank's portal are reliable and credible. • My transactions data are protected/secured by the bank's website. • I feel relieved at being able to transact on my bank's Internet banking portal.
Preferential treatment	• My bank's Internet banking portal provides preferential rates and charges lower fees. • The transaction fee for the bank's Internet banking services is reasonable.
Information provision	• My bank's website provides sufficient and realtime financial information. • The content of the bank's portal site is varied and always up to date.

Source: Parasuraman et al. (2005).

4. Data Analysis and Interpretation

This section analyzes the performance of the E-S-QUAL and discusses the results obtained.

4.1. Reliability and Validity of the Scale

Evaluating the scale involves assessing its reliability and validity, and the extent to which it can be generalized. Reliability refers to the extent to which the scale produces consistent results if measurements are made repeatedly; validity is the extent to which differences in observed scale scores reflect true differences among objects on the characteristic being measured rather than systematic or random error (Malhotra, 2003).

Following Cronin and Taylor (1992), Sohail and Shaikh (2008), Khan and Adil (2011), Adil (2013a, 2013b), and Adil et al. (2013), we employ Cronbach's alpha test to assess the internal consistency of items. The test is loosely equivalent to splitting the data in two in every possible way and calculating correlation coefficients for each split. The average of these values measures scale reliability. The language and layout of the questionnaire was also adjusted to improve the scale's face validity. Table 3 gives the cumulative and dimension-wise Cronbach's alpha scores for each factor. All five factors yield an alpha value higher than 0.7, which confirms they are reliable.

Table 3: Cronbach's alpha scores

Factor	Cronbach's alpha
Web design	0.798
Customer service	0.793
Information provision	0.816
Assurance	0.818
Preferential treatment	0.844
Overall	0.845

Source: Authors' calculations.

4.2. T-Test Analysis

The t-test helps judge the significance of a sample mean or the significance of difference between the means of two samples (Khan & Adil, 2013). The results of the independent sample t-test in Table 4 show that there is no significant difference between male and female consumers' perception of the e-SQ factors.

4.3. ANOVA Analysis

Analysis of variance (ANOVA) is a useful technique where more than two populations are to be compared at one time. Tables 5 and 6 give the results of a one-way ANOVA run on age and income, respectively. We find significant differences among respondents' perception of three dimensions: website design, customer service, and information provision. No significant differences are observed for the age variable.

Table 4: Results of t-test

		Levene's test for equality of var.		T-test for equality of means		
	Factor	**F**	**Sig.**	**T**	**df**	**Sig. (2-tailed)**
WD	Equal variances assumed	0.206	0.651	-0.268	67.000	0.790
	Equal variances not assumed			-0.261	19.541	0.797
CS	Equal variances assumed	0.400	0.529	-0.513	67.000	0.609
	Equal variances not assumed			-0.485	18.865	0.633
Info	Equal variances assumed	0.090	0.765	-0.146	67.000	0.884
	Equal variances not assumed			-0.138	18.865	0.891
ASU	Equal variances assumed	0.661	0.419	0.497	67.000	0.621
	Equal variances not assumed			0.411	16.638	0.686
Pref	Equal variances assumed	5.016	0.028	-0.101	67.000	0.920
	Equal variances not assumed			-0.118	25.216	0.907

Source: Authors' calculations.

Table 5: Results of ANOVA (income)

	Factor	**Sum of squares**	**df**	**Mean square**	**F**	**Sig.**
WD	Between groups	4.828	3	1.609	3.219	0.028
	Within groups	33.494	270	0.500		
	Total	38.322	273			
CS	Between groups	4.117	3	1.372	4.281	0.008
	Within groups	21.479	270	0.321		
	Total	25.596	273			
Info	Between groups	9.215	3	3.072	6.259	0.001
	Within groups	32.884	270	0.491		
	Total	42.099	273			
ASU	Between groups	3.108	3	1.036	2.111	0.107
	Within groups	32.883	270	0.491		
	Total	35.991	273			
Pref	Between groups	5.616	3	1.872	2.114	0.107
	Within groups	59.321	270	0.885		
	Total	64.937	273			

Source: Authors' calculations.

Table 6: Results of ANOVA (age)

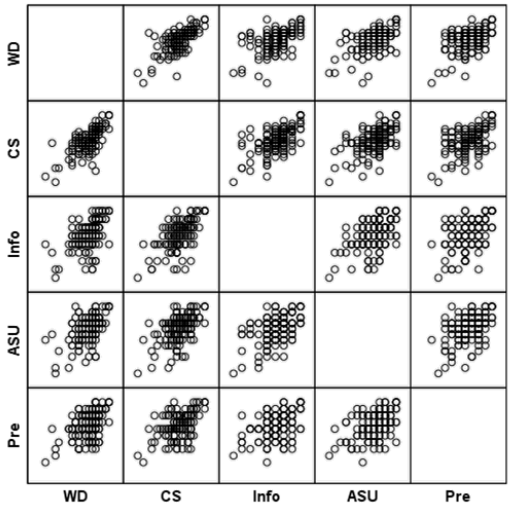
	Factor	Sum of squares	df	Mean square	F	Sig.
WD	Between groups	2.298	3	0.766	0.899	0.447
	Within groups	55.367	270	0.852		
	Total	57.665	273			
CS	Between groups	1.375	3	0.458	0.668	0.575
	Within groups	44.602	270	0.686		
	Total	45.977	273			
Info	Between groups	2.241	3	0.747	0.926	0.433
	Within groups	52.462	270	0.807		
	Total	54.703	273			
ASU	Between groups	5.903	3	1.968	2.644	0.056
	Within groups	48.367	270	0.744		
	Total	54.271	273			
Pref	Between groups	0.633	3	0.211	0.214	0.887
	Within groups	64.201	270	0.988		
	Total	64.833	273			

Source: Authors' calculations.

4.4. Correlation Analysis

A high degree of correlation indicates that the scale behaves as intended (Hair et al., 2006). We find a strong, significant correlation among the five e-SQ factors, with values ranging from 0.427 to 0.717 (Figure 3).

Figure 3: Correlation analysis



** Correlation is significant at 0.01 level (two-tailed).
* Correlation is significant at 0.05 level (two-tailed).

5. Findings, Recommendations, and Limitations

The findings of the study are summarized below:

- **Gender**. The results of the t-test show that there is no significant difference between male and female consumers' perception of the dimensions of e-SQ.
- **Age**. The ANOVA results show that there are no significant differences among the e-SQ factors. Further, age does not play a major role in influencing respondents' perception of Internet banking service quality.
- **Income**. The ANOVA results show that there are significant differences in respondents' perception of three factors: website design, customer service, and information provision.

In general, respondents appeared to be indifferent to aspects of Internet banking service quality such as responsiveness to customer requests or complaints, the ability to resolve problems arising from Internet banking, and the accuracy of the promised services delivered online. Banks need to improve the following aspects of Internet banking services:

- Better, more closely managed service delivery systems and processes need to be put in place.
- Customer-related information stored in banks' databases should be properly managed.
- Customers should receive relevant and timely responses to their enquiries.
- Proper feedback might also include acknowledging the enquiry and committing to resolve the problem in a given time.
- Banks should be able to meet all obligations and promises made to their customers.

The study's key limitations include the following:

- Given that not all the respondents completed the survey, future research could draw on a larger sample.
- Some respondents were reluctant to provide feedback, indicating that an alternative design may have produced better results.

- We could not properly identify the target population, making it difficult to calculate an appropriate sample size.
- The recommendations cannot be generalized if they are applicable only to selected regions of India.
- Projecting the results beyond a specific, nonprobability-based sample may not be possible. Future researchers could opt to use probability-based sampling techniques instead.

Given the relative novelty of online banking in India, other areas for further research could include a comparison of online banking service quality with existing traditional service quality models, for example, with respect to customer expectations and perceptions.

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The Lahore Journal of Business
3 : 1 (Autumn 2014): pp. 37–53

Consumer Behavior Toward Nonlocal Brands

Sana Azar, Amina Talat, Feryal Khan, Anam Rana*

Abstract

This study explores consumer behavior toward nonlocal brands in Pakistan. Specifically, it examines the extent to which (i) product quality, (ii) country of origin, (iii) religiosity (in the context of Pakistan as a predominantly Muslim country), (iv) social status, and (v) the unavailability of local substitutes determine consumers' purchasing decisions. Consumer ethnocentrism and the desire to emulate economically developed country lifestyles serve as the study's moderating variables. The research data was collected through a questionnaire survey conducted in Lahore among a sample of 200 people between the ages of 18 and 55. The questionnaires were distributed via Google Docs and employed a convenience and snowball sample. A confirmatory factor analysis was carried out to establish reliability and validity. The structured model was then used to assess the relationships identified above.

Keywords: attitude toward nonlocal brands, quality, religious conviction, economically developed country lifestyles, consumer ethnocentrism.

JEL classification: M30, M31, M37.

1. Introduction

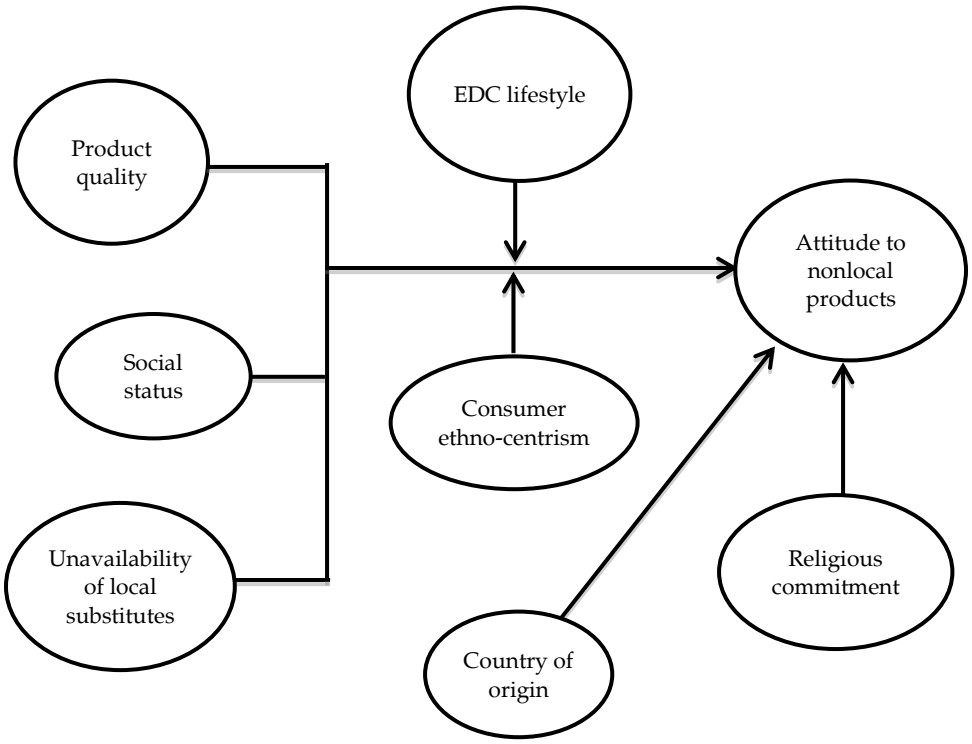
The number of farmers' markets has grown fourfold since the 1970s; this is attributed to consumers' preference for and the rising popularity of locally produced products (Williamson, 2014). A local example of such markets is the Khalis Market recently established in Lahore, Pakistan. Consumers' definition of "local" is determined by the product's proximity to home (Adams & Adams, 2011). The literature also indicates, however, that consumers tend to prefer foreign (nonlocal) products (Phau, 2014). Given this contradiction, our study investigates the collective impact of different factors that influence consumer behavior toward brand origin. These include product quality, social status, the unavailability of local substitutes, religious conviction, the desire to emulate economically developed country (EDC) lifestyles, and consumer ethnocentrism.

* Senior teaching fellow, assistant professor, assistant professor, and research assistant, respectively, at the Lahore School of Economics.

Specifically, we aim to understand consumer perceptions and attitudes toward nonlocal brands in an emerging economy and predominantly Muslim country such as Pakistan. In this context, we investigate whether the factors listed above affect consumers' preference for domestic over foreign products and vice versa. The research conducted on consumer behavior in developed countries suggests that, when consumers decide to purchase nonlocal products, their decision is based on product quality and worth. Our study examines whether this applies with reference to Pakistan.

2. Literature Review

The theoretical framework of this study is illustrated below and discussed in detail in this section.



Schuiling and Kapferer (2004) argue that consumers are likely to be more aware of—and prefer—local brands relative to nonlocal brands. However, local brands are not as varied as their foreign equivalents and firms cannot always employ effective marketing strategies for local products in the global market, given that such products often cater to the local culture (Belk, Devinney, & Eckhardt, 2005). Consumers classify and

evaluate nonlocal brands under three main heads: (i) "quality signal," (ii) "global myth," and (iii) "social responsibility;" these factors determine their purchase decisions (Holt, Quelch, & Taylor, 2004).

Johansson and Ronkainen (2005) find that consumers with a similar level of product knowledge associate nonlocal brands with greater prestige. Perceived product quality is defined as consumers' evaluation of brand dominance on the basis of intrinsic and extrinsic factors. Inherent factors include presentation and durability while extrinsic factors include brand name guarantee (Kirmani & Baumgartner, 2000). Consumers may give more weight to nonlocal brands if they associate these with higher quality and prestige (Nguyen, Barrett, & Miller, 2005; Steenkamp, Batra, & Alden, 2003). Our first hypothesis (H1), therefore, is that product quality is positively related to consumer attitudes toward nonlocal products.

Perceived prestige, however, influences purchase decisions only to some degree as it varies with product type. Products that are visibly consumed or used in public, for instance, may be associated with a stronger consumer preference for nonlocal brands (Steenkamp & Ter Hofstede, 2002). Steenkamp et al. (2003) argue that prestige is the second most significant factor to influence consumers' preference for nonlocal products. Generally, the literature finds that consumers prefer nonlocal brands that connote a higher social status (Schuiling & Kapferer, 2004; Steenkamp et al., 2003; Shocker, Srivastava, & Ruekert, 1994). Our second hypothesis (H2), therefore, is that consumers prefer nonlocal products because they add to their social status.

In the case of nonlocal brands, the country of origin influences consumer behavior and preferences because it is related to product quality and social status and prestige (Kinra, 2006). Nonlocal brands may be considered prestigious if they are more expensive and less easily accessible than local brands or if they are associated with a certain desirable consumer image. The particular country of origin also matters: one study shows that Chinese consumers have a more positive perception of highly industrialized countries than of newly industrialized countries (Ahmed & d'Astous, 2002). Developing country consumers may desire products from developed countries if they believe that these products are of better quality and reflect higher social status (Batra et al., 2000).

The country-of-origin effect contributes to consumers' impression of a particular brand, eventually affecting their purchase decision. A strong brand image may lead to rivalry, thereby increasing sales and directly affecting consumers' purchase decisions. Thus, both the brand producer

and its country of origin can affect brand loyalty (Baldauf, Cravens, Diamantopoulos, & Zeugner-Roth, 2009; Keller, 2003). Our third hypothesis (H3), therefore, is that a foreign brand's country of origin is associated with a positive consumer attitude toward nonlocal products.

Consumer ethnocentrism focuses on the dependability and ethics of purchasing foreign products along with the loyalty of consumers to locally manufactured products (Watson & Wright, 2000; Shimp & Sharma, 1987). Consumers tend to distinguish between local and nonlocal products and may avoid purchasing the latter out of patriotism (Shankarmahesh, 2006). The level of ethnocentrism varies from country to country. A study on Iran shows that ethnocentric consumers are not heavily exposed to nonlocal brands (Bahaee & Pisani, 2009). Another study conducted in Lucknow in India reveals that, although consumers are highly ethnocentric, they are not biased against nonlocal brands (Kinra, 2006).

Lantz and Loeb (1996) investigate the value that North American consumers place on a given product (computer mouse pads) manufactured in their own or another country. They find that highly ethnocentric consumers are more likely to behave favorably toward products from culturally similar countries. Our fourth hypothesis (H4) is that consumer ethnocentrism moderates the relationship between (i) product quality, (ii) social status, and (iii) the availability of local products and consumers' attitude toward nonlocal products.

Religiosity can also influence consumer decision-making habits, performance, lifestyle, attitudes, and awareness (Jusmaliani & Nasution, 2009). Religiosity is categorized as either intrapersonal or interpersonal, both of which play a crucial role in the lifestyles of orthodox consumers (Mokhlis & Spartks, 2007). The first dimension reflects internal religious beliefs and character while the second includes external religious affiliations and practices. The literature suggests that it is not just a particular religion that affects consumer behavior, but also the strength of an individual's religion conviction (Mukhtar & Butt, 2012). Our fifth hypothesis (H5) is that religious conviction is associated with negative consumer attitudes toward nonlocal products.

A New Zealand study on the unavailability of local substitutes suggests that, in such a situation, consumers prefer to buy products from countries that are ethnically similar to their own. This makes it very important for consumers to be aware of a product's country of origin (Watson & Wright, 2000). Our sixth hypothesis (H6) is that the unavailability of local substitutes leads consumers to purchase nonlocal products.

In their study on India, Batra et al. (2000) show that the desire to emulate EDC lifestyles may encourage consumers to buy brands produced in developed countries in order to reflect their social position. Our seventh hypothesis (H7) is that this desire to emulate a certain lifestyle moderates the relationship between product quality, social status, the unavailability of local products, and consumers' attitude toward nonlocal products.

3. Methodology

We have used a deductive approach in this study, employing empirical cross-sectional data to test the proposed theoretical framework. A combination of self-selection sampling and snowball sampling was used to reach a sufficient number of respondents. The survey questionnaire was distributed using Google Docs to collect and code the data efficiently and cost-effectively. The survey link was distributed via different social media. The usable sample comprised 134 consumers between the ages of 18 and 55 from Lahore. A confirmatory factor analysis (CFA) was conducted to test the model's reliability, validity, and fit. The hypothesized relationships were then tested using the structured model.

Eight latent variables were measured based on 29 questions, four of which were demographical while the rest were measured on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The conceptual and operational definitions and composite reliability of each variable is as follows:

- Country of origin (or manufacture) can have a positive or negative influence on consumers' decision-making or subsequent behavior (Elliott & Cameron, 1994). This was measured using 11 items from Anwar, Yasin, Iqbal, and Sajid (2013) with a composite reliability of 0.914.
- Consumers' attitude toward nonlocal products is determined by "quality signal, global myth and social responsibility" (Holt et al., 2004) and was measured using two items from Ismail, Masood, and Tawab (2012) with a composite reliability of 0.687.
- Religious conviction is defined as being "capable of influencing an individual cognitively and behaviorally" (Mokhlis & Spartks, 2007). This was measured using two items from Ilyas, Hussain, and Usman (2011) with a composite reliability of 0.847.
- Product quality is defined as the "perceived quality" of a product, based on "consumers' judgment about an entity's (service's) overall

excellence or superiority" (Zeithaml, 1988). This was measured using two items from Batra et al. (2000) with a composite reliability of 0.782.

- Social status is defined as consumers' preference for global brands associated with greater prestige (Schuiling & Kapferer, 2004; Shocker et al., 1994; Steenkamp et al., 2003). This was measured using two items from Batra et al. (2000) with a composite reliability of 0.812.
- The unavailability of local substitutes relates to the context where "country-of-origin information becomes advantageous in case of unavailability of domestic substitutes for those who import from culturally similar countries" (Watson & Wright, 2000). This was measured using two items from Batra et al. (2000) with a composite reliability of 0.953.
- Consumer ethnocentrism is defined as consumers' beliefs concerning "the correctness, indeed ethics, of shopping [for] foreign products" (Shimp & Sharma, 1987). This was measured using three items from Batra et al. (2000) with a composite reliability of 0.746.
- The desire to emulate EDC lifestyles arises when "consumers' preferences are positively related to the economic development of the country of origin" and is based on the assumption that good quality connotes economic development (Lumpkin & Crawford, 1985). This was measured using one item from Batra et al. (2000).

4. Results and Analysis

Using CFA, we evaluate the model based on several criteria, including uni-dimensionality, reliability, and convergent validity (Miller & Luo, 2002; Anderson & Gerbing, 1988). All the item factor loadings were greater than 0.4 on their corresponding constructs.

4.1. Assessment of Model Fit

The model's p-value is significant although the chi-squared statistics are susceptible to the size of the sample. The model is not, therefore, rejected based on the chi-squared statistics alone (Bagozzi & Yi, 1988). The results in Table 1 indicate an adequate model fit.

Table 1: Model fit

P-value	0.000
CMIN/DF	1.900
Goodness of fit (GFI)	0.895
Adjusted goodness of fit (AGFI)	0.859
Tucker-Lewis index (TLI)	0.862
Comparative fit index (CFI)	0.892
Root mean-squared error of approximation (RMSEA)	0.082

Source: Authors' calculations.

4.2. Reliability and Validity

Composite reliability (CR) represents the internal consistency of each factor. All the variables meet the approximate 0.70 cutoff recommended by Nunnally (1978). Table 2 shows that the CR values for the constructs range from 0.953 (unavailability of local substitutes) to 0.687 (attitude toward nonlocal products). Fornell and Larcker (1981) suggest that the average variance extracted (AVE) provides an indicator of the overall convergent validity. In this case, the AVE for each scale is close to or greater than the 0.50 threshold value (Rosenzweig & Roth, 2007).

Table 2: Reliability and validity

Variable	CR	AVE	Items
Social status	0.812	0.707	2
Unavailability of local substitutes	0.953	0.927	2
Product quality	0.782	0.651	2
Country of origin	0.914	0.483	11
Religious conviction	0.847	0.734	2
Attitude toward nonlocal products	0.687	0.528	2
Consumer ethnocentrism	0.746	0.551	3
EDC lifestyle	-	-	1

Source: Authors' calculations.

4.3. Path Analysis

In order to test the structural relationships discussed above, we estimate their hypothesized causal paths; our findings support hypotheses H1 to H4 (Table 3). The relationship between attitude toward nonlocal

products and product quality is highly significant (0.000) with a beta estimate of 0.469. This implies that a one-unit change in quality will lead to a 0.469-unit change in consumer attitudes toward nonlocal products. Additionally, a one-unit change in religious conviction leads to a significant 0.39-unit change in attitudes toward nonlocal products.

Table 3: Path analysis

Attitude	Variable	Estimate	SE	CR	P
Attitude toward nonlocal products	← Religious conviction	0.039	0.068	0.576	0.021
Attitude toward nonlocal products	← Country of origin	–0.105	0.077	1.353	0.176
Attitude toward nonlocal products	← Product quality	0.469	0.105	4.462	***
Attitude toward nonlocal products	← Unavailability of local substitutes	0.003	0.084	0.036	0.972
Attitude toward nonlocal products	← Social status	0.129	0.179	0.723	0.469

Source: Authors' calculations.

Based on our dataset, Table 3 indicates that two factors, religious conviction and product quality, determine attitudes toward nonlocal products. Contrary to the literature, our findings fail to support the impact of country of origin, the unavailability of local substitutes, and social status.

4.4. Moderation

In this section, we test the two moderating variables: (i) the desire to emulate EDC lifestyles and (ii) consumer ethnocentrism. Table 4 shows that higher levels of consumer ethnocentrism moderate the relationship between product quality and attitudes toward nonlocal products. The estimate of 0.704 is highly significant, with a p-value of less than 0.05, which implies that a one-unit change in quality will have a 0.704-unit change in attitudes toward nonlocal products. This finding underscores the argument that consumers with a higher level of ethnocentrism tend to avoid buying nonlocal products because they feel it is unpatriotic and may create local unemployment (Shimp & Sharma, 1987).

Table 4: Moderator 1: Consumer ethnocentrism

Consumer ethnocentrism		Variable	Estimate	SE	CR	P
High level						
Attitude toward nonlocal products	←	Product quality	0.704	0.159	4.428	***
Attitude toward nonlocal products	←	Unavailability of local substitutes	–0.083	0.117	–0.711	0.477
Attitude toward nonlocal products	←	Social status	0.165	0.254	0.649	0.516
Low level						
Attitude toward nonlocal products	←	Product quality	0.237	0.133	1.784	0.074
Attitude toward nonlocal products	←	Unavailability of local substitutes	0.003	0.116	0.023	0.982
Attitude toward nonlocal products	←	Social status	0.088	0.248	0.354	0.723

Source: Authors' calculations.

Table 5 shows that respondents with less desire to emulate EDC lifestyles ("low desire for product") significantly moderate the relationship between brand quality and attitudes toward nonlocal brands. A unit change in the quality of the product will lead to a 0.665-unit change in consumer attitudes toward the product. The literature supports consumers' preference for brands produced by economically advanced countries based on the assumption that these products are of better quality (Lumpkin & Crawford, 1985).

Table 5: Moderator 2: Desire for EDC lifestyle

Desire for product		Variable	Estimate	SE	CR	P
Low						
Attitude toward nonlocal products	←	Product quality	0.665	0.159	4.191	***
Attitude toward nonlocal products	←	Unavailability of local substitutes	–0.105	0.097	–1.085	0.278
Attitude toward nonlocal products	←	Social status	–0.060	0.185	–0.324	0.746
High						
Attitude toward nonlocal products	←	Product quality	0.282	0.124	2.277	0.053

Desire for product		Variable	Estimate	SE	CR	P
Attitude toward nonlocal products	←	Unavailability of local substitutes	0.005	0.117	0.046	0.963
Attitude toward nonlocal products	←	Social status	0.002	0.316	0.006	0.995

Source: Authors' calculations.

5. Discussion and Conclusion

The aim of this study was to add to the existing literature on consumer behavior in developing countries with respect to attitudes toward nonlocal products. It has contributed to the literature on consumer behavior toward nonlocal products in Pakistan by employing two moderating variables: the desire to emulate EDC lifestyles and consumer ethnocentrism.

We find that perceived quality has a significant and positive impact on attitudes toward nonlocal products. This finding supports the literature: consumers place a higher value on nonlocal brands because they assume that these brands are of better quality and carry greater prestige (Nguyen et al., 2005; Steenkamp et al., 2003). Social status does not appear to have a significant impact on attitudes toward nonlocal products. This may be because some consumers associate local products with greater prestige than nonlocal products (de Mooij & Bovenberg, 1998). Local brands tend to reflect local cultural values and represent genuineness and social standing (Ger & Belk, 1999).

Our findings point to an inverse relationship between country of origin and attitudes toward nonlocal products. A probable reason for this is that cultural dimensions such as individualism and socialism also influence the country-of-origin effect on attitudes toward nonlocal products (Gürhan-Canli & Maheswaran, 2000), which we have not included in this study. The negative relationship between religious conviction and attitudes toward nonlocal products indicates that many consumers are likely to avoid buying nonlocal brands out of a strong sense of religiosity. Moreover, this will vary depending on the strength of the consumer's religious conviction (Mukhtar & Butt, 2012).

We find that consumers with a higher level of ethnocentrism moderate the relationship between the quality of a product and attitudes toward nonlocal products. The relationship is highly significant when conducting the statistical analysis on AMOS. The literature supports this

finding based on the argument that ethnocentric consumers avoid buying nonlocal products out of a sense of patriotism and the belief that such products affect opportunities for local employment (Shimp & Sharma, 1987).

Consumers with less desire to emulate EDC lifestyles moderate the relationship between the quality of a product and attitudes toward nonlocal products. This relationship is highly significant and consistent with studies that find that consumers prefer to buy products produced by economically advanced countries because they feel such products are of better quality (Lumpkin & Crawford, 1985).

Our findings are, however, limited by the representativeness of the sample used. The study was conducted in Lahore using convenience and snowball sampling methods, which implies that its findings cannot be generalized across Pakistan. Future research on this subject could, therefore, take into account not just the culture of the society being studied, but also cross-cultural comparisons of consumer behavior. Additionally, while we have employed cross-sectional data and examined causal factors with hypotheses based on individuals' self-reported opinions about their consumption behavior, future research could use a combination of different methodologies (quantitative and qualitative) and more objective methods of data collection, such as experiments.

A key implication of this study is that multinational firms should initiate cooperative ventures with domestic firms or set up overseas subsidiaries to regulate the impact of ethnocentricity, which is important to manage. Marketers in Pakistan should emphasize the quality of their products in order to remain competitive in relation to global companies operating in local markets. Managers and marketers should also be aware of how strong a role religious conviction might play in consumer behavior toward their products (see Mokhlis & Spartks, 2007; Khraim, 2010).

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Appendix

Questionnaire

Items 5 to 28 were measured on a Likert scale of 1 ("strongly disagree") to 5 ("strongly agree").

1. Gender
2. Age
3. Level of education
4. Do you use international brand products?
5. If an international brand product and a national brand product cost the same, would you prefer the international brand product?
6. People buy international brand products in order to be accepted by a particular social group. Do you agree?
7. Do you buy foreign products in order to be accepted by a particular social group?
8. Overall, how would you rate the quality of foreign brands?
9. Do you think foreign brands are of better quality than local brands?
10. Are all the brands you consume easily available for purchase?
11. Have you seen advertisements in Pakistan (magazines, radio, or TV) for all the brands you consume?
12. Are you always aware of a product's country of origin?
13. When many equivalent products (e.g., Sony, Panasonic) are available, do you prioritize your purchases on the basis of country of origin?
14. Would you refuse to purchase a product without knowing its country of origin?
15. When purchasing a product, do you believe that the country of origin determines the product's technological aspects?
16. Do you firmly believe that the country of origin determines the quality of a product?
17. Country of origin reduces the search for products. Do you agree?

18. When purchasing a new product for which you do not have sufficient information, do you purchase the product on the basis of its country of origin?
19. When purchasing an automobile, do you always try and determine its country of origin?
20. When purchasing a TV, do you always try and determine its country of origin?
21. When purchasing a mobile telephone, do you always try and determine its country of origin?
22. When purchasing cosmetics, do you always try and determine their country of origin?
23. Do you feel pleasure and satisfaction in following Islamic teachings?
24. Do you feel pleasure in seeing others follow Islamic teachings?
25. To what extent do you admire the lifestyles of people living in economically developed countries, such as the US or in Western Europe?
26. Purchasing foreign products is un-Pakistani. Do you agree or disagree?
27. Pakistanis should not buy foreign products because it hurts local businesses and causes unemployment. A real Pakistani should always buy Pakistani-made products. Do you agree or disagree?
28. It is not right to purchase foreign products. Do you agree or disagree?

The Lahore Journal of Business
3 : 1 (Autumn 2014): pp. 55–74

Knowledge Management Practices in Pakistan's Telecom Services Sector

Danial Hassan*

Abstract

Employee turnover has become a serious problem in knowledge-intensive industries such as telecommunications, where the resulting knowledge loss affects process safety and quality. This study examines knowledge management practices in Pakistan's telecom sector and argues that the impact of knowledge loss could be mitigated through knowledge management. Based on a structured questionnaire administered online to a sample of telecom operators in Pakistan, the results indicate the absence of knowledge management as a strategic response to knowledge loss. Nonetheless, the presence of a young, educated workforce, a strong cooperative culture, and sound ICT provision could be leveraged to build successful knowledge management systems in this sector.

Keywords: employee turnover, knowledge loss, telecommunications, Pakistan, knowledge management.

JEL classification: M10, M14, M19.

1. Introduction

Employee turnover is associated with the loss of knowledge, which, in turn, affects process safety and quality when errors are perpetuated. To prevent this, a system is needed to accumulate and store knowledge as it develops so that, whenever needed, other employees can easily access it and help reduce process errors (Chosnek, 2010). The retention of technically skilled labor is a serious problem in Pakistan, especially in the information technology (IT) sector where technological changes are rapid and "brain drain" is widespread (Pakistan, Ministry of Science and Technology, 2000).

The telecommunications sector was liberalized in 2003 to reduce the gaps in access to technology among different sections of society. To some extent, this policy followed the vision of the former secretary general of the

* Department of Science and Technology Studies, Faculty of Science, University of Malaya (email: de.danial@yahoo.com).

United Nations, Kofi Annan, who at Telecom '99 had observed: "People lack many things: jobs, shelter, food, healthcare, and drinkable water. Today, being cut off from basic telecommunication services is a hardship almost as acute as these other deprivations, and may indeed reduce the chances of finding remedies to them." Indeed, in Pakistan it is common to see a poor man (who may not have access to basic health services or drinkable water) driving a donkey cart while speaking into his Nokia handset (BBC, 1999).

Notwithstanding the rapid growth of the country's telecom industry (see International Telecommunication Union, 2006), the literature has shown that employee turnover remains a key concern (see Shoaib, Noor, Tirmizi, & Bashir, 2009; Rana, Salaria, Herani, & Amin, 2009). Turnover is especially serious in knowledge-intensive industries such as telecom services (Chase, 1997), where companies stand to lose not only their employees, but also the knowledge they have accumulated during their working years (see Scalzo, 2006; Massingham, 2008).

Several studies suggest that knowledge management (KM) is a viable solution to the problem of knowledge loss (see Natarajan & Shekhar, 2001; Tiwana, 2002; Peters, 2007; Saunders, 2007). This study aims to examine knowledge loss and KM practices in Pakistan's telecom sector. In so doing, we follow Smith (1989) and Weiss (1989), who note that the first step in managerial problem solving and policy formulation is to identify the problem. In this context, Tiwana's (2002) implementation strategy for KM entails "analyzing and accounting for what is already in place" in order to "identify critical gaps in the existing infrastructure" and thereby "build on what already exists."

Given the dearth of literature on the organizational dynamics of telecom service providers in Pakistan, especially in the context of KM, this study provides a useful reference for planning and discussion among policymakers and regulators.

2. A Review of the KM Literature

Lank (1997) argues that several factors make it necessary for firms to manage their knowledge and retain their expertise as important assets in relation to their competitive advantage. These include the speed of change in and intensity of competitive environments, the boom in service-based industries, and the development of IT.

Knowledge and expertise are now seen as the most valuable asset of firms competing globally (Demarest, 1997). The effective management and coordination of knowledge is thus essential (Wiig, 1994). Organizations must create, capture, harvest, share, and apply their knowledge and expertise to remain competitive (Zack, 1999). Prusak (1996) suggests that the only factor that gives a firm a competitive edge and is sustainable is what the firm knows, how it leverages what it knows, and how fast it can acquire new knowledge.

KM comprises a number of key aspects. One of these is the process of capturing an organization's collective knowledge—whether it is encoded in electronic form or hard copy or resides in the organization's workers—and channeling it to wherever it can help produce the largest return (Hibbard, 1997). Another aspect is the orderly and explicit building, renewal, and application of knowledge to maximize an enterprise's knowledge-related effectiveness and returns (Wiig, 1997). Finally, KM also implies ensuring that the right knowledge reaches the right people at the right time, enabling them to make better decisions (Petrash, 1996).

As with any other management discipline, KM has attracted criticism (see Mårtensson, 2000; Wilson, 2002), especially with regard to a conceptual understanding of knowledge, the lack of a uniform definition, and tools for measuring knowledge. In the context of this study, we clearly assume that engineers working on telecom networks acquire new and explicit knowledge, which, if recorded and shared, could help ensure smoother network operations. Since such knowledge is usually stored in the form of personal notes, it is lost to the firm when the employee leaves.

3. Research Methodology and Dataset

A 46-item structured questionnaire was developed to collect data for this study. The survey was adapted from Kosilov's (2008) study of KM self-assessment and comprises seven sections, each of which is designed to measure the strength of a functional category related to KM (Table 1).

Table 1: Functional categories of survey

Functional category	Questions
Training and human performance improvement	5–11
Methods, procedures, and documentation	12–17
KM technology	18–23
Approaches to capturing knowledge	24–27
Management for KM	28–32
Human resource planning	33–37
Culture of organization	38–46

Source: Adapted from Kosilov (2008).

Questions 1–4 refer to demographic information such as age, education, experience, and employer. Questions 5–46 are measured on a five-point Likert scale where 2 = "strongly agree," 1 = "agree," 0 = "neutral," –1 = "disagree," and –2 = "strongly disagree." The data are presented in the form of percentage distributions with simple averages for individual items (see McCall, 2001, for an analysis of the Likert scale).

The survey was administered online to members of the Zumbeel[1] Yahoo group, based on convenient sampling. Only the responses received from those telecom engineers currently working in Pakistan were selected. In all, 437 engineers responded, of which 97 responses were discarded because the respondents were not Pakistan-based; 340 responses were thus selected for analysis.

Table 2 presents demographic information on the survey participants. More than half the respondents are aged 25–29 (54 percent), which is as expected, given the age of the industry (the telecom sector was liberalized in 2003). The second largest group aged 30–35 comprises mostly people in managerial positions. All the respondents have professional degrees in computer science, telecommunication engineering, or electrical engineering; only 16 percent have postgraduate degrees. The survey represents all the major telecom service providers. The majority of respondents have more than one year's experience; only 6 percent have less than a year's experience.

[1] Zumbeel (www.zumbeel.org) was initially set up as a Yahoo group in 2000 and is now the largest information portal of the telecom industry in Pakistan. Approximately 14,000 website members are of Pakistani origin.

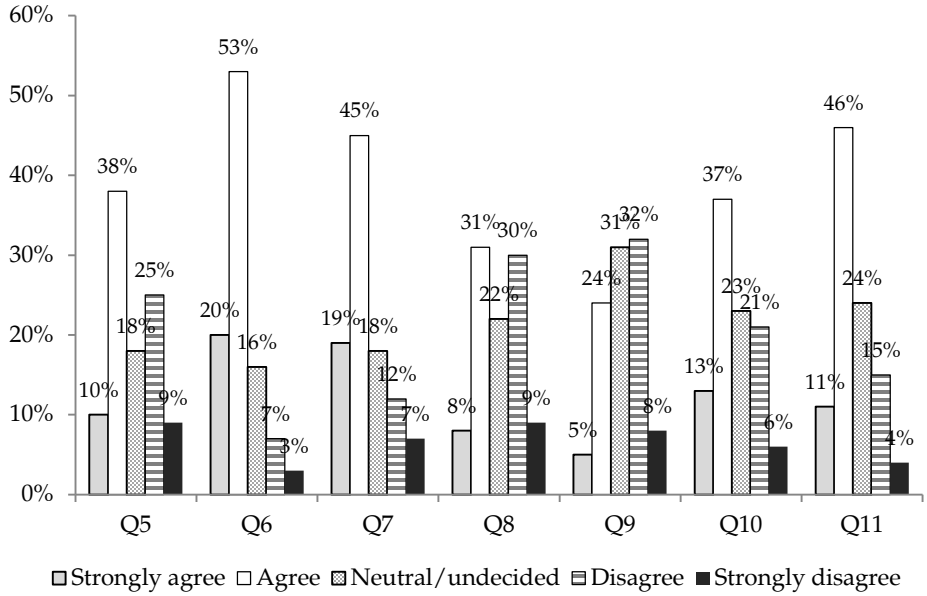
Table 2: Demography of survey respondents

Age	%	Education	%	Organization		Experience	%
20–24	9	Undergraduate	84	PTCL	59	< 1 year	6
25–29	54	Postgraduate	16	Mobilink	70	1–3 years	28
30–35	28			Ufone	42	4–7 years	41
> 35	4			CMPak	22	8–11 years	17
				Telenor	53	≥12 years	8
				Warid	46		
				TeleCard	29		
				Worldcall	19		
				Total	**340**		

4. KM Practices in Pakistan

Figure 1 presents the results for the training and human performance functional category. As can be seen, most respondents agree that the training they received on recruitment provided relevant knowledge, although the evidence for systematic training programs is weak, with an average of 0.14 (Table 3, Q5). This is consistent with Muhammad, Aurangzeb, and Tarique (2009) who find that telecom companies in Pakistan appear reluctant to train new recruits on the grounds that it incurs additional expense.

Figure 1: Results for training and human performance



Q5: Systematic training programs for engineers.

Q6: Training programs provide relevant knowledge.

Q7: Training tools such as simulations, multimedia, etc.

Q8: Competence evaluated regularly.

Q9: Refresher courses carried out to maintain competence.

Q10: Coaching and mentoring approaches to support knowledge sharing.

Q11: Training provides sufficient knowledge for job performance.

Regular refresher training programs and competence evaluation score the lowest in this category with an average of –0.14 and –0.01 (Table 3, Q9 and Q8), respectively. Competence evaluation is key to increasing employees' productivity so that training programs can be tailored accordingly (Dransfield, 2000). The lack of competence evaluation points to the lack of systematic training programs. Such training is necessary, given that it is rarely provided at colleges and universities. While telecom companies may have no choice but to provide some form of training, the emphasis appears to be on unsystematic, on-the-job training programs.

Telecom operations do not leave much room for trial and error, making it important to train engineers to identify and locate problems and determine and apply the correct solutions. Solutions based on trial and

error are likely to cause loss of revenue and reputation (see Bigelow, 2002, for a discussion of operational excellence).

Table 3: Average scores for survey questions 5–46

Q.	Average	Q.	Average	Q.	Average	Q.	Average
5	0.147727273	16	0.818181818	27	0.068181818	38	0.329545455
6	0.806818182	17	-0.215909091	28	0.238636364	39	-0.090909091
7	0.568181818	18	0.568181818	29	0.238636364	40	-0.204545455
8	-0.011363636	19	1.113636364	30	0.079545455	41	0.215909091
9	-0.147727273	20	0.500000000	31	0.000000000	42	0.488636364
10	0.272727273	21	0.818181818	32	0.056818182	43	0.329545455
11	0.465909091	22	0.647727273	33	-0.181818182	44	0.102272727
12	0.443181818	23	0.511363636	34	-0.295454545	45	0.420454545
13	0.420454545	24	0.000000000	35	-0.215909091	46	0.284090909
14	0.238636364	25	-0.022727273	36	-0.375000000		
15	0.159090909	26	0.000000000	37	-0.215909091		

Source: Author's calculations.

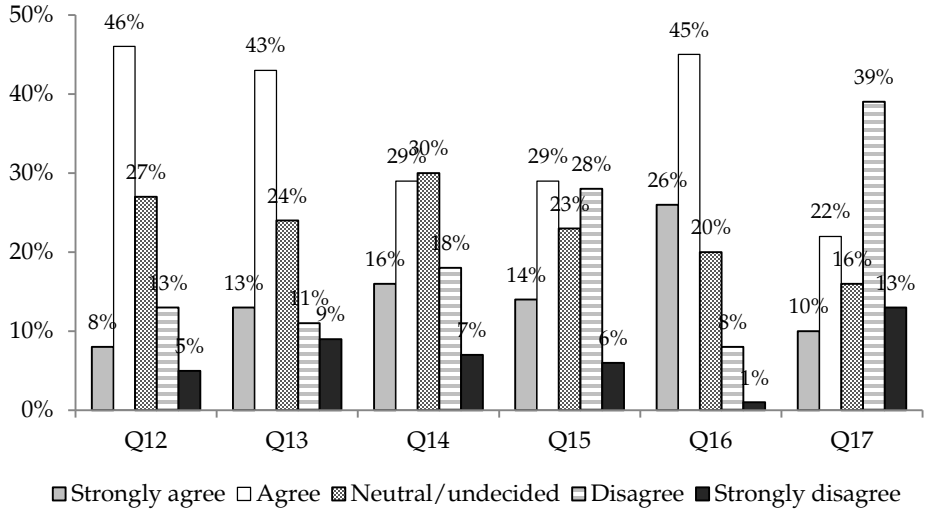
Figure 2 shows that nearly 70 percent of the respondents agree that engineers are capable of solving problems and creating new knowledge—a finding that is consistent with studies that identify the presence of a talented workforce in Pakistan (see Aziz, Khan, & Aziz, 2008). Network operations in telecom companies entail engineers working in shifts over 24 hours, seven days a week. Any change or problem in the network must be communicated to those engineers who are to work the next shift, for which purpose documentation is necessary. This can take the form of verbal communication, emails, and shift rosters.

Our results indicate that documentation and learning-by-doing are formal activities within network operations. However, there is little job rotation for the purpose of sharing network knowledge among different functional departments. Job rotation helps create informal networks within the organization, which facilitates the flow of information.

Feedback concerning employees' experience is, however, recorded and applied to ensure smoother network operations. This is important, given the sensitivity of telecom network operations, the fact that there is no room for error, and that customers are able to maintain continuous contact with their service providers. Unlike other industrial operations where

customers are not always in contact with the company and machines can be stopped to resolve errors, in telecom operations stopping a machine would mean halting the service.

Figure 2: Results for methods, procedures, and document processes



Q12: Comprehensive methodology for learning from experience.

Q13: Feedback (internal and external) for operational experience.

Q14: Formal process for transferring best practices.

Q15: Planning activities to be effectively retrieved, shared, and utilized.

Q16: Engineers capable of creating new knowledge to resolve problems on their own.

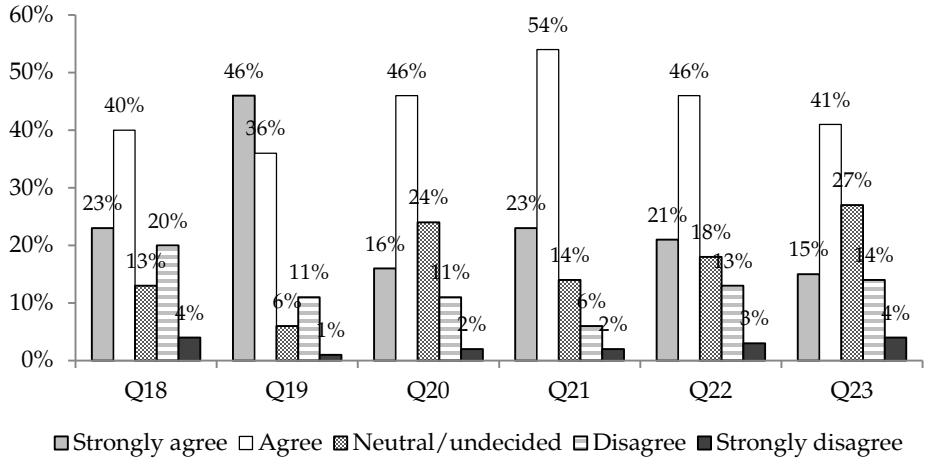
Q17: Job rotation practiced, e.g., between RF and BSS, and switching to learn from each other.

There is only weak evidence of any formal activity geared toward a KM-centric strategy. Q15 and Q14 in Table 3 indicate that the majority of respondents are either neutral or disagree as to whether formal processes are in place to transfer best practices. Network operations departments are usually managed by engineers who are more likely to adopt a scientific approach to management. The nature of operations also demands that certain practices exist by default, such as documentation and feedback. If formalized, these attributes could help create a better work environment and contribute to operational excellence.

Information and communication technologies (ICT) are a vital ingredient of successful KM systems (see Milton, Shadbolt, Cottam, & Hamersley, 1999; Sher & Lee, 2004). ICT hastens the creation of knowledge

and enables quicker delivery to remote places. Figure 3 presents the results for the functional category of technology. This category scores the highest, with an overall average score of 0.69 (Q18–Q23, Table 4).

Figure 3: Results for technology



Q18: Portals/Internet, knowledge search engines, knowledge databases, etc.

Q19: Adequate provision of laptops/computers and Internet to engineers.

Q20: Technology creates an institutional memory, accessible to all.

Q21: Technology links all members of the enterprise.

Q22: Information systems are realtime, integrated, and smart.

Q23: Technology is rapidly being put in the hands of employees.

The results reflect the fact that telecom companies provide ICT services and must, therefore, be technologically well equipped. Bloodgood and Salisbury (2001) observe that IT is associated with two capabilities: the codification of knowledge (e.g., databases) and the creation of networks. Most respondents agree that technology creates an "institutional memory" (Q20, Figure 3) that is universally accessible. It also links the members of an organization, thus creating networks for the flow of knowledge and information. Creating an institutional memory is at the core of KM systems (see van Heijst, van der Spek, & Kruizinga, 1997; Dieng et al., 1999), almost all of which rely on a database of lessons learned and best practices.

The provision of IT facilities such as laptops/computers and Internet access is deemed satisfactory: these facilities not only improve employees' effectiveness, but they also connect colleagues and track network changes. Telecom services often require engineers to spend considerable time maintaining and monitoring networks; adequate IT

facilities allow them to remain mobile and work remotely while connected to the network. This makes the company's institutional memory more effective, reduces the time spent on problem solving, and improves employees' quality of life at work.

Table 4: Averages of functional categories

Average of Q.	Functional category	Overall average
Q. 5–11	Training and human performance	0.300324675
Q. 12–17	Methods, procedures, and documentation	0.310606061
Q. 18–23	Technology for KM	0.693181818
Q. 24–27	Approaches to capturing knowledge	0.011363636
Q. 28–32	Management for KM	0.122727273
Q. 33–37	Human resource planning	-0.256818182
Q. 38–46	Culture of organization	0.208333333

Source: Author's calculations.

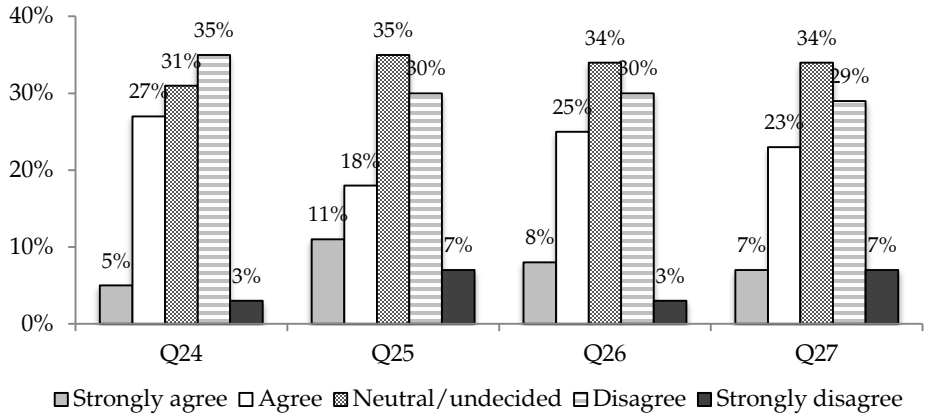
A large part of corporate knowledge is stored as either personal knowledge or personal records (Whyte, 1957; Zajonc & Wolfe, 1966; Sharp & Lewis, 1993) and may be lost due to employee turnover. This makes it important to identify which employees possess knowledge that is critical to the company (see Klein, 1998, on the importance of intellectual capital; Bontis & Nikitopoulos, 2002; Johanson, 2005). Q24 and Q25 (Figure 4) were framed to determine how this critical knowledge is identified in the telecom industry. However, the bulk of responses range from "disagree" to "neutral." This implies that respondents failed to understand the questions or were not aware how the management identified critical knowledge or disagreed that sources of critical knowledge were formally identified at all.

When asked if technology creates an institutional memory that is accessible by all (Q20, Figure 3), most respondents agree that it does. Q26 and Q27, however, focus on the effectiveness of this memory, with the results (primarily neutral) suggesting that the practice is largely absent irrespective of the respondents' level. Thus, there is weak evidence for the effectiveness of institutional memory (Q26, Figure 4).

Figure 4 also highlights respondents' conceptual understanding of management strategies: many respondents remain neutral or disagree. This may be because they are unfamiliar with management terminology and strategies, given that (i) only 16 percent have postgraduate degrees and (ii) telecom companies seem reluctant to provide technical training, much less

in management (Muhammad et al., 2009). This lack of conceptual understanding of management strategies has implications for education policy. Policymakers need to ensure that engineers have access not only to technical expertise and knowledge, but also to adequate knowledge about management principles. Companies also need to provide management-related training to facilitate the implementation of KM strategies.

Figure 4: Results for approaches to capturing knowledge



Q24: Identification of people with critical knowledge.

Q25: Methods to identify people, e.g., elicitation interviews.

Q26: Information is managed to facilitate search and retrieval.

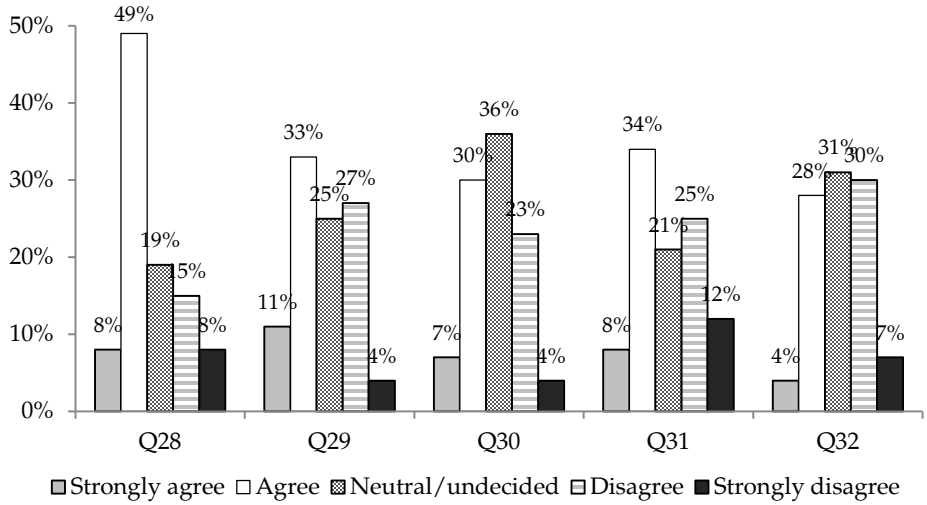
Q27: Processes to leverage captured knowledge.

Awareness of the importance of knowledge is different from building and using knowledge assets. Figure 5 (Q29) shows that telecom companies in Pakistan realize the importance of knowledge, but do not necessarily take steps to create knowledge assets. For example, if employees create knowledge and creating knowledge assets is one of the goals of a company, the achievement of this goal should be rewarded. The results do not, however, reflect a clear industry position with an equal proportion of respondents indicating that they agree and disagree.

Although we have also sorted the survey responses by organization to determine whether a particular company engages in formal knowledge creation, the size of the sample prevents a clear pattern from emerging. Knowledge creation activities appear to vary across teams in the same organization, perhaps because they are planned according to managers' personal preferences. Figure 5 indicates the absence of a conscious effort to turn learning into knowledge assets.

A company's management plays a key role in every phase of KM from knowledge creation to knowledge sharing (Chong, 2006). Apart from the consensus that management recognizes the importance of knowledge, the survey results do not suggest the presence or practice of formal activities geared toward KM, such as reward systems for knowledge capture. Many respondents remain undecided in this section of the survey, which could indicate the absence of such practices (although not necessarily that the managers concerned are weak).

Figure 5: Results for KM management



Q28: Management recognizes the importance of knowledge.

Q29: Learning from activities to build knowledge assets.

Q30: Formal process to transfer best practices.

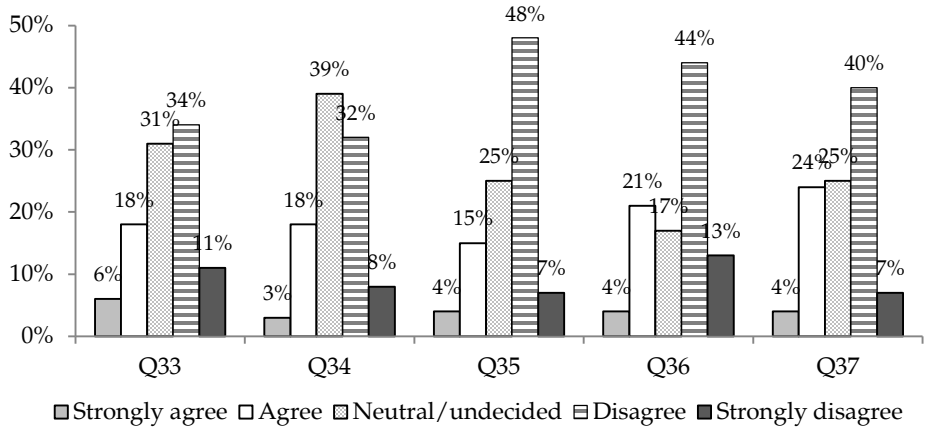
Q31: Remuneration based on contribution to organizational knowledge.

Q32: Learning as a strategic focus.

Figure 6 presents the results for the functional category of human resource planning and processes. Consistent with previous studies (see Budhwar & Debrah, 2001), the results indicate poor human resource planning. Given that human resources represent a significant repository of corporate knowledge, both succession planning and risk assessment are important to ensure that critical knowledge is transferred effectively to succeeding employees. As Table 3 (Q34 and Q35) shows, however, both these aspects correspond to weak scores (–0.29 and –0.21).

The poor performance of human resources from a KM perspective might be explained by the difficulty of measuring knowledge assets (Luthy, 1998; Stewart, 1997). As mentioned earlier, there is no universal definition of knowledge or uniform methods for measuring it (Mårtensson, 2000; Wilson, 2002). The results also suggest that many respondents are dissatisfied with the state of human resource planning in their organizations, which does not bode well for implementing successful KM.

Figure 6: Results for HR planning and processes



Q33: Comprehensive methodology for workforce planning.

Q34: Effective succession planning program in place.

Q35: Risk assessment (loss of critical knowledge and skills).

Q36: Program to develop new leadership/technical talent.

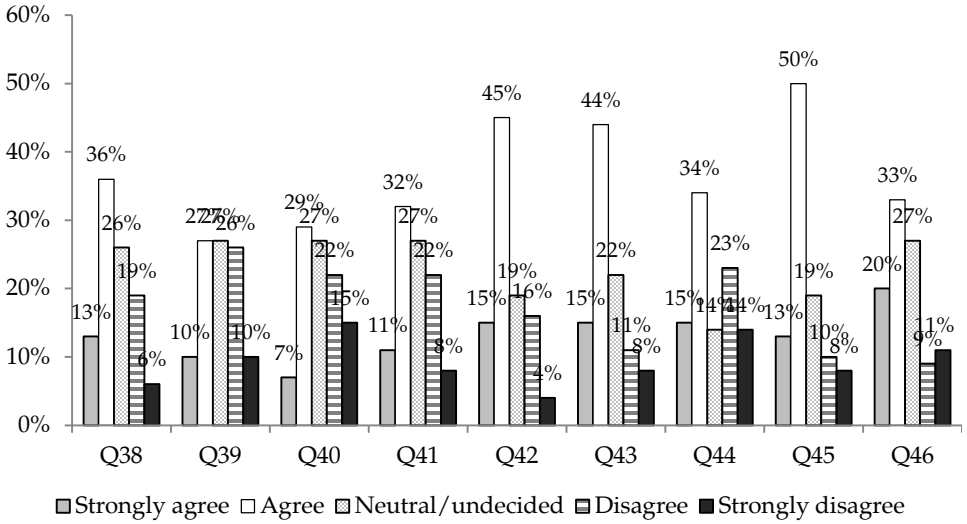
Q37: Job profiles to assess and monitor skills and competence needs.

The last functional category concerns the culture of the organization: KM projects are liable to fail in the absence of a company culture that facilitates KM (see De Long & Fahey, 2000). In order to create knowledge, companies need to develop an environment of trust that allows problems and issues to surface and solutions to be generated. Such an environment appears to be lacking (Q39, Figure 7). The adoption of a no-blame approach to reporting incidents/events scores a very low –0.09, on average. Recognition and reward score –0.20, on average (Table 3). Both these aspects are key components of organizational culture (see Ives, Torrey, & Gordon, 2002).

Other aspects of culture correspond to moderate scores, such as cooperation among employees and managers' capacity for listening to the

problems their employees face. Thus, while there is some evidence of organizational culture at the employee level, this needs considerable improvement at the management level.

Figure 7: Results for culture of organization



Q38: Organizational culture promotes the sharing and transfer of knowledge.

Q39: Open, no-blame approach to reporting incidents/events.

Q40: Sharing of knowledge in the organization is recognized and rewarded.

Q41: Managers lead by example.

Q42: Managers encourage trust, cooperation, and collaboration.

Q43: Managers listen to the problems faced by engineers.

Q44: Failure is seen as an opportunity to learn.

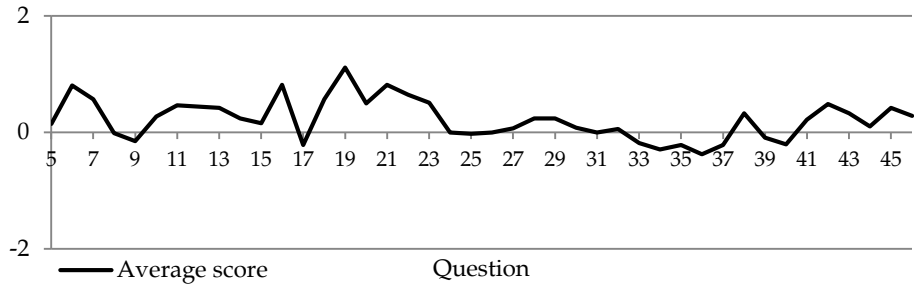
Q45: Employees are cooperative and helpful.

Q46: Knowledge sharing is seen as a strength and knowledge hoarding as a weakness.

Figure 8 plots the individual average score for each question and represents the industry's KM system. The irregularity of the graph suggests there is no uniform system of KM practices in place, although some aspects may score better than others.

Overall, the survey results reflect the findings of previous studies on the individual functional categories we have examined. This is keeping in mind that very few studies have focused on Pakistan's telecom sector post-liberalization.

Figure 8: Knowledge management line for telecom sector



5. Conclusion and Recommendations

Based on the results of this survey, there is little evidence that Pakistani telecom service providers have succeeded in leveraging KM practices to compensate for knowledge loss. However, the presence of a young, educated workforce, a positive work culture among engineers, and sufficient technology provision are strong indicators of potential success in the future implementation of KM systems.

One of the aims of this study was to underscore the need for policymakers and regulators in Pakistan to focus on strengthening the sector by expanding their role from conventional regulation to facilitating positive change. Developing an improved telecom infrastructure, for example, is necessary for economic development (Röller & Waverman, 2001). Business-friendly policies are already in place, as evident from the growth of the sector and the presence of global players such as Orascom, Telenor, Etisalat, and Qatar Telecom. However, the problem of knowledge loss must be resolved, for example, through multi-stakeholder dialogue and corporate training and observation for feedback.

Other areas of related research could include perceptions of KM in the telecom sector, which would lay the groundwork for the implementation of KM systems. Additionally, the study could be extended beyond network operations to analyses of other departments, including human resources, planning, finance, procurement, and management.

While policies adopted by the Pakistan Telecommunication Authority have enabled the expansion of the telecom infrastructure and made it possible for more and more people to afford telecom services, regulators need to improve the quality of services provided. This will mean involving all stakeholders and providing direction and support to telecom companies with regard to KM strategies.

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The Lahore Journal of Business
3 : 1 (Autumn 2014): pp. 75–97

Factors Influencing the Acceptance of Online Shopping in Pakistan

Samra Chaudary,[*] Sehrish Nisar,[**] Muhammad Abdul Rehman[***]

Abstract

The rapid growth of the Internet and its extended reach has helped developing countries adopt e-commerce, thus enabling consumers to make transactions worldwide. This study identifies the factors related to online shopping and examines consumer motivation and acceptance in this context. We employ exploratory factor analysis, structural equation modeling, and cluster analysis and find that Pakistani consumers behave very differently from consumers in Western countries or countries that have adopted online shopping on a wide scale. While factors such as convenience and trust are seen to affect consumer behavior, other variables such as perceived price and information availability are less importance. The study also examines the reasons for this deviation from typical consumer behavior.

Keywords: online shopping, acceptance, risk.

JEL classification: M30, M31, M39.

1. Introduction

The Internet serves not only as a marketing platform for many companies, but also as a source of information for consumers making purchase decisions. The rapid growth of e-commerce has prompted researchers to examine which factors motivate consumers to accept online shopping (Clemes, Gan, & Zhang, 2014). Ghaznavi (2013) notes that e-commerce has existed in Pakistan for some time and is still gaining traction with significant growth expected in the future. Chishti (2013) argues that social media have driven the rise in online shopping. There are over 100 online shopping websites operating in Pakistan and the bulk of this growth has occurred in the last two to three years. If it continues, e-commerce is likely to flourish in the country.

[*] Teaching fellow, Lahore School of Economics.
[**] Teaching fellow, Lahore School of Economics.
[***] Research assistant, Lahore School of Economics.

This study examines the factors underlying the acceptance of online shopping in Pakistan, drawing on the literature to identify these factors. Additionally, it incorporates detailed risk components, relative price, and the mediating factor of ease of use. Although other studies have looked at the risks associated with online shopping, we present a more detailed study of individual risk components, adding other variables to the framework. This allows us greater depth in examining why consumers opt for e-commerce.

While the literature has already identified the most common factors affecting consumer behavior in e-commerce, an important question to ask is whether all these factors necessarily apply to Pakistani consumers. This is important considering that e-commerce is still at an early stage and has yet to be widely accepted across the country. This study could prove useful in identifying not only consumer perceptions, but also in helping firms that are interested in adopting e-commerce to develop effective online retail strategies. In so doing, we combine the most relevant factors with any possible concerns a consumer might face when deciding to shop online. This helps provide a complete insight into how consumers behave. Given the dearth of research carried out in this area with reference to Pakistani consumers, the study's results could help large firms implement e-commerce more effectively.

Section 2 reviews the literature, Section 3 describes the methodology used, and Section 4 outlines the results of different techniques. Section 5 discusses the results obtained; Section 6 presents some managerial implications, limitations, and directions for future research.

2. Literature Review

This section discusses the literature based on each of the factors underlying the acceptance of online shopping.

2.1. Convenience

Convenience is defined as the time and effort saved when shopping and is a key motive for shopping online (Clemes et al., 2014); the intention to shop online increases in tandem with this factor (Swilley & Goldsmith, 2013). Consumers do not have to leave home and are not bound by a time constraint as online shopping provides round-the-clock service, leaving consumers free to shop at their convenience (To, Liao, & Lin, 2007). Our first hypothesis (H1) is that convenience has a positive relationship with the acceptance of online shopping.

2.2. Variety

Online stores often provide a wider selection of goods than conventional stores. There is no physical limit on the stock an online store can display on its website, nor does it need to create attractive window displays. Variety is thus an important reason motivating consumers to shop online (To et al., 2007; Clemes et al., 2014). Consumers who shop online regularly may find they are better able to evaluate the product variety available (Sin & Tse, 2002). Our second hypothesis (H2) is that variety has a positive relationship with the acceptance of online shopping.

2.3. Customization

Customization refers to the ways in which a particular website is tailored to its customers. The Internet provides one of the most suitable ways to personalize shopping such that customers can easily select their product specifications and packaging as required (To et al., 2007). Our third hypothesis (H3) is that customization has a positive relationship with the acceptance of online shopping.

2.4. Website Factors

Clemes et al. (2014) describe websites as storehouses of information that help customers search for information. Website factors refer to the design characteristics that facilitate online purchase, i.e., content and design. Content includes the particulars of the merchandise available on the website, while design refers to the way the information is displayed (Huizingh, 2000). The design of a website is important because it is a key motivator for consumers who choose to use a particular shopping website; poorly designed websites discourage online transactions. Wolfinbarger and Gilly (2001) note that content and design are fundamental considerations for sellers structuring their websites.

2.5. Ease of Use

Ease of use, the mediator variable in this study, is defined as the extent to which a person perceives that working with a certain program is likely to be effortless (Davis, 1989). Applications that are perceived as being easier to use than others have a greater probability of being more widely accepted. Linking this to the concept of online shopping, Pérez-Hernández and Sánchez-Mangas (2011) identify ease of use as one of the factors that affect online shopping. Sites that enable customers to choose a product online easily are likely to retain their attention longer and lead to a positive

purchase decision. Our fourth hypothesis (H4) is that website factors have a positive relationship with the acceptance of online shopping in the presence of the mediating variable, ease of use.

2.6. Trust

Kim, Yu, and Gupta (2012) define trust as the perception that a particular vendor is trustworthy. In this context, trust is the degree to which one expects that a website's up-to-date technology is likely to be dependable and credible (McKnight & Chervany, 2002). Gefen and Straub (2003) point out that the perceived safety of making online transactions is a vital reason that some purchasers use the Internet but do not engage in any transactions. Ha and Stoel (2009) maintain that trust, while crucial in business relationships, is even more important in online transactions. When making online purchase decisions, consumers are exposed to greater risk and uncertainty, and this is countered by their trust in a particular website.

Freathy and Calderwood (2013) highlight the role of trust in the process of choosing a specific online retailer. Kim, Yu et al. (2012) argue that, if a particular vendor is perceived to be trustworthy, this directly reduces the risk associated with online shopping. Chang, Cheung, and Lai (2005) carry out an empirical study that suggests there is a significant and positive relationship between trust and online shopping intentions. Our fifth hypothesis (H5) is that trust has a positive relationship with the acceptance of online shopping.

2.7. Information Availability

To et al. (2007) observe that information availability comprises any information regarding merchandise, shops, and sales campaigns, etc. The information provided on a particular website helps consumers make better and more efficient decisions. Moreover, the Internet itself provides numerous explanatory resources and search tools that can help customers make efficient shopping decisions. Research and information search intent denotes the level at which shoppers utilize online shopping carts as a way of accumulating information on any merchandise they are considering for purchase (Close & Kukar-Kinney, 2010). Our sixth hypothesis (H6) is that information availability has a positive relationship with the acceptance of online shopping.

2.8. Perceived Price

Chiang and Dholakia (2003) point out that customers' choice of shopping channels is affected by the perceived prices associated with a particular site. Online customers compare prices across the same product or service offered by different websites in order to make the most effective economic decision (Clemes et al., 2014). Since they cannot always remember the objective price of an item, customers tend to encode purchase prices in a way that is meaningful to them.

While there is a vast range of websites from which customers can choose and acquire price information, they are likely to make their decision on the basis of perceived price. Perceived price affects consumer purchase behavior by affecting the total utility of the product offered (Kim, Yu et al., 2012). Kim and Gupta (2009) suggest that purchasers are likely to take into account the referral rates provided by different merchants. Our seventh hypothesis (H7) is that perceived price has a positive relationship with the acceptance of online shopping.

2.9. Perceived Risk

Perceived risk is the anticipated negative consequence of making a particular purchase (Dunn, Murphy, & Skelly, 1986). E-commerce entails a greater degree of risk than traditional in-store shopping. An increase in overall perceived risk has a significant negative impact on attitudes toward online shopping. On the other hand, consumers are more likely to shop online when online stores provide sound security and privacy features (Clemes et al., 2014). Hong and Cha (2013) point out that shoppers perceive risk where earlier purchases have failed to meet their objectives. The uncertainty perceived by the customer in such a shopping decision determines the nature of the risk. Our eighth hypothesis (H8) is that perceived risk has a negative relationship with the acceptance of online shopping.

2.9.1. Performance Risk

Hong and Cha (2013) note that the risk associated with a product's performance is significant in the context of online shopping. Given that the product is not tangible, the customer must evaluate it based on the limited information available. There is an inherent risk in this because the consumer cannot examine the product physically before buying it (Bhatnagar, Misra, & Rao, 2000). This may discourage some consumers

from online shopping. On the other hand, some websites provide forums that enable consumers to interact with each other and record their experience of the product or service in question (Hong & Cha, 2013). Purchasers reduce the product's performance risk by buying well-known brands (Aghekyan-Simonian, Forsythe, Kwon, & Chattaraman, 2012).

2.9.2. Online Payment Risk

Hong and Cha (2013) identify online payment risk as a key consideration when evaluating the overall risk involved in online purchase. They point out that a number of surveys support this argument. Consumers may feel insecure about using online payment methods if they think there is a chance their confidential information and debit/credit card details might be recorded or exploited by hackers or Internet marketers without authorization.

2.9.3. Delivery Risk

Delivery risk is the risk that the purchased merchandise might be misplaced or shipped incorrectly as a result of inadequate online business expertise on the shipper's part (Hong & Cha, 2013). Consumers who feel they will be spending money on something that might not reach them may be reluctant to make purchases online.

2.9.4. Privacy Risk

Customers have to provide a certain amount of private information when accessing shopping websites. This can raise concerns that such information might be misused, creating consumer uncertainty and increasing the overall perceived risk. Additionally, privacy concerns strongly influence customers' perception of the vendor (Lian & Lin, 2008).

2.10. Acceptance of Online Shopping

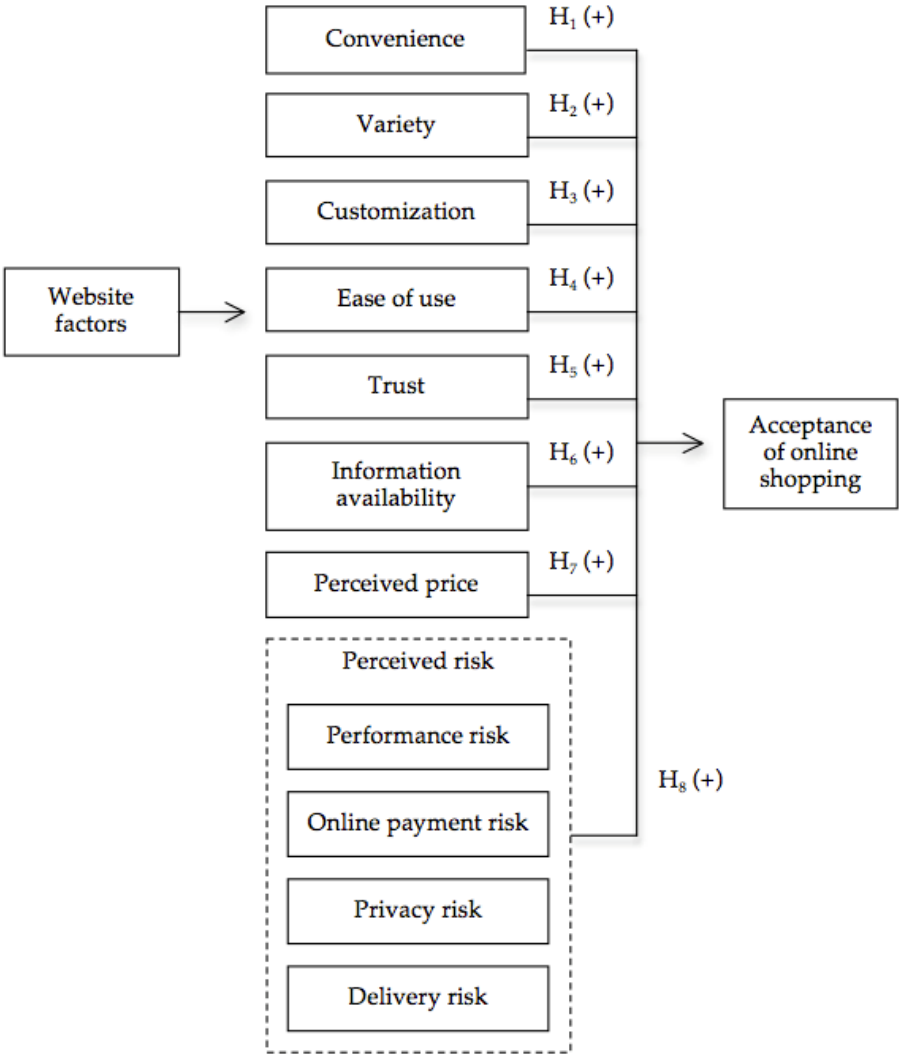
Online shopping as defined by Monsuwé, Dellaert, and de Ruyter (2004) is the application of online shopping websites by customers up until the transactional phase of buying and logistics. Liu and Forsythe (2011) argue that a key shortcoming of studies that focus on explaining acceptance behavior is that they concentrate on the initial use of a particular system. Awareness of the selection process in Internet shopping and of the attitudes of online customers is vital for firms to remain competitive in an online marketplace (Clemes et al., 2014).

3. Theoretical Framework

This section presents a theoretical framework for the study (see Figure 1) and is supplemented by the context below.

- **Respondents**. Respondents were selected on the basis of convenience sampling. This narrowed the scope and included respondents still at university or college and therefore not currently earning. Most respondents were from a high-income group corresponding to socioeconomic classes A and B—this may have played a factor in how they perceived online shopping and its associated risks. Most respondents were single, which may also have determined whether their needs were fulfilled through online shopping and how risky they considered e-commerce to be.
- **Location**. The data collected is mainly from Punjab. This raises the question as to whether the study would differ if carried out in other parts of the country, such as in Karachi, Pakistan's largest city.

Figure 1: Theoretical framework



- **Banking system**. Certain features of Pakistan's banking system can create barriers to shopping online, e.g., many banks do not offer an online shopping facility on their debit cards.
- **Economy**. The recent growth of online shopping has had an inflationary impact and pushed up the prices of certain products. Currency devaluation has had a similar effect. Additionally, the customs system in Pakistan is poorly administered. These factors have discouraged consumers from using e-commerce and placing orders on international websites.

- **E-commerce in Pakistan**. Domestic e-commerce operates differently from international e-commerce. In Pakistan, the most commonly used mode of payment is cash on delivery; consumers tend to avoid using credit cards. Emerging e-companies such as Homeshopping and Shophive offer cash-on-delivery services in multiple cities. This affects consumers' attitude to the risks associated with online shopping on Pakistani websites. Furthermore, such websites offer little flexibility.
- **Time**. The study was conducted at a time when the concept of online shopping had just begun to gain wider acceptance. Subsequent improvements in the operation of e-commerce imply that the results may be subject to change. As e-commerce continues to grow and it receives more support from financial institutions, the results are likely to become more positive.

4. Data and Methodology

This section describes the sample, measures, and methodology employed.

4.1. Sample Size

In determining an appropriate sample size, Shah and Goldstein (2006) show that small samples are associated with bias and low reliability. It is difficult to determine an adequate sample size for a structural equation model (SEM), which depends on a number of features. Keeping this in mind, the present study needs a minimum sample size of 200. Swilley and Goldsmith (2013) use 225 valid responses while Kim, Kim, and Park (2010) use 264. Accordingly, our sample comprises 221 respondents.

4.2. Measures and Methodology

The items in the study's structured questionnaire are measured on the Likert scale and are drawn from different studies (Table 1). The data has been analyzed for sample size characteristics and common method bias (using Harman's single-factor test). Following Lian and Lin (2008), we use varimax rotation for the exploratory factor analysis (EFA). The appropriateness of the sample size is checked using the Kaiser-Mayer-Olkin (KMO) test. The benchmark for sample adequacy is 0.7 or above. The total variance explained is compared with the benchmark of 60 percent. The rotated component matrix provides variables and items that are derived by the software along with their loadings, which are then compared with a benchmark of 0.45. Finally, Cronbach's alpha is computed to check internal consistency.

The results derived from the EFA are then further analyzed using a SEM, a measurement model employing confirmatory factor analysis (CFA), and a structural model employing path analysis. We use AMOS 21.0 to determine the validity and reliability of the constructs and to test the hypotheses. A number of measures are evaluated, including the average variance extracted (AVE), discriminant validity, and construct reliability. The benchmarks for AVE and construct reliability are 0.4 and 0.7, respectively.

It is important to analyze the fit indices of the measurement and structural models. The standalone indices reported include the CMIN/df (adjusted for degrees of freedom), goodness of fit (GFI), adjusted goodness-of-fit (AGFI), and the root mean square error of approximation (RMSEA). The incremental indices include the normed fit index (NFI), comparative fit index (CFI), Tucker-Lewis Index (TLI), and incremental fit index (IFI).

We follow Iacobucci's (2008) approach to testing for mediation rather than the popular Baron and Kenny approach, given that the latter is associated with a number of problems (see MacKinnon, Fairchild, & Fritz, 2007; Krause et al., 2010; Zhao, Lynch, & Chen, 2010). Iacobucci suggests that the SEM rules the Baron and Kenny approach. Testing for mediation requires an indirect significant effect, but should start with observing whether the direct effect is significant. A more rigorous test is the bootstrap test (at a 95 percent confidence interval), which is stronger than the Sobel test at a 95 percent confidence interval (Zhao et al., 2010).

Finally, a cluster analysis is carried out to evaluate uniformity among the respondents and assess how many fall into the same category. The respondents are divided into different segments based on their attributes (in turn, determined by their responses). This is important because respondents vary in terms of preference characteristics.

5. Results

This section discusses the results obtained from the study.

5.1. Sample Characteristics and Common Method Bias

The results indicate that 69.7 percent of the respondents fall in the age bracket of 18–25, while 129 respondents have an undergraduate degree. The sample is fairly equally distributed between women and men.

The benchmark for skewness and kurtosis is +/–2. The data indicate that the descriptive statistics are not skewed and only one variable—marital

status—surpasses the benchmark with a value of 2.339. In the case of kurtosis, the values of age and marital status exceed the benchmark, while that of gender is exactly equal to 2. While any deviations from normality may initially appear to be large, they are in fact immaterial. To ensure that there is no common method bias, we apply Harman's one-factor test. We find that no one construct explains more than 45 percent of the variance and the maximum variance achieved by a single construct is 23.7 percent.

5.2. Exploratory Factor Analysis

The initial data encompassed 13 latent variables measured using a total of 61 items. Table 1 gives the position of each item with its respective variable and loadings.

Table 1: EFA and alpha values

Variable and component	Standardized loading	Cronbach's alpha	Studies
Trust			
T2	0.844	0.899	Hong & Cha (2013)
T3	0.822		Kim et al. (2010)
T4	0.778		
T1	0.768		
T5	0.677		
Acceptance of online shopping			
AO2	0.845	0.913	Hong & Cha (2013)
AO3	0.835		Lian & Lin (2008)
AO1	0.797		
AO4	0.769		
Variety			
V5	0.796	0.847	Clemes et al. (2014)
V4	0.783		To et al. (2007)
V1	0.729		
V3	0.593		
V2	0.497		
Privacy risk			
PRR7	0.836	0.828	Ha & Stoel (2009)
PRR8	0.767		Smith, Milberg, & Burke (1996)
PRR6	0.755		

Variable and component	Standardized loading	Cronbach's alpha	Studies
PRR3	0.737		
PRR5	0.520		
Convenience			
C4	0.768	0.861	Swilley & Goldsmith (2013)
C3	0.681		Clemes et al. (2014)
C2	0.619		To et al. (2007)
C1	0.595		
C6	0.567		
Performance risk			
PR2	0.809	0.812	Hong & Cha (2013)
PR3	0.780		Liu & Forsythe (2011)
PR1	0.691		
PR4	0.633		
Ease of use			
EU3	0.781	0.784	Davis (1989)
EU4	0.778		
EU2	0.733		
EU1	0.632		
Delivery risk			
DR1	0.812	0.851	Hong & Cha (2013)
DR2	0.808		
DR3	0.767		
Online payment risk			
OR1	0.839	0.866	Hong & Cha (2013)
OR2	0.828		
OR3	0.693		
Website factors			
WF4	0.793	0.832	Clemes et al. (2014)
WF5	0.781		Ha & Stoel (2009)
WF3	0.699		
Customization			
CS3	0.820	0.794	To et al. (2007)
CS2	0.752		
CS4	0.737		
Information availability			
IA2	0.632	0.836	To et al. (2007)

Variable and component	Standardized loading	Cronbach's alpha	Studies
IA3	0.623		
IA1	0.607		
Perceived price			
PP1	0.792	0.633	Kim, Yu et al. (2012)
PP2	0.768		

Source: Authors' calculations.

Given a factor loading threshold of 0.45 (Clemes et al., 2014), the final analysis is based on 49 items, all of which have a factor loading of above 0.45. Table 1 also reports the computed Cronbach's alpha for each variable, where acceptable values should be above 0.6 (Lian & Lin, 2008; Liu & Forsythe, 2011; Clemes et al., 2014). The results indicate that most of the variables have a high alpha value, which confirms the study's reliability.

Black and Porter (1996) propose a threshold of 0.8 to assess the appropriateness of the sample, based on the KMO test. Our computed value of 0.861 indicates that the sample is adequate. The result obtained for Bartlett's test of sphericity is also significant.

5.3. Measurement Model

CFA entails associating the latent variables with their measured variables by restricting the former to load with their respective measured variables such that they are allowed to correlate. Table 2 evaluates the standardized loading of each item under the variables concerned. All the items meet the benchmark value of 0.45. The AVE is greater than 0.4, and thus also acceptable (Verhoef, Franses, & Hoekstra, 2002; Wu, Chen, Chen, & Chen, 2014). Subramanian et al. (2014) accept a reliability measure as low as 0.6171. Accordingly, all the values we have computed are deemed acceptable. We also find that the squared covariances are less than the AVE, indicating that discriminant validity holds.

Table 2: CFA loadings, reliability, and validity

Variable	Item	Standardized loading	AVE	CR	DV
Trust	T3	0.88	0.639	0.898	0.799
	T2	0.84			
	T4	0.81			
	T1	0.75			
	T5	0.71			
Variety	V5	0.90	0.587	0.875	0.766
	V4	0.85			
	V2	0.71			
	V3	0.70			
	V1	0.64			
Convenience	C1	0.79	0.540	0.854	0.735
	C2	0.78			
	C3	0.76			
	C4	0.67			
	C6	0.67			
Perceived price	PP1	0.78	0.484	0.648	0.696
	PP2	0.59			
Customization	CS3	0.87	0.585	0.807	0.765
	CS2	0.75			
	CS4	0.66			
Ease of use	EU2	0.74	0.477	0.784	0.690
	EU3	0.71			
	EU1	0.69			
	EU4	0.62			
Website factors	WF4	0.83	0.626	0.834	0.791
	WF5	0.78			
	WF3	0.76			
Information availability	IA1	0.85	0.635	0.839	0.797
	IA2	0.80			
	IA3	0.73			
Perceived risk	OR	0.73	0.431	0.747	0.656
	DR	0.72			
	PRR	0.67			
	PR	0.48			
Acceptance of online shopping	AO1	0.92	0.747	0.922	0.865
	AO2	0.86			
	AO2	0.86			
	AO4	0.82			

Source: Authors' calculations.

Shah and Goldstein (2006) argue that assessing a model's fit takes on increased complication. The values in our model for these measures are given below. These values are deemed acceptable and the overall model is, therefore, judged to be satisfactory (see Zarei, Zainalipour, Mohammadi, & Zare, 2013).

Standalone indices		**Incremental indices**	
CMIN/df	1.497*	CFI	0.911
GFI	0.789	TLI	0.902
AGFI	0.758	NFI	0.776
RMSEA	0.050	IFI	0.913

Note: * = insignificant p-value.

5.4. Structural Model

The structural model analyzes the relationships among the variables and the significance of these relationships (Table 3). At this point, we are able to reject or accept the study's hypotheses. The results suggest that convenience, variety, and trust have a significant positive relationship with the acceptance of online shopping. This is in line with hypotheses H1, H2, and H5, respectively. We therefore accept these three hypotheses. The hypotheses for the variables customization, information availability, perceived price, and perceived risk are, however, rejected.

Table 3: Structural model and hypothesis testing

	Hypothesis and relationship	**Predicted sign**	**Estimate (β)**	**P-value**	**Decision**
H1	Convenience → acceptance of online shopping	+	0.750	***	Accept
H2	Variety → acceptance of online shopping	+	0.218	***	Accept
H3	Customization → acceptance of online shopping	+	-0.082	0.251	Reject
H4	Website factors → ease of use	+	-0.119	0.197	No mediation
	Ease of use → acceptance of online shopping	+	0.015	0.832	
H5	Trust → acceptance of online shopping	+	0.193	0.010	Accept

	Hypothesis and relationship	Predicted sign	Estimate (β)	P-value	Decision
H6	Information availability → acceptance of online shopping	+	0.009	0.896	Reject
H7	Perceived price → acceptance of online shopping	+	-0.074	0.433	Reject
H8	Perceived risk → acceptance of online shopping	–	0.055	0.607	Reject

Note: *** $p < 0.01$.
Source: Authors' calculations.

Table 3 shows that the relationships are not significant in these cases. Moreover, perceived risk has the opposite relationship with the acceptance of online shopping (relative to the predicted sign). The relationships between website factors and ease of use, and between ease of use and the acceptance of online shopping are also insignificant (see Section 5.5). The computed values of the model fit indices for the path analysis are given below.

Standalone indices		Incremental indices	
CMIN/df	1.976*	CFI	0.819
GFI	0.690	TLI	0.807
AGFI	0.657	IFI	0.821

Note: * = insignificant p-value.

Apart from the GFI and AGFI, all the other indices are acceptable (see Zarei et al., 2013). The R^2 value for the acceptance of online shopping is 0.47, indicating that the variable has 47 percent explanatory power in the model. Ease of use, however, has weak explanatory power (1 percent).

5.5. Mediation

Clemes et al. (2014) find a direct relationship between website factors and online shopping in the Chinese business context. We introduce a mediator, however, to determine if the relationship is strengthened or weakened. The results in Table 4 indicate that ease of use does not function as a mediator in this relationship, which itself remains highly significant while the indirect relationship is insignificant. We therefore reject H4.

Table 4: Mediating effect

Relationship (ease of use as a mediator)	Direct, without mediator	Direct, with mediator	Indirect, with mediator	Results
Website factors → acceptance of online shopping	0.001	0.001	0.183	No mediation

Source: Authors' calculations.

5.6. Cluster Analysis

In order to segment the market into different groups or clusters, we carry out a hierarchal cluster analysis (see Yen, da Gama, & Rajamohan, 2008). Four clusters are generated using K means. Cluster 1 comprises 23 respondents who associate online shopping with a high level of risk and thus do not find the prospect attractive. This cluster is titled "no acceptability." Cluster 2 is composed of 43 respondents who exhibit the most positive attitude toward online shopping, i.e., they consider online shopping to be convenient and trustworthy, while the risk is seen to be small and unimportant. The cluster is titled "maximum acceptability."

Cluster 3 combines the attributes of the first two clusters: respondents want to shop online but consider doing so highly risky. This cluster contains 65 respondents and is titled "fearful acceptability." Cluster 4, with 90 respondents, is neutral about every aspect of online shopping, whether positive or negative, and is titled "neutral acceptability."

6. Discussion

Convenience is the key motivator for consumers who choose to shop online (Clemes et al., 2014). Our research clearly shows that, in line with the earlier hypothesis, convenience has the highest positive relationship with the acceptance of online shopping. Swilley and Goldsmith (2013) note that convenience in this context implies an easier shopping experience, freedom of time, and less effort.

The second underlying motivation for online shopping is variety (Clemes et al., 2014). To et al. (2007) show that shops may be reluctant to stock products catering to niche markets, which leaves a portion of the market disappointed. However, a wider range of products eventually leads to better decision-making (Keeney, 1999). When consumers find they can make better purchase decisions through e-shopping, this creates greater

motivation to purchase. Variety ultimately has a positive impact on the acceptance of shopping online, which the study's results support.

Gefen and Straub (2003) suggest that trust is another major concern when consumers decide whether to make a purchase over the Internet. In the absence of physical interaction with the seller, the risk to the buyer increases. Ha and Stoel (2009) support this argument, indicating that the importance of trust increases in online shopping. This also holds true for Pakistan. Our results imply that there is a significant positive relationship in this case, although the impact is not as large as for the variables convenience and variety.

Website factors play a key role in e-shopping (Clemes et al., 2014) and, traditionally, have had a direct relationship with the acceptance of online shopping. We find that the direct relationship is significant and that mediation plays no role. This is supported by the existing literature. Ease of use alone does not, therefore, affect the relationship.

Pakistan-based websites offer little, if any, flexibility, e.g., customers do not have the option to alter the available products. On the other hand, international shopping websites that might offer customization may not deliver to Pakistan. Consumers, therefore, adjust without the option to customize. As a result, we reject the hypothesis concerning customization.

The relationship with perceived price is negative and insignificant. This can be attributed to the fact that most of our respondents were from a higher income group for which price would not have been as important a factor. The negative relationship can be explained by increased prices due to inflation and currency fluctuations, such that customers no longer perceive e-commerce as being cheaper than conventional shopping.

Although information availability has a positive impact, its significance is too low for us to accept the hypothesis. Despite the high level of information available, consumers remain inclined to purchase from known shops. This may be due to the importance of interpersonal relations among Pakistani consumers, who rely on the convenience that traditional shop owners are willing to provide. This limits their reliance on the Internet to serving as a source of information rather than purchase.

Finally, perceived risk was measured using four latent variables: performance risk, online payment risk, delivery risk, and privacy risk. Given that most Pakistani companies offer cash on delivery, this directly

reduces the four risk components. Moreover, financial institutions do not enable online shopping with debit cards, which also decreases the risk. Online firms such as i-Shopping have started to provide one-year warranties, which reduces performance risk. The overall risk factor is insignificant because there are enough channels provided to avoid these risks. If online shopping in Pakistan were the same as it is in Western countries, there would be more scope for studying the potential risks.

7. Limitations, Future Research, and Managerial Implications

In attempting to study the behavior of Pakistani consumers toward online shopping, there are still some issues to consider. First, the structure of online shopping in Pakistan is very different from that in the West, which implies that the variables we have used are not necessarily suitable in each case. Second, the data was collected through convenience sampling and was restricted to a specific geographical area—this may have affected the results. Third, the study is based on the perception of consumers toward online shopping with no distinction between users and nonusers. Fourth, the current state of the economy does not necessarily favor high consumer spending. This, accompanied by the devaluation of the Pakistani rupee, may have discouraged many consumers from shopping online.

If, in the future, e-commerce in Pakistan becomes more like e-commerce in the West, the results may change as risk components such as financial, social, and psychological risk come into play. New variables such as the type of product and moderators such as users and nonusers could also be applied. The risk components could be studied independently and not as second-order variables. Future changes in the economy that lead to higher spending and a more stable currency could also change the study's results. Finally, while we have restricted ourselves to a particular culture, the study could be extended to incorporate a multicultural comparison.

Online shopping is, nonetheless, becoming an important factor in achieving efficient sales growth. Managers need to include and invest in this factor in the development of their online business models. Catering to the concerns of e-consumers would enable firms to develop better business strategies. The study's findings are relevant not only to existing businesses, but also new businesses, which could use these to develop effective policies. Taking both the positive and negative aspects into account would help managers who are planning to adopt e-commerce.

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