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# Governance and Foreign Direct Investment an Econometric Study of Pakistan: A Comparison with South Asian Countries

Muhammad Shahid<sup>\*</sup>, Mahmood Shah<sup>\*\*</sup>, Farhat Parveen<sup>\*\*\*</sup>, Fahim Nawaz<sup>\*\*\*\*</sup>

## Abstract

*This paper makes analysis of governance link with foreign direct investment and debates on the comparison with some South Asian economies. The paid data of composite governance index by International Country Risk Guide from 1984-2015 has been used to estimate the results of the model. The Auto Regressive Distributive Lag (ARDL) method was proposed. The Bound test, Error correction Mechanism and Structural Stability Tests are applied which revealed the governance indicators effectively to boost up FDI inflow. The study exposed positive empirical impact of governance on FDI in case of Pakistan.*

**Keywords:** FDI, Governance, Trade openness, Foreign exchange rate, Error correction.

**JEL Classification:** F320

## 1. Introduction

The governance concept in economics has adopted a fundamental position in the fields of development and management sciences. The governance issues push the country towards backwardness and waste the country resources in overcoming the governance problems and have to make investments in implementing the governance for attraction of the foreign investors. The poor performance in terrorism, political instability, lack of accountability, corruption among high officials, the internal and external conflicts, poor law and order condition and crimes have deteriorated and depressed internal and external investment (Goode, 2010).

Institution of the world has defined the governance as the norms and power which is exercised through govt. officers, institutions to formulate policies and provision of public goods and services (Rothstein & Teorell, 2008).

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Governance has been debated by Asian Development Bank into the form of four factors.

1. Answerability
2. Contribution
3. Clarity in Financial matters
4. Forecasting

Governance is devised by a specific practice in boundaries of the country implemented through norms, institutions and govt. officials. FDI grows and flows to the regions and those countries that make investment in governance. The empirical and economic connection between governance and foreign direction investment (FDI) has been interrogated explained and debated by many economists (such as Dixit, 2012; Rodrick, 2008; Aseidu, 2005; Shahid, Shah, & Parveen, 2015; Liouis, 2011).

Good governance is a necessary condition for growth of FDI to launch a business activity and it is proved to an engine for development of the economy. The changing economic condition of the age, the economic incentives are offered to the foreign investors like stable political power, low tax rate and tariff, cheaper labor cost, governance investment projects, effective social infrastructure base, stable political conditions. The foreign investors have been attracted by these economic incentives make the investors to invest in domestic country. These economic advantages like capital investment, foreign exchange, technical skills, job platforms, enlarge the size of market in the form of export and imports. These economies help the country to overcome the gaps of stock and foreign currency. The developing countries prefer FDI rather than foreign loans (IMF, 2005).

The governance indicators and reports of risk rating agencies are examined by foreign investors in law and order index, internal and external conflict and terrorism, criminal and civil justice performance, investment and economic climate of the business, enforcement of contracts, corruption control policy and political stability policy of the government before taking step of investment to a new home land. The good performance of these indicators put the economy on developmental path and more amount of FDI inflow to the countries investigated by (Teskos, 2004; Biglaiser, 2005; Lederman et al., 2010).

The association of governance and FDI has been controversial but theory is folded in three ambiguous. The First group interrogated the positive economic connection between governance indicators and FDI which causes the raising level of FDI debated by (Agrawal, 2011), (Dixit, 2012).

The second school of thought revealed the discouraging aspect of governance indicators and examined the negative effect of governance on FDI found empirically by (Weller & Ulmer, 2008). The

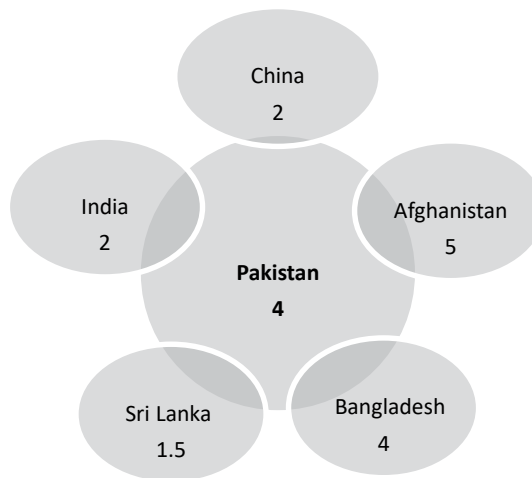
third link in governance and FDI has been investigated as insignificant and passive role of governance to attract more FDI focused by (Wheeler & Mody, 1992).

In this context it is necessary to launch the empirical research on governance implications on FDI, so this study emphasizes on attention to the indicators of governance and fixes the following objectives:

1. Interrogate the governance indicators which affect FDI and find the link associated with governance with FDI.
2. Along with inclusion of macroeconomic variables to investigate the factors which regulate FDI in Pakistan.
3. To formulate the policy measures for government and business investors which will increase the level of FDI and make governance conditions better in Pakistan.

### ***1.1 Pakistan Governance Indices: A Brief Assessment with South Asian Economies***

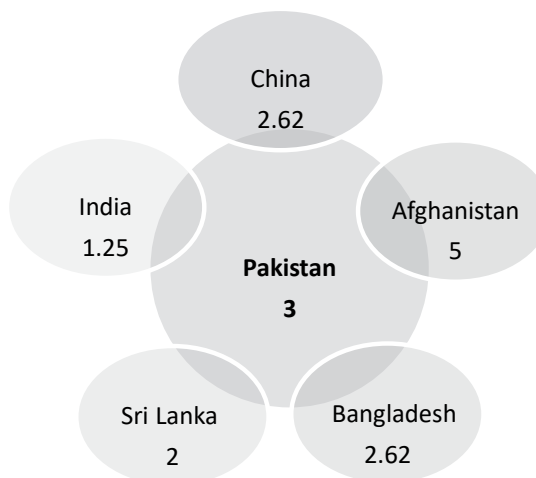
In 2015, Pakistan's indices of governance like Terrorism index, Incidents of terrorism, Fatalities from terrorism, violent crime index, and Political Instability indices were compared with SAC. First, Terrorism index Pakistan stands at 9.07, the highest position of the world after Afghanistan while the terrorism indices of India, Srilanka and China are at 7.75, 4.08 and 6.29 respectively. Incidents of terrorism in 2015 Pakistan stood at top position calculated 1821; the other countries' incidents of terrorism like China, India Srilanka and Afghanistan are estimated 12, 763, 15 and 1591. Pakistan faced 1760 fatalities from terrorism in 2015 while the figures of other SACs like India, China, Srilanka and Afghanistan were at 416, 60, 3 and 4505 respectively. The political factors are not stable in Pakistan's political instability index which is at 3 out of 5 while the political instability index of China, India, Srilanka, Bangladesh and Afghanistan are 2.62, 1.25, 2, 2.62 and 5 respectively represents worst political situation of Pakistan among South Asian countries.



*Figure 1: Index of Violent Crime*

Source: Unit (2015)

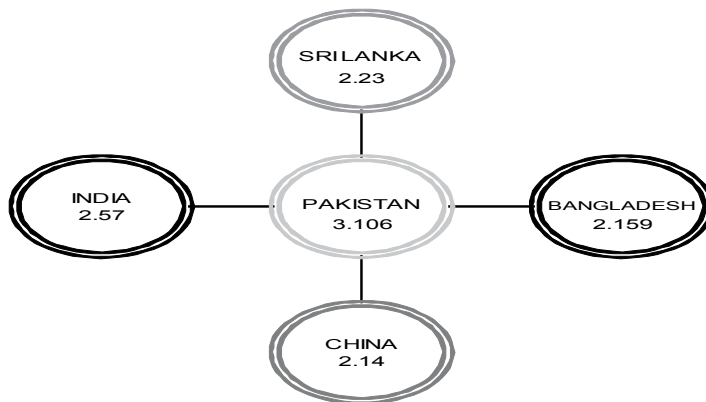
Pakistan index of violent Crime assumed 4 points out of 5, the other South Asian Countries index was not more than 2 except Afghanistan.



*Figure 2: Political Instability Index*

Source: Unit (2015)

Pakistan has also low index in Political Instability, a weaker position in the region. In South Asian Region the overall political instability index is better than Pakistan. Pakistan gained point 3, confirms the weak political stability. While the other SACs as China scored 2.62 points while India got scores 1.25, Srilanka 2, Bangladesh 2.62 represents stronger political position than Pakistan.



*Figure 3: The Peace Position of Pakistan: A Comparison with SACs*

Source: Unit (2015)

In 2015, the global ranking score of Pakistan is also at the highest point 157<sup>th</sup>/162 when China is 101<sup>th</sup>/162, India points 141<sup>th</sup>/162, SriLanka position 110<sup>th</sup>/162 and Bangladesh at 15/162 shows the low score than Pakistan reflects better peace in their countries.

## 2. Literature Review

Bitzenis and Zugic (2016) interrogated the association of FDI with the governance, friendly investment atmosphere, stability in political system, stability in the domestic conditions. The governance frame order is a compulsory condition for foreign investors to attract FDI inflow to domestic country.

White et al. (2015) examined legislative system, structure of legal order, corruption perception position, physical infrastructure network, affected from terrorism in the form of causalities and injuries, government stability and effective enforcement of law and order situation for generating FDI to domestic country.

Shah (2015) conducted a research study on the countries which were affected from terrorist activity, weak political government, ineffective government and weak law and order are the hurdles in raising FDI to home land country.

Shah and Afridi (2015) launched a study on the South Asian Countries by assuming the period from 2006-2014. After applying the econometric technique, the study concluded that governance structure improvement is necessary to increase FDI for SA regional economies. Malik and Ali (2013) investigated the macroeconomic and governance indicators as secure security structure, the procedure of rule of law, physical infrastructure of communication and procedure of discipline and showed its effect on FDI. The study used time series dataset span 1974-2009 and applied Johnson Co-Integration Test and OLS technique was used to estimate the findings. The research exposed that exchange rate and inflation discourage the FDI while the other governance indicators raised the level of FDI to domestic region.

Malik and Malik (2013) conducted a comprehensive study on vehemence, poor performance of exchange rate and stock exchange by taking data over 2003 to 2011. The research investigated that instable exchange rate, violence and poor efficiency of stock exchange harmed the FDI to domestic country.

Dixit (2012) devised two types of governance implementation expenditures, the price which the overseas investors have to afford in the presence of poor governance. The other cost which firms have to face to adopt new technology. He devised the formula explained as  $(r,t) = 0$  maximized the profit of foreign investors reflects the good governance in the country. So the good governance presence in domestic country causes the high profit for foreign investors.

Bissoon (2011) examined quality of institutions, policy of anticorruption, media power, government political stability and procedure of rule of law and showed the effect on FDI. The study assumed the data of 45 South Asian Region, Latin America and African countries over the dataset from 1996-2005. OLS econometric technique was operated which found that the media role, political stability and implantation of rule of law encourages the FDI to the country while the impact of terrorism, violation in politics and corruption in home land country curtail the FDI to the specific region.

Agrawal (2011) interpreted the terrorism impact on the persons who are injured from terrorism but alive and casualties from terrorism showed by the value of  $nr$ . The study takes up dataset from 1985 to 2009 of 34 developing countries and on dataset the Individual Sector Model Technique (ISMT) was used to conclude that assassination and breaking of political system and the poor domestic per capita product affects negatively FDI inflow to the economies.

Du, He, and Rui (2011) investigated the Lucas Paradox and institutional indicators to determine the FDI. The Lucas philosophy emphasized on FDI inflow from industrial developed countries to poor industrial countries but at provinces basis the Lucas philosophy is not the same. This philosophy reported that FDI moves to the country that is characterized with more GDP by assuming

dataset over span 2000-2004 of 30 provinces. The OLS, GMM were applied and concluded that FDI inflow trend was with the Eastern provinces which were characterized with higher FDI but these factors were not present in the western regions.

Sadig and Abdullah (2013) debated on corruption, institutions, human capital, democratic activity and trade openness in determining the FDI of poor and developed economies. The study analyzed the dataset from 1984-2004 of 117 countries to estimate the results which showed governance, effective institutions and democratic activities assures more amount of FDI.

Cole, Elliott, and Zhang (2009) investigated the research based on the Survey Based Research to attract FDI. The Survey Based study found that government stability, the size of market and political stability increases the FDI and study revealed that corruption and political stability impact on FDI was negative.

Kobeissi (2005) conducted the study on qualitative parameters as governance, judicial system and social infrastructure consequence on FDI by taking the dataset from 1990-2001. The research exposed the different findings that these qualitative indicators do not decrease the FDI inflow to domestic countries.

Biglaiser and Brown (2005) examined the governance and macro variables of 17 countries by adopting the dataset over the span from 1980-1996. The study concluded that governance indicators are correlated with FDI inflow positively.

Ahmad (2005) examined the link between governance, liberalization and globalization with FDI by adopting the data of South Asian countries. Statistical approach was adopted to find out the results. The research found that implementation of governance agenda is compulsory to speed up the FDI inflow.

Teskos (2004) reported that corruption discouraged the FDI inflow to Latin American regions. The study examined the governance indicators as institutions, corruption control policy, law and order, political stability enforcement and geographic location and CPI index by initiating the data over 1995-2000. 2SLS statistical approach was operated to detect the conclusion that composite of governance raises the FDI inflow except corruption.

### 3. Model Specification and Data Source

$FI = f(GC, TP, ER, RGGR, GPI)$

$FI = \beta_0 + \beta_1 GC + \beta_2 TP + \beta_3 ER + \beta_4 RGGR + \beta_5 GPI + u_i$

FI = Foreign Direct Investment, GC = Governance Composite Index (0 to 1)

TP = Trade Openness, ER = Foreign Exchange Rate to measure stability of economy,

RGGR = Real Gross Domestic Production Growth Rate,  
GPI = Growth Rate of Public Investment in US dollar.

Data was derived from ICRG and WDI data and State Bank of Pakistan for the period over 1984-2015.

### 3.1 Unit Root Test

The stationary of the variables, Unit Root test is required for appropriate technique. The stationary test is applied to check variables at level or I (1). The technique can be applied when all coefficients are at level and 1<sup>st</sup> difference or mix of both and it fails totally when one of variable is at 2<sup>nd</sup> difference.

Table 1

*Unit Root Test Dicky Fuller Test (DFT)*

Variables	DF Test Statistics (at level)	DF Test-Statistics ( at 1st Difference)	Stationary Status
LOGFDI	-1.066	-4.4453*	I(1)
GC	-1.654	-4.192*	I(1)
TP	-1.1032	-2.2767**	I(1)
ER	-2.100**	-6.083	I(0)
GPI	-1.7262	-6.2020*	I(1)
RGGR	-3.3211**	-5.869	I(0)

Note: \* and \*\* represent significance level at 1% and 5% respectively.

### 3.2 Co Integration Equations

Pesaran and Pesaran (1997) and Pesaran and Shin (1998), analyzed the Error Correction Version of ARDL econometric Technique. This study applied Error Correction Version to explain Governance and macroeconomic variables in short run and long run, as

$$\begin{aligned}
 \Delta \log FI_t = & \alpha_0 + \sum_{i=1}^N \alpha_1 \Delta \log FI_{t-i} \\
 & + \sum_{i=0}^N \alpha_2 \Delta GC_{t-i} + \sum_{i=0}^N \alpha_3 \Delta TP_{t-i} + \sum_{i=0}^N \alpha_4 \Delta ER_{t-i} + \sum_{i=0}^N \alpha_5 \Delta RGGR_{t-i} + \\
 & + \sum_{i=0}^N \alpha_6 \Delta GRPI_{t-i} + \beta_1 \log FI_{t-1} + \beta_2 GC_{t-1} + \beta_3 TP_{t-1} \\
 & + \sum_{i=0}^N \alpha_4 \Delta ER_{t-i} + \beta_5 GPI_{t-1} + \beta_6 RGGR_{t-1} + \gamma ECT_{t-1} + \mu_t \dots\dots\dots (1)
 \end{aligned}$$



On first differenced variables Bound test is conducted to analyze the long-run link among variables. The error adjustment mechanisms launched to examine the SR (short run) characteristics of the model. In variables addition test the first lag of each variable is summed to the equation then F-statistics examines the composite significance of lagged coefficient.

$$\begin{aligned} \Delta \log FI_t = & \alpha_0 + \sum_{i=1}^N \alpha_1 \Delta \log FI_{t-i} \\ & + \sum_{i=0}^N \alpha_2 \Delta GC_{t-i} + \sum_{i=0}^N \alpha_3 \Delta TP_{t-i} + \sum_{i=0}^N \alpha_4 \Delta ER_{t-i} + \sum_{i=0}^N \alpha_5 \Delta RGGR_{t-i} + \\ & + \sum_{i=0}^N \alpha_6 \Delta GPI_{t-i} + \beta_1 \log FI_{t-1} + \beta_2 GC_{t-1} + \beta_3 TP_{t-1} \\ & + \beta_4 ER_{t-1} + \beta_5 GPI_{t-1} + \beta_6 RGGR_{t-1} + \gamma ECT_{t-1} + \mu_t \end{aligned} \quad (2)$$

The bound test is operated to investigate the long run link among variables when the variables are on first difference.

Table 2

*F-Statistics for Co Integration*

F-Statistics	95% and		90% Con. Int.	
	L- L	U- L	L- L	U- L
7.293	3.814	4.471	2.636	3.425

Source: Software Estimation

The long run bound test for co integration value is above 7.293 and 3.814 and 4.471 which are L-limit and U- limit bound values at 95% confidence interval level confirms the rejection of null hypothesis. The other lower and upper bound values 2.636 and 3.425 are below from calculated value of F-Statistics rejects again  $H_0$  and favors the  $H_1$  confirms co integration in LR between coefficients.

Table 3

*Goodfit Model*

R2	.783
Adjusted R2	.761
D-Statistics	2.024
F (6, 16)	42.824

Source: Software Estimation

$R^2$  value is 0.783 reflects that 78.3 % variation is due to independent variables, the other variation corresponds from residual term. The value of  $R^2$  explains the model that it is good fit. The

adjusted  $R^2$  value shows that model is significant attached with d.f (degree of freedom) and ARDL overcomes the issue of serial correlation.

### 3.3 Diagnostic Test

Autoregressive Distributive lag model covers all assumptions of OLS technique. The above table illustrates the P. value in LM version and FM version crosses 10 % confirms the correct auto correlation, form of functional structure and normality and no chance of hetrosekdacity.

### Structural Break Test

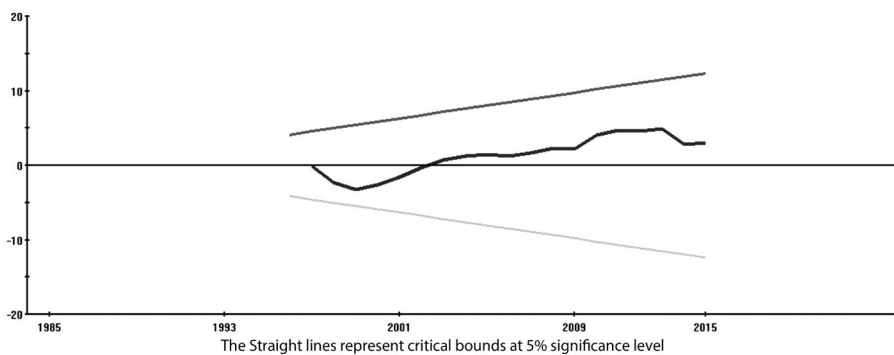


Figure 4: Plot of Cumulative Sum of Recursive Residuals

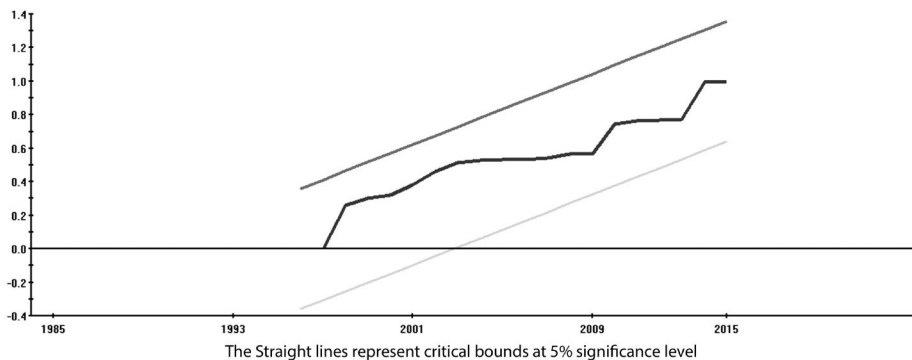


Figure 5: Plot of Cumulative Sum of Recursive Residuals

Source: Software Estimation

The structural stability of LR variables linked with SR phenomenon was checked by the graph of cumulative sum of recursive residuals (CUSUM) and CUSUM square devised by Brown, Durbin, and Evans (1975).

The cumulative sum of recursive residual graph is accurately in between the 5 % bound limit and CUSUM sum of square graph is also adjusted in between 5% bound limit expresses the absence of no break is found in the model. The model of structure is stable.

Table 4  
*Long Run Estimation of the Model*

Variables	Coefficients	t-Ratios	P-Values
GC	3.542	2.164	(.042)
TP	3.628	1.831	(.081)
ER	1.130	3.314	(.003)
RGGR	.243	4.062	(.001)
GPI	1.162	2.604	(.017)

Source: Software Estimation

Under ARDL method the table 4.8 explains the long run results. The estimated findings in LR indicate that good governance, trade openness, FX, real GDP and public investment is significantly and positively affect the foreign direct investment. In Pakisan FDI is curtailing the due to weak governance. The governance is statistical significant at 5% and as absolute one unit raise in governance, increases the FDI by 3.542 relatively in long run (Shahid, Shah, & Parveen,2015; Gani ,2007; Malik & Malik.,2013).

Table 5  
*Mechanism of Error Correction Model*

Variables	Coefficients	t-Ratios	P-Values
dGC	3.254	2.164	(.041)
dTP	1.362	1.014	(.321)
dER	.071	2.704	(.015)
dRGGR	.086	3.215	(.002)
dGPI	1.542	3.947	(.001)
Ecm(-1)	-.471	- 5.721	(.000)

Source: Software Calculation Microfit 5

Error correction mechanism displays the results of coefficients under the approach of ARDL. As absolute 1 unit increases in governance, enhance the FDI by 3.254 relatively and is significant at

5%, affecting the FDI positively in case of Pakistan. The adjustment co efficient is significant at 1% level and negative sign of coefficient assures the convergence of the model towards equilibrium. The error correction coefficient is 0.471 which shows the speed of per year adjustment, suggests that 47.1 % disequilibrium in current year is corrected in the next year.

#### 4. Conclusion

In this research, researcher made an effort to detect social, economic and political governance indicators which lead to increase the foreign direct investment (FDI). The study employs the governance composite index data from 1984 to 2015 compiling by ICRG and on data ARDL method was employed to investigate the empirical results in the short run and LR. An absolute one unit increases the governance; it raises FDI relatively by 3.254 While governance increases the relatively change in FDI by 3.452 in the long period. While the other control variables FX Rate, size of market and network roads have positive impact on FDI. The most important result of the study exposes that governance has major and backbone factor for enhancing FDI to domestic country Pakistan.

While the governance indicators ranking of Pakistan among South Asian Countries is weak, deteriorating foreign direct investment of Pakistan. The study recommends governance reforms, trade links with world for improvement of credibility and investment environment for Pakistan to attract more inflow of FDI. The study also suggests that more FDI is associated with governance indicators. Further poverty and unemployment can be alleviated with the improvement of these indicators. Governance can raise exports and imports of the country also.

The research study proposed suggestions for country, policy makers, business men and researchers that they should focus to improve governance indicators so that the amount of FDI inflow be increased. In this context the following suggestion are recommended.

1. To raise the level of FDI, the government should pay more attention to security problems, terrorism, poor institutions, checks on military in politics, rule of law enforcement, ensure the strong law and order situation, political stability and transparency, control of delays from bureaucracy, improve relationship with neighboring countries, media role, civil society and governance awareness for common man.
2. The macro economic variables, human capital, control of currency devaluation, control of foreign exchange, continuation of economic policies, fair tax policies for domestic and foreign investors, control the de employment of funds from health and education and provide protection to domestic industry be focused by government for improvement for FDI.
3. The infrastructure, energy, network of roads, transportation, gas, electricity, communication, education and health be financed by domestic and foreign resources, if more amount of FDI inflow is required.

4. The domestic country should improve the standard of living in the form of human development index, poverty reduction, otherwise, governance problems emerges due to poverty in the form of corruption, distortion, tax evasion, crime, poor implementation of policies, incomplete projects or infrastructure which depress the institutions of economy. So Pakistan should improve the poverty raking if the country desires to attract more amount of foreign investment.
5. To attract more amount of FDI, the role of forces support cannot be ignored. The army should provide security and remove all threats and challenges that are faced to foreign investors so that the recipient country can take full benefit from FDI.
6. The study also strongly recommends that FDI recipient countries should raise their manufacturing and technological level so that these countries can be exploited by advanced countries.
7. The country should pay more attention to health standard, education, laws related to foreign investors, control of corruption, red tapism, to remove delays and control the value of their currency.

## References

- Ahmad, N. (2005). Governance, Globalization, and Human Development in Pakistan. *The Pakistan Development Review*, 44(4), 585-594.
- Agrawal, S. (2011). The impact of terrorism on foreign direct investment: Which sectors are more vulnerable? CMC Senior Thesis Paper 124.
- Asiedu, E. (2005). Foreign direct investment in Africa. *WIDER Research Paper*, 24(1), 1-15
- Biglaiser, G., & Brown, D. S. (2005). The determinants of economic liberalization in Latin America. *Political Research Quarterly*, 58(4), 671-680.
- Bissoon, O. (2012). Can better institutions attract more foreign direct investment? Evidence from developing countries. *International Research Journal of Finance and Economics*, 82(1), 142 – 158.
- Bitzenis, A. P., & Žugić, V. P. (2016). Barriers for FDI in Serbia: Evidence from the manufacturing sector. *Global Business and Economics Review*, 18(2), 227-246.
- Brown, R. L., Durbin, J., & Evans, J. M. (1975). Techniques for testing the constancy of regression relationships over time. *Journal of the Royal Statistical Society: Series B (Methodological)*, 37(2), 149-163.

- Cole, M. A., Elliott, R. J., & Zhang, J. (2009). Corruption, governance and FDI location in China: A province-level analysis. *The Journal of Development Studies*, 45(9), 1494-1512.
- Dixit, A. (2012). Governance, Development, and Foreign Direct Investment. Max Weber Program. Italy: The European University Institute.
- Du, J., He, Q., & Rui, O. M. (2011). Channels of interprovincial risk sharing in China. *Journal of Comparative Economics*, 39(3), 383-405.
- Gani, A. (2007). Governance and foreign direct investment links: evidence from panel data estimations. *Applied Economics Letters*, 14(10), 753-756.
- Goode, R. (2010). Government finance in developing countries. Brookings Institution Press.
- IMF (2005). Joint World Bank and IMF Report on Poverty Reduction Strategy Papers—Progress in Implementation. Retrieved from <https://www.imf.org/external/np/pp/eng/2005/020205.pdf>
- Index, G. P. (2015). Measuring peace, its causes and its economic value (2015). *Institute for Economic & Peace*. Retrieved from [http://economicsandpeace.org/wp-content/uploads/2015/06/Global-Peace-Index-Report-2015\\_0.pdf](http://economicsandpeace.org/wp-content/uploads/2015/06/Global-Peace-Index-Report-2015_0.pdf).
- Kobeissi, N. (2005). Impact of governance, legal system and economic freedom on foreign investment in the MENA region. *Journal of Comparative International Management*, 8(1), 20-41.
- Lederman, D., T. Mengistae and L. C. Xu (2010). Microeconomic consequences and macroeconomic causes of foreign direct investment in southern African economies. World Bank Policy, Research Working Paper 5416, September
- Malik, S., & Malik, Q. A. (2013). Empirical analysis of macroeconomic indicators as determinants of foreign direct investment in Pakistan. *IOSR Journal of Business and Management*, 7(2), 77-82.
- Pesaran, H. H., & Shin, Y. (1998). Generalized impulse response analysis in linear multivariate models. *Economics Letters*, 58(1), 17-29.
- Pesaran, M. H., & Pesaran, B. (1997). Working with microfit 4.0. Camfit Data Ltd, Cambridge.
- Rodrik, D. (2008). Second-best institutions. *American Economic Review*, 98(2), 100-104.
- Rothstein, B. O., & Teorell, J. A. (2008). What is quality of government? A theory of impartial government institutions. *Governance*, 21(2), 165-190.
- Sadiq, M. Y., & Abdullahi, M. (2013). Corruption as the bane of Nigeria's development: Causes and

- remedies. *International Journal of Economic Development Research and Investment*, 4(1), 83-93.
- Shah, M. H. (2015). Terrorism and foreign direct investment: An empirical analysis of SAARC countries. *City University Research Journal*, 5(2), 219-233.
- Shah, M. H., & Afridi, A. G. (2015). Significance of Good Governance for FDI Inflows in SAARC Countries. *Business & Economic Review*, 7(2), 31-52.
- Shahid, M., Shah, M., & Parveen, F. (2015). Governance, human capital, trade openness effect on foreign direct investment: an empirical study in case of Pakistan. *Gomal University Journal of Research*, 31(1), 101-110.
- Unit, E. I. (2015). Democracy Index 2014: Democracy and its discontents. Retrieved from: EIU: <http://www.eiu.com/Handlers/WhitepaperHandler.ashx?fi=Democracy-index-2014.pdf&mode=wp&campaignid=Democracy0115>
- Weller, C., & Ulmer, K. (2008). Does governance matter for trade? *Trade and governance*, 24 (1), 1-29.
- Wheeler, D., & Mody, A. (1992). International investment location decisions: The case of US firms. *Journal of International Economics*, 33(1-2), 57-76.
- White III, G.O. Chizema, A., Canabal, A., & Perry, M.J. (2015). Legal system uncertainty and FDI attraction in Southeast Asia, *International Journal of Emerging Markets*, 10(3), 572-597.

## Pair Trading Strategies using Machine Learning: A Case of PSX Firms

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### Abstract

*Pair trading is generally known as a profitable strategy of an investment. Here, in this study DBSCAN clustering algorithm (machine learning) in addition to the traditional pair trading technique is used. By using this algorithm 3 cluster are identified from EPS, Market-Cap, sector classification and BVS (fundamental variables) with other factors formed from PCA on the returns of daily data of two years of the sample firms. Pairs are also formed based on traditional distance approach of Gatev et al. (2006). Sample consists of 80 stocks from five different sectors; banking, chemicals, cement, textile, food and care products from year 2011 to 2019. Under the machine learning a remarkable 1.16% average excess monthly return with Sharpe ratio of 2.48 is to be observed. For risk adjusted returns, Jensen's alpha under CAPM is also to be observed positive and significant. The results also authenticate mean revision and market neutrality at PSX. Investors can get positive returns through pair trading at PSX. Portfolio and fund managers can form the pair trading strategy to reap the profitability for their clients and specially they can get higher returns by using machine learning approach.*

**Keywords:** Machine learning, Pair trading, Jensen's alpha, Distance, DBSCAN, PSX, PCA.

**JEL Classification:** F120

### 1. Introduction

Pairs trading means finding the pair of investments (stocks, indices, currencies etc.) that were closely related in past (historical data) and taking long and short positions in pairs when their prices diverge and close the positions when prices converge. Pair trading is contrarian strategy as when stock diverges, winner stock is sold while loser is bought.

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Pair trading methodology was initially used by Morgan Stanley in 1983 to make profit from market inefficiencies. The theme is based on mean reversion theory. Different methods: stochastic spread, distance cointegration and recently clustering approaches are used for pair trading. However, the literature is deficient regarding the use of machine learning in pair trading.

Machine learning, nowadays, is the area that was used by the researchers in social sciences like finance, accounting, etc. (Lin, Hu, & Tsai, 2012; Mitchell, 2006; Huang et al., 2004; Ecer, 2013). According to Mitchell (2006), machine learning models provide high accuracy and more predictive power as compared to the conventional techniques. Machine learning algorithms are usually separated into two classes based upon the desired final results of the algorithms. In supervised machine learning, outcomes are already known, which is predicted based on some features. Nevertheless, in unsupervised machine learning, features are used to generate unknown outcomes. An unsupervised mean that all the variables take part to generate in an output. In unsupervised machine leanings, an output is unknown, which is generated by the algorithm itself. The most widely used unsupervised machine learning is the clustering.

According to Myatt and Johnson (2014) clustering of data may help to identify and summarize the classes of individuals from which it belongs. Clustering helps to make groups into related sets of observations or clusters, so that all the observations move to those observations which are similar to one another. Clustering is formed in such a way that the data is subdivided into groups through a structured pattern in the data.

Mainly, three types of clustering are used in literature: (a) hierarchal clustering also called agglomerative hierarchal clustering that organize the data into hierarchically which provide insight into the problem under investigation. The Second type of clustering is k-means which partition the data into lists of clusters which are already predefined number of groups. K-mean clustering is often used where dataset is large, and no hierarchy existed in the data. The Third, is Density-based spatial clustering of applications with noise, called DBSCAN.

The DBSCAN is powerful algorithm to find patterns, associations and to predict. To calculate the similarities between observations, the distance between these observations are computed. To observe the similarities between observation, it is required that all the variables are normalized on the same scale to prevent disproportionate weight and bias in the data for analysis. Therefore, it was required to standardize the data on a similar measuring scale so that the distance between each observation could be calculated.

While going through detailed literature review, there is no such study in Pakistan Stock Exchange (PSX) to explore this issue except the Sohail, Sindhu, and Imran (2020) where simple co-integration approach is used, and authors documented profitability in pair trading. However, in this study the more advanced techniques of machine learning were ignored. Therefore, the main objective

of this study focuses to look for evidence on pairs trading's profitability and to observe the edge of machine learning approach over traditional approach at PSX.

The clustering process is tested under unsupervised machine learning approach using the Principal Component Analysis and combined with DBSCAN Clustering to group the stocks with higher similarities.

Therefore, research questions in this study are as follow:

Does pair trading under distance approach provide profitability?

Does pair trading under machine learning approach provide profitability?

Does pair trading under machine learning approach and distance approach provide positive risk adjusted performance?

In Pakistan, there is no single study regarding pair trading except the study of Qazi, Rahman, and Gul (2015) and Sohail, Sindhu, and Imran (2020). In the study of Qazi, Rahman, and Gul (2015) only pairs were formed and no trading algorithm was used. However, in the study of Sohail, Sindhu and Imran (2020) only co-integration approach was used. So, this study is the first one to take this aspect of machine learning and will contribute in the context of use of unsupervised machine learning for pair formation.

## 2. Literature Review

One of the main themes in pair trading is the concept of the market neutrality. Haque and Haque (2014) that pair trading involves risk also. However, according to Elliott, Hoek, and Malcolm (2005), the risk in pair trading can be neutralized by taking long and short position in financial assets. The strategy is market neutral only if the stocks of each pair have identical exposure to the market.

In the study of Gatev, Goetzmann, and Rouwenhorst (2006), 11% annualized return was observed. Alexander and Carol (2001) used the cointegration approach for pair trading in DJIA and found positive returns. The same approach was also witnessed in the studies of Caldeira and Moura (2013) and Rudy, Dunis, and Laws (2010). They also showed positive returns in pair trading.

In Australia, Bogomolov (2011) used three different methods; stochastic spread, distance and cointegration approaches for pair trading. Mudchanatongsuk, Primbs, and Wong (2008) also provided a different model and validating the mean reversion theory. The most common approaches to pair trading are: Distance Approach, Stochastic Approach, Stochastic Residual Spread and Co-integration Approach (Elliott, Van Der Hoek, & Malcolm, 2005; Gatev et al., 2006; Do & Faff, 2010; Liew & Wu, 2013).

Five different pair trading strategies are reported by Krauss (2017), however, Blázquez and Román (2018) favored co-integration approach after analyzing different methodologies under the umbrella of pair trading. The profitability in pair trading strategies are witnessed by different studies like the Namwong, Yamaka, and Tansuchat (2019) study. They used the data of Thailand and reported profitability. Recently, Ramos-Requena, Trinidad-Segovia, and Sánchez-Granero (2020) and Sohail, Sindhu and Imran (2020) also reported profitability in pair trading.

### 3. Methodology

The Sample consists of Eighty firms from five sectors including banking, cement, textile composite, chemical, and food & care products where 16 firms are included from each sector. The formation period of pair trading consists of one year for distance approach while the two years for machine learning. The trading period is same that consists of six months for the two approaches; the distance and unsupervised machine learning.

To follow the methodology of distance approach, the prices of stock should be normalized (i.e. begins at one (100%, and its value will change according to the subsequent returns) as discussed below.

$$P_t^i = \pi_{t=1}^T (1 + r_t^i) \text{-----} (1)$$

Where  $p_t^i$  represents prices of stock i that are now normalized.  $r_t^i$  represents the stock returns on daily basis. For formation period, total number of trading days are represented by T. At the end of day each stock normalized price is  $t = 1, 2, \dots, T$ . The distance,  $D_{(i,j)}$  is measured as:

$$D_{(i,j)} = \frac{\sum_{t=1}^T (P_t^i - P_t^j)^2}{T} \text{-----} (2)$$

These distances are sorted in ascending order and then ranking of pairs take place. For example, the top 5 pairs are selected to match with machine learning (clustering) approach where three clusters were identified containing two 3's and one 4's stocks.

In machine learning approach, first, PCA analysis are conducted on the daily returns of two years' data (495 days) and 30 factors are formed. PCA creates new variables, that are linear patterns from the original variables in this case daily returns and other variables. In summary 30 factors were formed. These 30 factors are combined with the fundamental factors; EPS, Sector classification, BVP and Market capitalization to apply DBSCAN clustering algorithm in Python.

In machine learning, DBSCAN is a clustering technique method that is used to break up clusters of high density to low density of clusters. It also assists in handling outliers within the dataset. Two criteria are required for DBSCAN: “eps: the minimum distance between two points. It implies that if the distance between two points is lower or equal to this value (eps), these tips are considered neighbors. Midpoint’s: the minimum number of points to form a dense region. For example, if we set the min Points parameter as 5, then we need at least 5 points to form a dense region”.

DBSCAN starts by splitting the data into n dimensions. A random point is selected and then nearby points are selected to this random point and so on, and finally clusters are identified with the help of this algorithm. Minimum four points are required to form cluster. The point outside is not contained within any cluster and treated as outliers. Based on DBSCAN clustering, 3 clusters are identified, and each cluster carry 3, 3, and 4 firms. The pairs are formed from three clusters to start the trading algorithm.

After identification of pairs under the two approaches trading algorithm is applied to calculate the portfolio returns. In trading algorithm, under the two approaches, the spread of each pair is calculated as:  $|P_t^i - P_t^j|$

While trigger gets the following forms:

Trigger (i, j) = n x std (i, j)

$$\text{std}(i, j) = \sqrt{\frac{1}{T-1} \sum_{t=1}^T [(P_t^i - P_t^j)^2 - D(i, j)]^2} \quad \text{-----} \quad (3)$$

A trade remains opened when  $|P_t^i - P_t^j|$  is greater than trigger (i, j). It involves the long position and short position for the same amount by committed capital (i.e. no investment). The values for n are 1.5, 2 and 2.5 SD’s. A pair trade remains opened and closed in the six months period until above conditions met, i.e. divergence and convergence of stocks takes place, however, trading set to close at the end of six months where stocks do not converge.

The calculation of returns is based on the cash flows by investing capital, however, since in pair trading no initial capital is required, the returns are calculated by dividing the payoff of each period by the total amount of pairs.  $R_t^{(k)}$  and  $R_t^{(s^k)}$ , represent one-day return on long and short positions. The daily returns of pair are calculated as:

$$R_t(p^k) = R_t^{(k)} - R_t^{(s^k)} \quad \text{-----} \quad (4)$$

So the daily return of  $N^*$  pairs is

$$R_t^{port} = \sum_{k=1}^{N^*} W_t^k R_t(p^k) \quad \text{-----} \quad (5)$$

Where  $W_t^k$  represents the equally weighted.

These daily returns are converted to monthly returns. These monthly returns are calculated for the period of six years from Jan. 2011 to Dec 2019. Further due to the market-neutrality of the strategy, the seportfolio returns can be considered as excess returns.

Average AR is calculated as:

$$\overline{AR} = \frac{1}{n} \sum_{i=1}^n AR \quad \text{-----}(6)$$

The significant of these AR's are checked by t statistics.

$$t = [\overline{AR}] / [\frac{s}{\sqrt{n}}] \quad \text{-----}(7)$$

Further, the performance of pair trading portfolio is checked by Sharpe, Treynor and Jensen's alpha (using CAPM)

$$SR = \text{Excess pair - trading portfolio return} / \text{SD of portfolio} \quad \text{-----}(8)$$

$$T = \text{Excess pair - trading portfolio return} / \text{systematic risk portfolio} \quad \text{-----}(9)$$

$$R_{p,t} - R_{f,t} = \alpha_p + \beta_p (R_{m,t} - R_{f,t}) + \varepsilon_{p,t} \quad \text{-----}(10)$$

The two hypothesis "abnormal returns of pairs trading is different from zero", "Jensen's alpha of pairs trading is different from zero" under the two approaches is tested.

#### 4. Results

The sample of this study comprises of 5 sectors of PSX named as Textile, Cement, Chemical, Banking and food & care products. 16 companies in each sector are selected based on their market capitalization for distance approach and 80 companies are selected for machine learning. The formation period of pair trading consists of one year for distance approach while two years for machine learning. The trading period is the same that consists of six months for the two approaches. The data which is used in this study is (daily data) over the period 2011-2019. For machine learning fundamental characteristics like BVP, EPS, Mkt Cap are also used.

Three cluster were identified through DBSCAN clustering. The graphical representation obtained through python language is represented as figure-1 and figure-2. The results of these three

clusters are compared with three sectors; banking, cement and textile.

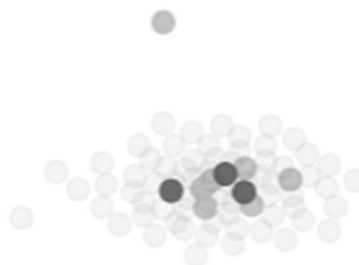


Figure 1: T-SNE of all Stocks with DBSCAN Clusters Noted

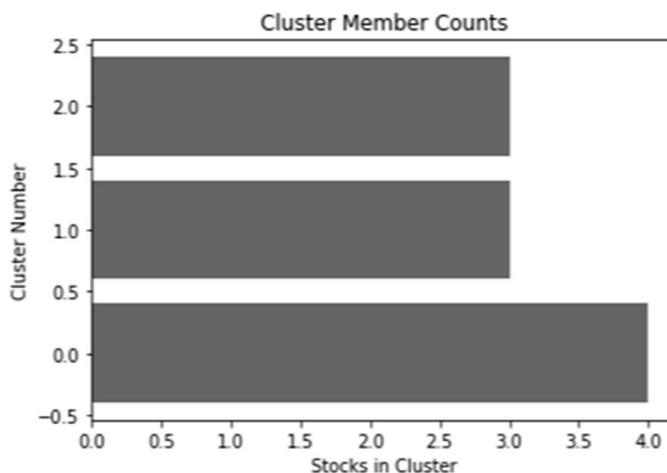


Figure 2: Stocks in cluster

The results of descriptive analysis under various parameterization of distance and machine learning approach are presented in Table 1 under Panel-A and Panel-B respectively. In Table 1, Panel-A represents the analysis of distance approach, while Panel-B represents the analysis of Machine learning approach. In traditional and machine learning approach, the average values for various parametrizations are positive to show that pair trading strategy is profitable at PSX. In distance approach, under the textile sector, the highest average returns of 0.0207 are to be observed under the parameter of 2.5 standard deviations, however, the volatility is also maximum. In the same way, in machine learning approach under cluster 2, the highest average returns of 0.0255 are to be observed under the parameter of 1.5 standard deviations. These results are with accordance to prior studies of

pair trading like Namwong, Yamaka, and Tansuchat (2019) and Zhang and Urquhart (2019) etc.

**Table 1**  
*Descriptive Analysis under Different Parametrization*

<b>Panel-A</b>	<b>b_1.5_SD</b>	<b>b_2_SD</b>	<b>b_2.5_SD</b>	<b>c_1.5_SD</b>	<b>c_2_SD</b>	<b>c_2.5_SD</b>	<b>t_1.5_SD</b>	<b>t_2_SD</b>	<b>t_2.5_SD</b>
Average	0.0082	0.0089	0.0093	0.0095	0.0099	0.0126	0.018	0.019	0.0207
Median	0.0063	0.007	0.0077	0.0073	0.0081	0.0094	0.0174	0.017	0.016
Minimum	-0.0016	-0.0027	-0.0033	-0.0058	-0.0117	-0.0125	0.0028	0.0034	0.0021
Maximum	0.0447	0.0544	0.0508	0.0279	0.0317	0.0559	0.0641	0.0877	0.1654
SD	0.0067	0.0081	0.0079	0.0079	0.0091	0.0127	0.0112	0.0134	0.0225
<b>Panel-B</b>	<b>cl1_1.5_SD</b>	<b>cl1_2_SD</b>	<b>cl1_2.5_SD</b>	<b>cl2_1.5_SD</b>	<b>cl2_2_SD</b>	<b>cl2_2.5_SD</b>	<b>cl3_1.5_SD</b>	<b>cl3_2_SD</b>	<b>cl3_2.5_SD</b>
Average	0.0102	0.0129	0.0159	0.0121	0.0154	0.0195	0.0255	0.0111	0.0154
Median	0.0088	0.0093	0.0102	0.0096	0.0108	0.0116	0.0118	0.0014	0.0014
Minimum	0.0008	0.0002	0.0004	0.0002	0.0003	0	0	0	0
Maximum	0.0272	0.0398	0.0582	0.0401	0.0638	0.1104	0.2703	0.0837	0.2124
SD	0.0074	0.0104	0.0162	0.0106	0.0145	0.0225	0.0442	0.0194	0.0358

To test the significance of portability under the two approaches of distance and machine learning, traditional t-statistic is applied. Similarly, Jensen's alpha under CAPM is used for risk adjusted returns of pair trading portfolio. Further, some other well-known performance measure ratios Treynor and Sharpe ratio is also used.

After calculating the average returns of these trading portfolios under distance and machine learning approaches average profitability (abnormal returns) of these trading portfolios are presented in Table 2. Overall, significant, and positive results are to be observed under these two approaches.

In distance approach, these results are highly significant with an average return of 1.19% and t statistic of 19. 2035. These results are also showing that pair trading strategy is also profitable at PSX and investors can earn positive returns as in case of other developing and emerging markets of the world. These results are also supportive of market neutrality and mean reversion theory. For different portfolio and fund managers, it is suggested that they can form the pair trading strategy to reap the profitability for their clients. The Sharpe ratio and Treynor ratios are also positive with values of 2.48 and 1.25 respectively.

Table 2  
*Comparison of Distance v/s Machine Learning*

	AR's	SD	t	p value	Sharpe Ratio	Treynor Ratio
Avg_distance	0.0119	0.0048	19.2035	0.0000	2.4800	1.4500
Avg_machine	0.0160	0.0162	7.6503	0.0000	0.9900	0.7500

On the other hand, in case of machine learning approach, these results are also highly significant with an average positive return of 1.6% and t statistic of 7.6503. These results are higher than distance approach. These results are also showing that pair trading strategy is also profitable at PSX and investors can earn some additional positive returns by using machine learning approach. These results are also supportive of market neutrality and mean reversion theory. For different portfolio and fund managers, it is suggested that they can form the pair trading strategy to reap the higher profitability for their clients by using machine learning approach. The Sharpe ratio and Treynor ratios are also positive with values of 0.99 and 0.75, respectively, lower than as compared with distance approach.

Therefore, under the two approaches of distance approach and machine learning, the null hypothesis is rejected, and we are now in position to answer the research question number 1 that pair trading is profitable at PSX. For risk adjusted return of pair trading portfolio, the results of all the three sectors in detail (separately) and as a whole are presented in table 3. The Jensen's alpha for CAPM under various parameterization shows that risk adjusted returns of pair trading portfolio for all the three sectors and as a whole, is significantly positive. These results are also with the accordance of prior studies. Therefore, null hypothesis is rejected for Jensen's alpha. Therefore, investors can get positive risk adjusted returns at PSX using distance approach. Textile sector under 2.5 standardization parameter rewarding higher risk adjusted returns as compared with other two sectors: banking and cement.

Table 3  
*Results of Jensen's Alpha of Distance Approach*

	Variable	Coefficient	Std. Error	t-Statistic	Prob.
b_1.5_SD_5_CAPM	Intercept (alpha)	0.0078	0.0009	8.2678	0.0000
b_2_SD_5_CAPM	Intercept (alpha)	0.0084	0.0011	7.4300	0.0000
b_2.5_SD_5_CAPM	Intercept (alpha)	0.0088	0.0011	7.9749	0.0000
c_1.5_SD_5_CAPM	Intercept (alpha)	0.0102	0.0011	9.4083	0.0000
c_2_SD_5_CAPM	Intercept (alpha)	0.0107	0.0013	8.5635	0.0000
c_2.5_SD_5_CAPM	Intercept (alpha)	0.0133	0.0018	7.4473	0.0000
t_1.5_SD_5_CAPM	Intercept (alpha)	0.0172	0.0016	10.9779	0.0000
t_2_SD_5_CAPM	Intercept (alpha)	0.0184	0.0019	9.7770	0.0000
t_2.5_SD_5_CAPM	Intercept (alpha)	0.0203	0.0032	6.3710	0.0000
dist_avg_CAPM	Intercept (alpha)	0.0117	0.0007	17.5458	0.0000



For risk adjusted return of pair trading portfolio, the results of all the three clusters formed through machine learning in detail (separately) and as a whole are presented in table 4. The Jensen's alpha for CAPM under various parameterization shows that risk adjusted returns of pair trading portfolio for all the three clusters and as a whole, is significantly positive. These results are also with the accordance of prior studies. Therefore, null hypothesis is rejected for Jensen's alpha under machine learning approach. Therefore, investors can get also positive risk adjusted returns at PSX by using machine learning approach. Cluster 3 under 1.5 standardization parameter rewarding higher risk adjusted returns as compared with other two clusters.

The higher risk adjusted performance of pair trading portfolio is to be observed under machine learning approach as compared with the distance approach.

Table 4

*Results of Jensen's Alpha of Machine Learning Approach*

	Variable	Coefficient	Std. Error	t-Statistic	Prob.
cl1_1.5_SD_5_CAPM	Intercept (alpha)	0.0093	0.0010	9.3485	0.0000
cl1_2_SD_5_CAPM	Intercept (alpha)	0.0114	0.0014	8.2249	0.0000
cl1_2.5_SD_5_CAPM	Intercept (alpha)	0.0140	0.0022	6.3927	0.0000
cl2_1.5_SD_5_CAPM	Intercept (alpha)	0.0117	0.0015	7.7970	0.0000
cl2_2_SD_5_CAPM	Intercept (alpha)	0.0150	0.0021	7.2922	0.0000
cl2_2.5_SD_5_CAPM	Intercept (alpha)	0.0186	0.0032	5.8488	0.0000
cl3_1.5_SD_5_CAPM	Intercept (alpha)	0.0257	0.0063	4.1029	0.0001
cl3_2_SD_5_CAPM	Intercept (alpha)	0.0120	0.0027	4.3802	0.0001
cl3_2.5_SD_5_CAPM	Intercept (alpha)	0.0140	0.0051	2.7748	0.0074
mach_avg_CAPM	Intercept (alpha)	0.0156	0.0023	6.8442	0.0000

## 5. Conclusion

Overall, the results of pair trading are profitable at PSX. The results show that for various parameterization, pair trading under machine learning approach have superior returns as compared with distance approach. In the same way, the risk adjusted returns of machine learning were observed to be higher as compared with distance approach. The sector-wise results under distance approach and cluster-wise results under machine learning approach separately and as a whole are statistically significant and positive at PSX. The Sharpe ratio and Treynor ratios are also positive under the two approaches.

The results also authenticate mean revision and market neutrality at PSX. Investors can get positive returns through pair trading at PSX. As a policy implication of this study, for different portfolio and fund managers, it is suggested that they can form the pair trading strategy to reap the profitability for their clients and specially they can get higher returns by using machine learning approach. various

markets with different market conditions can yield best opportunities for pairs trading.

The study has some limitations like small sample, only one market, short sale restrictions and transaction cost was ignored. Recommendation for future research: More powerful algorithms may be developed to grasp the significant profits through pair trading amongst different financial assets.

## References

- Alexander, Carol, 2001. *Market Models: A Guide to Financial Data Analysis*. West Sussex: John Wiley & Sons Ltd.
- Blázquez, M. C., & Román, C. P. (2018). Pairs trading techniques: An empirical contrast. *European Research on Management and Business Economics*, 24(3), 160-167.
- Bogomolov, T., Pairs trading in the land down under. In Finance and Corporate Governance Conference, Melbourne, Australia, 2011.
- Caldeira, J.F. and Moura, G.V. (2013) Selection of a portfolio of pairs based on cointegration: a statistical arbitrage strategy. *Brazilian Review of Finance*, 11(1), 49–80.
- Do, B., & Faff, R. (2010). Does simple pair trading still work?. *Financial Analysts Journal*, 66(4), 83-95.
- Ecer, F. (2013). Comparing the bank failure prediction performance of neural networks and support vector machines: The Turkish case. *Economic Research-Ekonomska istraživanja*, 26(3), 81-98.
- Elliott, R. J., Van Der Hoek, J., & Malcolm, W. P. (2005). Pairs trading. *Quantitative Finance*, 5(3), 271-276.
- Gatev, E., Goetzmann, W. N., & Rouwenhorst, K. G. (2006). Pairs trading: Performance of a relative-value arbitrage rule. *The Review of Financial Studies*, 19(3), 797-827.
- Haque, S. M., & Haque, A. E. (2014). Pairs trading strategy in dhaka stock exchange: Implementation and profitability analysis. *Asian Economic and Financial Review*, 4(8), 1091.
- Huang, Z., Chen, H., Hsu, C. J., Chen, W. H., & Wu, S. (2004). Credit rating analysis with support vector machines and neural networks: a market comparative study. *Decision Support Systems*, 37(4), 543-558.
- Krauss, C. (2017). Statistical arbitrage pairs trading strategies: Review and outlook. *Journal of Economic Surveys*, 31(2), 513-545.

- Liew, R. Q., & Wu, Y. (2013). Pairs trading: A copula approach. *Journal of Derivatives & Hedge Funds*, 19(1), 12-30.
- Lin, W. Y., Hu, Y. H., & Tsai, C. F. (2011). Machine learning in financial crisis prediction: a survey. *IEEE Transactions on Systems, Man, and Cybernetics, Part C (Applications and Reviews)*, 42(4), 421-436.
- Mitchell, T. M. (2006). The discipline of machine learning (Vol. 9). Pittsburgh: Carnegie Mellon University, School of Computer Science, Machine Learning Department.
- Mudchanatongsuk, S., Primbs, J.A. and Wong, W. (2008,June) Optimal pairs trading: a stochastic control approach. In *American Control Conference*, 1035–1039.
- Myatt, G. J., & Johnson, W. P. (2014). Making Sense of Data: A Practical Guide to Exploratory Data Analysis and Data Mining (2nd ed.). New Jersey: John Wiley & Sons, Inc.
- Namwong, N., Yamaka, W., & Tansuchat, R. (2019, January). Trading Signal Analysis with Pairs Trading Strategy in the Stock Exchange of Thailand. In *International Conference of the Thailand Econometrics Society* (378-388). Springer, Cham.
- Qazi, L. T., Rahman, A. U., & Gul, S. (2015). Which pairs of stocks should we trade? Selection of pairs for statistical arbitrage and pairs trading in Karachi Stock Exchange. *The Pakistan Development Review*, 54(3), 215-244.
- Ramos-Requena, J. P., Trinidad-Segovia, J. E., & Sánchez-Granero, M. Á. (2020). Some Notes on the Formation of a Pair in Pairs Trading. *Mathematics*, 8(3), 348-361.
- Rudy, J., Dunis, C., & Laws, J. (2010). Profitable Pair Trading: A Comparison Using the S&P 100 Constituent Stocks and the 100 Most Liquid ETFs. Available at SSRN 2272791.
- Sohail, M. K., Sindhu, M. I., & Imran, M. (2020). The Secret to Cash the Profits in Pair Trading Strategies: A Case of KSE Firms, *City University Research Journal*, 10(2), 189-204.
- Zhang, H., & Urquhart, A. (2019). Pairs trading across Mainland China and Hong Kong stock markets. *International Journal of Finance & Economics*, 24(2), 698-726.

# Halal Meat Identification and Traceability Methods: Pakistan Context

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## Abstract

*Halal meat trade has shown tremendous growth globally, however, the share of Pakistan has been negligible, even though Pakistan's livestock population is considered the 4th largest in the world. Studies show that one of the principle reasons for this slow growth have been the lack of confidence shown by international buyers in the regulation of Halal slaughtering and supply chain process of meat originating from Pakistan. Although Halal certifying bodies issue certificates, these bodies frequently fail to trace the animal sourcing beyond slaughterhouse. The study investigates methods, which can be used to identify and trace Halal meat from farm to fork. Gaps are identified and steps recommended through vigorous analysis of data from industry work practices, recommendations from industry experts, factory manuals, legal documents of government and halal certifying bodies, which can be used independently, or simultaneously in various stages of Halal meat supply chain which, such as QR code, RFID and DNA testing. This can boost the image and confidence in the meat industry of Pakistan and thus contribute in increasing the share of Pakistan in the global Halal trade.*

**Keywords:** Identification, QR codes, Bar codes, DNA test, RFID technology, Species, Traceability.

**JEL Classification:** Z000

## 1. Introduction

Global consumption of meat stands at 315 million tons per year, which will reach 453 million in 2030, i.e. 44 percent increase. Out of the total global demand, Muslim population consumes 24%, and that too is dominated by non-Muslim players (80%) largely America, Australia, Brazil and India. Pakistan contributes only 0.5 percent of the total global halal food market share of around 28 M, even though Pakistan stands at fourth position regarding the number of livestock in the world.

According to the ECO of CCI and President FPCCI, Mr. Abdul Rauf Alam, although one-third of the world population is Muslim, who are willing to buy halal meat, but according to US Department of Agriculture (USDA) from 86 meat products available on shelves in US departmental

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stores, only one meat product is halal certified (NNI,2016). Demand for halal meat is on the rise among Muslim as well as non-Muslim users due to hygienic, safety and nutrition and high quality and reliability (Filson & Adekunle, 2020). Pakistan, having 169 million units of livestock, with 95 million goats and sheep, 74 million cattle and buffaloes, stands at 18<sup>th</sup> position in the halal meat production index with a capacity of 2.2 million tons , has a huge potential to increase this share in global halal meat trade if it strictly monitors trainability of diseases in livestock, implementation of certification systems, upgrading of infrastructure and storage and following of Hazard Analysis Critical Control Point (HACCP) (NNI, 2016).

Pakistan has a huge potential to export raw meat and its ready to cook and ready to eat products. This paper discusses the identification of meat from “*farm to fork*”. Different methodologies are studied in detail industry work practices, recommendations from industry experts, factory manuals, legal documents of government and halal certifying bodies and hence some suggestions are given in this paper. Even before the animal reaches the slaughterhouse for halal slaughtering, there is a sequence to identify and trace back the meat to the particular animal source. The tractability process of halal meat consists of stages including the country of birth, the country of fattening, the country of slaughter the country of cutting, the approval number of the slaughter house and the cutting hall/s (Yordanov & Angelova, 2006).

## 2. Literature Review

The term of product traceability refers to the process of maintaining documentation of the complete materials utilized in the manufacturing and handling from the purchase to the final produce, usually through some sort of marking, label or unique number which helps identify a batch or finished product. This process enables to identify and trace the origin of the product or its component. Traceability function provides an option to identify defective critical components, even after the goods have been delivered to the customer, thereby verifying any complaint and providing after sales service, in the form of recall of the particular batch (Yordanov & Angelova, 2006).

Kansas State University has published an information monograph and suggested a method for coding system. To prevent false claims, or misuse of after-sales service, the codes are encrypted to keep them safe and confidential. It is worth mentioning here that the author has not followed the confidential coding system. There are many methods of date representation, Such as solar, lunar and Julian date (Meyer, 2002).

EAN.UCC Standards in Implementing Regulation (EC) 1760/2000, has provided a guide line for ‘Traceability of Beef’, where a reference number links the pack of meat with the particular animal or batch of animals. This traceability, if maintained through electronic medium, can provide real time status of meat to help track the status from shipment, packing, storage, etc. throughout the

supply chain, holding all trading partners accountable in case of any product batch recall or further investigation of any complaints. This may go upstream, right to the individual animal's verification of the country of birth, fattening, processing, packing, etc. and requires accuracy of information as per the requirement of the beef labelling regulating bodies. This data is required to be maintained by the slaughtering house EAN.UCC Standards in Implementing Regulation. (EC) 1760/2000.

The most popular method of identifying the meat in any stage of supply chain is the DNA (deoxyribonucleic acid) testing, which carries the unique genetic codes of any breed or species. The purpose of this may vary, from the identification of the breed, the pedigree for further reproduction, or even for marketing purpose, where certain breeds are preferred over the other in a market or customer. Toronto Public Health provides a guide to understanding Halal Food. It clearly differentiates between Halal and Haram foods.

Classification of Halal Food: For example: Main dishes entrees: any *Zabihah* meat or alternative dish, pizza, without Haram foods and ingredients any grain product included in breakfast cereal or baked goods, wheat, rice, pasta, etc. without Haram ingredients, all vegetables and fruits, all juices, milk, yogurt, cheese, sea food, beverages: Soup/sauces: any made without Haram foods and ingredients. Deserts and sweets: any made without alcohol, or any other Haram ingredients. Carbonated drinks, punch, tea and coffee. Sweeteners: honey, sugar, chocolate liquor.

Classification of Haram Foods: For example: Do not use the following: Alcohol, Pork, Ham, Bacon, lard, L-cysteine, Lipase, Mono and diglycerides, Pepsin, Rennet, Sodium stearoyl-lactylate, vanilla extracts Whey is Haram if prepared with non-microbial enzymes. Some monoglycerides and diglycerides from animal sources may be present in certain margarines.

Cutler (2007) has explained that strict standards are followed for quality in kosher and halal food products and are safe for all types of consumers regardless of religion and belief. ERP (Enterprise Resource Planning) systems are applied for this traceability, since both require ingredients source identification throughout the supply chain process, right up to the delivery of the finished process to the retailer.

Cunningham and Meghen (2001) have explained that DNA (deoxyribonucleic acid) is a very important method for identification and traceability of meat. The importance of animal identification securely and accurately has been recognized in the laws governing the European Union. This is to make sure that the sample taken from a piece of meat matches the declared source of the animal or batch. This is required to ensure that produce complies to the disease control and eradication requirements and are implemented for shipments within the European Community, as well as from outside the Euro-Zone. All steps are traced through the specific code number assigned to the source and followed throughout to ensure traceability of halal meat.

Noordin et al. (2009) have done a case study for the Halal certification system throughout the value. The objective of this study was to provide understanding of Halal certification system and Halal certification process from a value chain perspective. Authors have considered all possible areas in case studies and designed a research methodology taking several stages involved in the process. This paper also provides an insight into various procedural difficulties and governance issues that need to be resolved for proper implementation of the certification process.

### 3. Methodology

The “Archival Research” (Saunders, Lewis, & Thornhill., 2007) into the case of Pakistan’s halal meat export supply chain is followed in this research. This method allows data to be collected from various published sources, such as research articles, newspapers, company archives, printed interviews of industry experts, technical papers, documents from governmental and non-governmental organizations, etc. and so allows inputs from the academic, as well as industrial sectors. A “Multi-method approach” has been adopted in this research (Saunders, Lewis, & Thornhill., 2007).

“In research multi-methods helps with the use of qualitative and calculatable information. Regardless of how your concentration should remain on one source only. Both category of data is examined through this” (Saunders, Lewis, & Thornhill., 2007).

The point of this study, the halal tractability is the point of view being concentrated upon, while going through the various sources of data. Data is collected through various published sources, which included industry work practices, recommendations from industry experts, factory manuals, legal documents of government and halal certifying bodies. Conclusions and recommendations have been deducted through the analysis of the data.

### 4. Results

Through the vigorous analysis of data collected from various diversified sources, following suggestions are given in this paper. These recommendations incorporate existing steps in halal meat traceability being followed in Pakistan, especially for exports, and identify gaps and recommendations to fill these gaps as well.

Even before the animal reaches the slaughterhouse for halal slaughtering, there is a sequence to identify and trace back the meat to the specific breed of cattle.

- a. Country of birth → b. Country of fattening → c. Country of slaughter → d. Country of cutting → e. Approval number of the slaughterhouse and cutting hall/s (Yordanov & Angelova, 2006).

As the animal is born in Pakistan, fattened in Pakistan and slaughtered in Pakistan, therefore this sequence is reduced. It is therefore suggested that once the species is identified through the numbering can be started from farm number, slaughter place, cutting place and packing place.

- a. Farm number → b. Slaughter place → c. Cutting place → d. Packing place.

This distinction has been highlighted because several breeds of cattle have been identified in the Western countries which have been developed through the GMO (genetically modified organism) process, which, if contains DNA of haram animal would not be considered halal (Khattak et al., 2011).

However, these steps concentrate upon the back-stream logistics network process, for instance the farm to the manufacturing or company premises, but do not cover the process from the company to the retailer and the end customer. There have been several cases where it was difficult to identify if the manufacturer was responsible for any contamination, or the exporter, the shipper, logistics provider, the distributor/importer or the retailer (Rejeb, 2018). Even where front-stream traceability is implemented, a single code allocated to a batch processing, limits differentiation between two deliveries from the same batch.

Recently, block chain technology has been suggested to increase traceability of halal meat in real time (Rejeb, 2018; Tieman, 2013). A comprehensive Halal Supply Chain Implementation Framework (HSCMS) has been suggested by (Lee, Hwang, & Kim, 2019).

However, the practical application of the whole process requires data input from all stakeholders from farm to fork, which requires technology to be available throughout the chain of supplies. The lack of willingness to share data, accuracy of data and the availability of facilities to collect and share this data on real time, makes this model impractical and futuristic for current Pakistani meat supply chain (Uzair et al., 2018).

#### ***4.1 Country of Birth: Species of Cows Found in Pakistan***

The role of species of cows performs a critical function in the halal logistics network of meat, since usually no documents are available in Pakistan to trace the first step of motherland of the animal. Thus, identification of the species common to the country can play an important role to verify this step in the halal meat trainability process.

Cattle found in Pakistan are humped and belong to the family *Bos indicus*, on the other hand European cattle are non-humped and are allied to *Bos taurus*.



Major local species of cows and buffaloes found in Pakistan are:

- *Nili Ravi Buffalo*: The home tract of Nili-Ravi buffalo includes Sheikhupura, Faisalabad, Okara, Sahiwal, Vehari, Pakpattan and Lahore districts of Central Punjab and Bhawalpur, Bhawalnagar and Multan areas of South of Punjab. They are mostly black, but often have white shading on the forehead and face and lower parts of legs. The yield of milk is approximately 1800-2500 litres per lactation (322 days) with 6.5 % butter fat.
- *Kundhi Buffalo*: These buffaloes can be found in several districts of Sindh province, especially on both banks of the river Indus. And on the Southern belt of the Arabian Sea. These massive animals are jet black in color and their lactation period yield is approximately 2000 litres, with over 6% fat content.
- *Red Sindhi Cattle*: This breed of cattle has its origin in the mountainous range of 'Mahal Kohistan' which spreads over parts of Thatta, Dadu and Karachi, districts in Sindh. The home tract of the breed extends to plains of Lasbella district in Balochistan and the plains area of Hyderabad. The breed is of medium built and red in colour. This is a medium-sized breed with a compact build and red body colour. Milk yield per lactation varies from 1200-2000 litres.
- *Azi-Kheli Buffalo*: This can be seen in Swat, KhwazaKhella and Mardan. Azi-Kheli colours variate, varying from complete albino animals to piebald. Milk per lactation is about 1800 litres.
- *Sahiwal Cattle*: Sahiwal cattle lives in parts of districts Sahiwal, Okara, Pakpattan, Multan, and Faisalabad in the Punjab. This breed is medium size and has a fleshy body. Females have reddish dun colour, males may have a darker colour around the orbit, neck and hindquarters. Milk yield is 1500-2200 litres per lactation with a fat content of 4.5%.
- *Cholistani Cattle*: It is found in Cholistan tract and joining colonized areas of Bahawalpur Rahimyar Khan and Bahawalnagar districts. It has white coat with speckled brown, black or red over the body including head. Udder is medium-sized with milk yield varying from 1200 to 1800 litres per lactation.
- *Holstein / Friesian*: An adjective breed which arise from Fries Land in Holland. Body shade is white or black, with red spots all over the body. The milk production is 7200-9000 litres per lactation.
- *Crossbred Animals*: Crossbred animals are the combination of two or more breeds. In Pakistan crossbreeding is recommended for nondescript breeds with semen of exotic breeds like Friesian, Jersey, Holstein, etc. with the local high producing breeds like Cholistani, Red Sindhi, Sahiwal, etc.
- *Achai Cattle*: KPK province is the breeding ground of the small-sized breed of Achai cattle. The home-tract of Achai stretches from the western borders of Afghanistan, to the western

borders of the Punjab. With a dark red body and white face, the udder is adequately developed with a daily yield of about 4 litres.

As regards cattle which cross border from India, the same breeds are found in the region and little or no cross breeding is done in those countries, minimizing chances of GMO species.

## 4.2 QR Codes

***Quick Response codes represent a type of two-dimensional matrix.***

QR code, or quick response code, is the trademark for a square scannable barcode image that allows smart phone users to link directly to a website.

An example of a QR code is the square image with block shapes that can be scanned to get more information from the printed image. This QR code, or quick response code is maintained with the slaughterhouse and is accessible throughout the supply chain.

The farm is given number of four digits. e.g. Karachi farm is designated 0000. The image will be taken by mobile phone, as shown:



Figure 1: QR Code A

After scanning QR code first column the location of farm. All slaughter houses will be numbered. The remaining columns will be showing zeros.

Table 1

*QR Code Data A*

Farm	Slaughter House	Slaughter Date	Packing Date	Outlet
0000	0000	000000	000000	00000

Then the animal is transported to the slaughter house at Karachi and the image taken with date of slaughtering is shown below:



Figure 2: QR Code B

After slaughtering a date will be added in the QR code. The slaughtering date will be added in the image. This will ensure not just the batch tractability, but also the individual animal. It was pointed out that since the head of the animal is removed after the removal of the skin, the label should not be placed on the horn or the head, but on the body part, which remain intact till the retail outlet. After scanning a date will be added and others will show zeros.

Table 2  
*QR Code Data B*

Farm	Slaughter House	Slaughter Date	Packing Date	Outlet
0000	0000	000000	000000	00000

There after the meat is supplied to the cutting place or packing place (shop or sales outlet). Here another QR code will be generated with date and outlet specification. So now, the tag contains information of the farm from where the animal originated, the identification number of the slaughterhouse, the date of slaughter, the packing date and the shipment detail. The code has provision to further add information such as the distributor ID and delivery date, warehousing, retailer detail, etc. The system can even record individual transaction to the till of the retailer and so can trace out the final consumer as well.



Figure 3: QR Code C

The same data example is denoted in the following tabular form:

Table 3  
*QR Code Data C*

Farm	Slaughter House	Slaughter Date	Packing Date	Outlet
0000	0000	000000	000000	00000

### 4.3 Bar Code

An instrument is needed to generate bar codes at the farm, which is shown below:



Figure 4: Bar Code A

In bar codes, first four digits show the number of farm and remaining digits are zeros.

When animal is transferred to the slaughter house, another bar is generated to represent the place.



Figure 5: Bar Code B

The second bar code will show the slaughter house number and the slaughtering date.

Finally, the meat will be taken to the outlet or shop, therefore another bar code will be generated with date. Hence final bar code will show complete information.



Figure 6: Bar Code C

There after the meat is supplied to the cutting place or packing place (shop or sales outlet). Here another bar code will be generated with date and outlet specification. So now, the tag contains information of the farm from where the animal originated, the identification number of the slaughterhouse, the date of slaughter, the packing date and the shipment detail. The code has provision to further add information such as the distributor ID and delivery date, warehousing, retailer detail, etc. The system can even record individual transaction to the till of the retailer and so can trace out the final consumer as well.

#### ***4.4 Radio Frequency Identification (RFID)***

There are two types of RFID tags: A passive and battery powered. A passive RFID tag will use the interrogator's radio wave energy to relay its stored information back to the interrogator. A battery powered RFID tag is embedded with a small battery that powers the relay of information.

The use of electromagnetic or electrostatic incorporating is accompanied by Radio frequency identification which is a form of wireless communication in the radio frequency portion of the electromagnetic spectrum to matchlessly an object, animal or person.

So now, the tag contains information of the farm from where the animal originated, the identification number of the slaughterhouse, the date of slaughter, the packing date and the shipment detail. The code has provision to further add information such as the distributor ID and delivery date, warehousing, retailer detail, etc. The system can even record individual transaction to the till of the retailer and so can trace out the final consumer as well.

#### ***4.5 DNA based Traceability***

DNA (deoxyribonucleic acid) technology can be used to recognise an animal's own DNA code which is everlasting and remains unchanged throughout the existence of the animal, either alive or dead. It also can be traced in cooked meat in addition to fresh products. This is required to identify the breed of the animal, since Pakistan Halal Authority (PHA) Act, 2016 section 5.10 prohibits Genetically modified food (GM F). However, as discussed earlier, this testing may only be recommended where it is required by the laws of the importing country, since it only increases the cost of shipment and sometimes delays shipment, since not all cities have these centres to conduct animal DNA testing.

### **5. Conclusion**

Thus, Pakistan can become a significant player in the global halal meat supply chain by improving its reputation in the global halal meat sector. This can be achieved by improving the reliability of the Pakistani halal meat supply management, which requires improving the identification and traceability of its meat products throughout the value chain.

Identification of species of cattle to identify and trace the initial stages of country of birth and country of fattening. Since there is no possibility of cross-contamination of non-halal DNA through GMO process in Pakistan, local breeds of meat do not need to go through the expensive process of DNA testing. However, if the breeds are of imported variety, such as Australian or Holland origin, only then a certification should be made part of SOP at the time of import into Pakistan. Quick response (QR) code is an excellent method, which can be implemented using smart phone, since

the hardware, software is available throughout the country. All stages can be recorded on computer and hence identification and traceability can be simplified. Further, bar codes are very common and the apparatus used for it is easily available. No special training is necessary to operate the unit. The results can also be stored on computers, therefore identification and traceability is also convenient. Radio frequency identification (RFID) is a modern technique and very common to trace the sample at any stage. The RFID system will not only help in traceability of the batch of the export, but can also break the batch into individual animal identification in case there is a complaint in an individual retail order delivered to the customer. DNA facility is very accurate and the records can be stored on computers. However, to implement it, a testing laboratory needs to be set up in every major city. Establishing a laboratory is very expensive and a highly experienced team is required to run the laboratory. Each test is also expensive and the cost of the setup of the laboratory is very high.

### ***5.1 Recommendations***

The reliability of halal meat at the initial process can be increased through identification of breed of cattle to be of local origin through physical examination by experts and DNA testing, which may only be performed if the breed is not identified as of local origin.

To increase the tractability of halal meat of the supply chain from Pakistan, it is recommended that although bar code can also be used, but needs special apparatus and trained staff, whereas RFID needs telecommunication system. DNA testing needs laboratory and highly specialized technicians. Therefore, authors recommend the use of QR codes as smart phones, which are readily available and the users do not require any extensive training. This method of tractability can be adopted throughout Pakistan without any complicated training throughout the supply chain. This process will also help in the identification of not just the whole of shipment batch, but also individual animal/pack up till the retail and consumer supply chain end.

This study is limited to the analysis of the existing literature available on the stages of halal meat export from Pakistan. It does not include issues faced by the poultry export industry or the mutton or sheep meat sector. However, similar steps may be adopted in the mutton and sheep meat export as well. Further study can be done in the sector by initiating a pilot research to implement the steps recommended in this study, thereby identifying any practical hindrances in the implementation process. Further this study only includes limited discussion of the compliance requirements of the importing countries, which needs to be constantly upgraded and communicated to the concerned stakeholders.

The theoretical contribution of the study includes the addition of identification of the breed of animal and the issues in domestic, imported and mixed breeding. Further, the introduction of mobile based bar code system provides cost effective system of verification from the farm to fork. The applicative contribution of this paper for the Pakistani hall meat industry being the increase in

reliability of the traceability stages will increase the export opportunity and help in complying to the international demands through cost effective procedures, which if implemented, can help make Pakistan a major player in the international halal meat market. The paper also contributes to the policy makers, who can revisit the export policies to make standard operative procedures in the light of the above recommendations to make the system of export of halal meat easy, transparent and reliable. Thus, implementation upon the recommendations of this paper will help Pakistani Halal Meat Exports and earn greater foreign exchange, and ensure employment opportunities for the rural as well as urban population.

## References

- Cunningham, E. P., & Meghen, C. M. (2001). Biological identification systems: genetic markers. *Revue Scientifique et Technique-Office International des Epizooties*, 20(2), 491-499.
- Cutler, T.R. 2007. Food safety drives growth in Kosher & Halal foods. Retrieved from [http://www.halalrc.org/images/Research%20Material/Literature/Food%20Safety%20Drives%20Growth%20in%20Kosher%20 %26%20Halal%20Foods.pdf](http://www.halalrc.org/images/Research%20Material/Literature/Food%20Safety%20Drives%20Growth%20in%20Kosher%20%26%20Halal%20Foods.pdf). Accessed 21 June 2016
- Filson, G., & Adekunle, B. (2020). Understanding halal food market: Resolving asymmetric information. *Food Ethics*, 5(1-2), 1-22.
- Khattak, J. Z. K., Mir, A., Anwar, Z., Abbas, G., Khattak, H. Z. K., & Ismatullah, H. (2011). Concept of halal food and biotechnology. *Advance Journal of Food Science and Technology*, 3(5), 385-389.
- Lee, H. Y., Hwang, H. J., & Kim, D. H. (2019). Issues of Halal Supply Chain Management: Suggestion for Korean Traders. *Journal of Korea Trade*, 23(8), 132-144.
- Meyer, P. (2002). Julian day numbers. *Hermetic Systems*. [http://www.hermetic.ch/cal\\_stud/jdn.htm](http://www.hermetic.ch/cal_stud/jdn.htm).
- NNI (2016, February 24). Pakistan has negligible share in global halal food market. *The Nation*. Retrieved from <https://nation.com.pk/24-Feb-2016/pakistan-has-negligible-share-in-global-halal-food-market>
- Noordin, N., Noor, N. L. M., Hashim, M., & Samicho, Z. (2009, July). Value chain of Halal certification system: A case of the Malaysia Halal industry. In *European and Mediterranean conference on information systems* (1-14).
- Rejeb, A. (2018). Blockchain potential in Tilapia supply chain in Ghana. *Acta Technica*

---

*Jaurinensis*, 11(2), 104-118.

Saunders, M., Lewis, P., & Thornhill, A. (2007). Research methods (4th ed.). Upper Saddle River, NJ: Prentice Hall.

Tieman, M. (2013). Establishing the principles in halal logistics. *Journal of Emerging Economies and Islamic Research*, 1(1), 19-31.

Uzair, M.M., Karim, E., Sultan, P., Ahmed, S.S.: The Impact of Block Chain Technology on the Real Estate Sector Using Smart Contracts, MPRA Paper No. 89038. Retrieved from <https://mpra.ub.uni-muenchen.de/88934>

Yordanov, D., & Angelova, G. (2006). Identification and traceability of meat and meat products. *Biotechnology & Biotechnological Equipment*, 20(1), 3-8.



# Psychological Patterns regarding Environmental Conscious Behavior among Pakistani Customers

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## Abstract

*Maintaining a clean and healthy environment is necessary for survival of humanity. Environmental responsive behavior refers to the individual's efforts to protect the environment. The current study examines the effect of psychological factors affecting the adoption of green purchase behavior (GPB) by selecting a sample from Pakistani consumer. Data collection was made via adopted questionnaire. The data was analyzed through structural equation modeling. Results affirmed that five psychological dimensions significantly support customers to adopt green purchase behavior. The results also revealed that "attitude" has the strongest impact on green purchase behavior followed by "concern" whereas the factors having moderate relationship with the purchase behavior included perceived consumer effectiveness (PCE), motivation to adopt green behavior and intention to act.*

**Keywords:** Perceived effectiveness, Concern for environment, Motivation, Intention to act, Green Behavior, Pakistan.

**JEL Classification:** Z000

## 1. Introduction

The past decades have highlighted the people's concern for protecting the environment (Kim & Choi, 2005). Stakeholders including consumers are increasingly demanding social and environmental friendly practices from producers of goods and services (Fischer et al., 2005). This concern is expressed by consumers through ethical buying and environmental conscious purchase

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behavior (De Pelsmacker et al., 2005). As a result, marketers, identifying this growing segment, have developed different forms of labels e.g. organic products, green products, fair trade products, animal well-being or legally logged wood etc. and have started offering environmental friendly/ green products (Kohl & Fawcett, 1995). Despite the fact that majority of consumers in developing countries markets link their purchase decisions with their environmental concerns only few environmental friendly products are successful (Chase & Smith, 1992).

Environmental responsive behavior refers to the individual's efforts to protect the environment (Kollmuss & Agyeman, 2002). Green purchase behavior (GPB) is the one in which individuals purchase those products that are less harmful and have less negative impact on the environment (Minton & Rose, 1997; Rehman & Khyzer, 2013). There is difference in the green purchase behavior and general purchase related consumer behavior. The general purchase behavior is based on assessing the benefits and cost linked with only the individual consumer who is performing the behavior. However, the former, green purchase behavior, is linked with future-oriented outcomes and benefits to society as a whole (McCarty & Shrum, 2001). The protection of environment is equally the duty of citizens in comparison to the government institutions (Fraj & Martinez, 2006).

Prior research in green purchase behavior area has focus on either identifying factors for motivating customers towards adopting environmental friendly behavior (e.g., Bagozzi & Dabholkar 1994; Lee & Holden, 1999) or identifying difference in the impact of cognitive and motivational factors on pro-environmental behavior (e.g., Dietz, Stern, & Guagnano, 1998; Karp, 1996; McCarty & Shrum, 1994). Accordingly, academic research has identified several factors including environmental concern, perceive consumer effectiveness or consumer's belief to reduce the environmental issue (Elle, Weiner, & Cobb- Walgren, 1991), and welfare of society (McCarty & Shrum, 2001) that help in the identification of environmentally conscious behavior.

As majority of the literature related to green purchase behavior is originated from developed countries, the purpose of this study is to develop a framework to test the influences of consumer psychological factors such as environmental concerns (EC), perceive consumer effectiveness (PCE), motivation (M) and action (A) on green buying behaviors in a developing country, Pakistan. Moreover, the study also tries to clarify how these factors are related to each other. This study will help in the generalization of the finding in a developing country and further extends the understanding of what drives green buying behavior. Moreover, the public policy makers and marketers will be benefited from the results of this study.

## 2. Literature Review

The effort of individuals to protect the environment from problems is known as environmental responsive behavior (Kollmuss & Agyeman, 2002). By adopting responsive behavior individuals purchase the products having rare negative environmental impacts (Minton & Rose, 1997) this

includes decisions such as purchasing and using appliances that consume less energy, emit less chlorofluorocarbon and carbon dioxide etc. (Rehman & Khyzer, 2013). This is also known as pro-environmental behavior (Han, 2015) or green purchase behavior (Saleem & Gopinath, 2013; Nemati & Sajadi, 2015).

Green purchase behavior indicates purchasing and using environment friendly products (Rehman & Khyzer, 2013). While showing green purchase behavior consumer give preference to purchase products that are eco-friendly, avoid such products that harm the health and damage the environment during use, production and disposal (Gandhi & Sen, 2013). This behavior is influenced by various factors including knowledge about environment, their environmental consciousness, awareness, altruism, collectivism and clear information about products (Kaufmann, Panni, & Orphanidou, 2012). High income and better educated consumers are more willing to buy eco-friendly product (Junaedi, 2012). Similarly, according to Gopalakrishnan and Muruganandam (2013) it is influenced by promotion, cost, attitude, product attributes, environmental impact, product benefits, and knowledge and product performance.

Kumar (2012) while applying theory of planned behavior (Ajzen, 1991) for the study of purchasing behavior for environmentally sustainable products indicates that the green purchase behavior is influenced by attitude, subjective norms and perceived behavioral control. However, A Swedish study on a sample of 200 consumers identified the factors determining the green purchase behavior, such as, green knowledge, eco literacy, attitude, green belief, environmental laws and guidelines and willingness to pay. Whereas subjective norms and social influenced found as weak link (Memar & Ahmed, 2012).

Tan and Lau (2010) study conducted in Malaysia on a sample of 220 undergraduate university students revealed the factors that determined the green purchase intentions included one's general attitude about the environment, strength of green purchase attitude and the perceived consumer effectiveness.

## ***2.1 Developing Country Context***

Pakistani society has been exposed to various changes due to technological advancements. These changes resulted in excessive use of electronic items such as computers, cell phones, scanners and printers consequently producing electronic waste as in the case of advanced countries. Developing countries are even more exposed to environmental pollution in terms of carbon dioxide emission that is on the rapid increase. Carbon dioxide emits from home appliances e.g. cooking range, gas heater, furnaces etc. Pakistan being a developing country is facing a problem of rise in carbon dioxide (Tahirkheli et al., 2012). The use of home appliances such as refrigerators and air conditioners emit chlorofluorocarbons that have two major negative environmental effects; they deplete the ozone layer and contribute to global warming.

## **2.2 Psychological Factors**

Psychological factors refer to the individual perception, feelings, belief and thoughts that affect the individual behavior. Psychological factors of attitude are important for the people to take particular action (Ajzen, 1991). Psychological aspects of cognition, emotion and behavior play an important role in shaping individual's attitudes that influences his or her behavior in response to certain marketing stimuli (Jakštienė, Susnienė, & Narbutas, 2008). The important psychological factors used in the current study are discussed below.

## **2.3 Environmental Concern and Green Purchase Behavior**

Consumer concern for the environment is fundamental to green product purchase behavior research (Hines, Hungerford, & Tomera, 1987). It is an individual's general orientation toward environment and can range from recycling behavior to green buying behavior (Kim & Choi, 2005). Consumers with stronger concerns are more likely to engage in pro-environmental behaviour and are likely to purchase green products than those who are less concerned. Consumers engage in pro-environmental behaviour because of their concern for environment and society (Bamberg, 2003). Many studies have identified the impact of environmental concern on green purchase behaviour (Hartman & Apaolaza-Ibáñez, 2012). It has also been identified that green products consumer show higher environmental concern compared to general public (Clark, Kotchen & Moore, 2003; Hansla et al., 2008).

The environmental concern is the awareness of the environmental problems and effort to minimize those problems (Dunlap & Jones, 2002). Environmental concern defined as an individual aware of environmental issues and problems and the individuals willing and attempts to solve the environment problems (Bamberg, 2003). It is assumed that the environmental concern is similar to the environmental attitude (Chan & Lau, 2004).

While applying theory of reasoned action on green energy consumption, Bang et al. (2000) identified that attitude toward using the renewable energy mediates the relationship of PEC and purchase intentions, thus providing the grounds for testing other constructs in-between. Similarly, Hansla et al. (2008) found the positive effects of PEC on green products purchase willingness. Based on the arguments it is derived that the concern for protecting the natural environment is a diver to make decisions to purchase green products and hence the following hypothesis is proposed:

*H1: Environmental concern has significant impact on green purchase behavior.*

## ***2.4 Perceived Consumer Effectiveness and Green Purchase Behavior (PCE – GPB)***

It is one's perception of his / her ability to ensure cleaner environment (Berger & Corbin, 1992) for reducing the environmental problems (Ellen, Weiner, & Cobb-Walgren, 1991). PCE vary from individual to individual due to differences in their knowledge and experience (Kim & Choi, 2005). The consumers with stronger concern are inclined to adopt positive behaviors that protect the environment. The consumers with low environmental concern tend to make their buying decisions based on low price instead of environment protection, thus showing least concern for the environment and their society (Bamberg, 2003).

Perceived consumer effectiveness is the consumers believe that their action will impact the environment in a positive way (Webb, Mohr, & Harris, 2008; Kim & Choi, 2005). At the same time a study on undergraduate students by Tan and Lau (2010) validated the finding of Kim and Choi (2005) having positive relationship between PCE and GPB. It is different from environmental concern and attitudes however, help in the prediction of green purchase behavior (Ellen, Weiner, & Cobb-Walgren, 1991). PCE, belief in environmental friendly product buying, determinates how hard a consumer will look for green products during buying situations (Thøgersen, 2000). Therefore, the following hypothesis is placed:

*H2: Perceived consumer effectiveness has significant impact on green purchase behavior.*

## ***2.5 Environmental Attitude and Green Purchase Behavior***

The attitude towards actions or objects is formed by behavioral beliefs (Ajzen & Fishbein, 1980; Iravani et al., 2012). The basic understanding developed in the mind of an individual regarding a certain behavior may lead to positive or negative results. If the result of that understanding is positive, it results in the adoption of a certain behavior.

Tan and Lau (2010) deteriorating environment has become a public concern in the developed as well as developing countries. Attitude can be defined as a mental and moral state of readiness to adopting certain response (Allport, 1935) whereas, the environmental concern is defined as one's concept of self and the extent to which he feels himself a part of the natural environment (Schultz, Zelezny & Dalrymple, 2000). The people feeling closer to the environment generally think positively about their surroundings and adopt activities based on environmental protection such as recycling and so forth (Abdul, 2007).

A general belief prevails among academicians and environmental scientists that purchasing and using environmental friendly products characterized with recyclable packaging or properly disposing help in improving the quality of the environment while Abdul (2007) and Beckford et al.

(2010) are of the views that green purchase intentions lead to green purchase. Based on the above findings the following hypotheses proposed:

*H3: Environmental attitude has significant impact on green purchase behavior.*

## ***2.6 Motivation and Green Purchase Behavior***

Motivation is as the process allocated energy to maximize the satisfaction of needs (Pritchard & Ashwood, 2008). It is as activation of internal needs and desires that energizes the behavior (Pittman, 1998). Motivation acts as an internal stimuli and a reason for any behavior (Kollmuss & Agyeman, 2002). It is around which behavior is organized (Moisander, 1998) and is shaped by its intensity and selection from all possible options (Kollmuss & Agyeman, 2002). Environmental motives can be of two types, primary motives or larger motives e.g. environmental life styles or selective motives that have an influence on a specific action.

Motivated customers generally have three characteristics such as, they have higher intensity of green purchases, they keep on buying the green products thus showing persistence and finally they always choose to buy the environmental friendly products (Campbell & Pritchard, 1976; Weiner, 1980, Weitz, Sujan, & Sujan, 1986). Intensity shows the mental and physical effort used to purchase the product, persistence is consistency in making efforts to purchase the same or similar products and choice is about selection of a behavior. Motivation can be intrinsic, for the sole pleasure and satisfaction derive from its practice or can be extrinsic to avoid negative consequences or to bring positive outcomes.

Green-Demers, Pelletier, and Ménard (1997) after analyzing data collected from 444 respondents identified that environmental motivation significantly predicts the occurrence of environmental behaviours in individuals. Similarly, behaviors developed after self-determined environmental motivation could be maintained once they are developed (Green-Demers et al., 1997). Based on the above findings the following hypothesis is proposed:

*H4: Motivation has significant impact on green purchase behavior.*

## ***2.7 Intentions to Act and Green Purchase Behavior***

Action is based on the awareness about something that leads to change (Elliott, 2013). Schwartz' (1977) theory of altruism argues that environmental friendly behavior is likely when individuals feel threatened while living in a society and takes protective steps for changing the depleting conditions of the surroundings. The threatened individuals want to avoid health hazards and thus take steps to avoid unclean environment while living there.

There is a lack of clarity in the debate on the related aspects of environmental education concerning 'action' and 'behavior' (Jensen, 2002). According to Kollmuss and Agyeman (2002) Pro-environmental behavior consciously seeks to minimize the negative impact of one's actions on the surroundings. Pro-environmental behaviors are actions directed towards the environmental improvements (Jensen, 2002). Hines, Hungerford, and Tomera (1987) while discussing the predictors of pro-environmental behavior have identified that both action skills and intentions to act can have an impact on pro-environmental behavior of individuals. Hence, based on literature findings following hypothesis is proposed:

*H5: Intentions to Act has significant impact on green purchase behavior.*

### **3. Methodology**

#### **3.1 Sample**

In this study the customers of electronic goods in the Punjab province were taken as a population of the study. The Punjab population was divided into two specific groups (strata) on the base of gender proportion: male and female. In order to gain diversity data were collected from four cities of the Punjab namely Attock, Rawalpindi, Lahore and Faisalabad. These cities have been selected on the basis of easy accessibility, time and cost constraints.

The easiest way to collect the data is through convenience sampling (Saunders, Lewis, & Thornhill, 2009) as it may provide a good overview of the characteristics of the population studied (Malhotra & Birks, 2007). The nonprobability convenience sampling method was used for data collection. Similar studies on green purchase behavior, conducted earlier, have also used the non - probability convenience sampling (Muruganandam & Gopalakrishnan, 2013; Irawan & Darmayanti, 2012; Tan & Lau, 2010).

The Population of the Punjab, 96,676,000 million (Bureau of Statistics-Punjab, 2012) was considered for the computation of the sample size. 95% confidence level was used with corresponding confidence interval of 0.5. Using these given values, the sample size is calculated that was equal to 384 respondents (See for sample size; Hucl et al., 2013). This sample included male (52 %) and female (48 %). A total of 384 questionnaires were distributed, 312 complete responses were received. The response rate was 81%.

#### **3.2 Measures**

PCE and Environmental Concern were measured with the help of five items each adopted from Kim and Choi (2005), Environmental Attitude and Intentions to act were measured with the help of four items each the sample item for environmental attitude is "More environmental protection

activities are needed in Pakistan.” and for intention to act is “I encourage others to purchase environmental-friendly appliances”. Motivation was measured with the help of seven questions and Green Purchase behavior was measured with the help of four items adopted from Kim and Choi (2005).

All the constructs except the demographic variables were measured using 5-point Likert scales, ranging from “1” (strongly disagreed) to “5” (strongly agreed), see table 1. The reliability of the constructs is also mentioned in table 1. The questionnaire used was in English language as the respondents were university students who could easily provide answers to the statements written in the questionnaire.

Table 1

*Latent and Observed Variables and Cronbatch's Alpha Values of Constructs*

Variables	Observed Variables	Adopted from
Perceive Consumer Effectiveness	PCE1: Each person's behavior can have a positive effect on society by signing a petition in support of promoting the environment. PCE2: I feel I can help solve natural resource problem by conserving water and energy. PCE3: I can protect the environment by buying products that are friendly to the environment. PCE4: There is not much that I can do about the environment (R). PCE5: I feel capable of helping solve the environment problems.	Kim and Choi (2005)
Environmental Concern	EC1: I am extremely worried about the state of the world's environment and Concerns what it will mean for my future. EC2: Mankind is severely abusing the environment. When humans interfere with nature it often produces disastrous consequences. EC3: The balance of nature is very delicate and easily upset. EC4: Humans must live in harmony with nature in order to survive.	Kim and Choi (2005)
Intentions to Act	A1: I warn others to protect the environment. A2: I encourage others to purchase environmental-friendly appliances. A3: I behave in an environmental conscious way. A4: I generally save energy by using environmental-friendly appliances.	

(Table Continued...)



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Motivation	<p>M1: I purchase environmental-friendly appliances because environment is very important for me.</p> <p>M2: I purchase environmental-friendly products because I want to preserve the earth.</p> <p>M3: I purchase environmental-friendly appliances because I am concerned about climate warming.</p> <p>M4: I purchase environmental-friendly appliances because green appliances use less energy.</p> <p>M5: To protect the environment of the place I live in is very important for me.</p> <p>M6: I do not harm the environment by purchasing environmental-friendly appliances.</p> <p>M7: It is important for me to live a healthy life.</p>	
Environmental Attitudes	<p>EA1: It is essential to promote green living in Pakistan.</p> <p>EA2: More environmental protection activities are needed in Pakistan.</p> <p>EA3: It is very important to raise environmental awareness among Pakistani people.</p> <p>EA4: I appreciate the appliances that are environmental friendly.</p>	Iravani et al.(2012)
Green Purchase Behavior	<p>GPB1: I make a special effort to buy paper and plastic products that are made from recycled materials.</p> <p>GPB2: I have switched products for ecological reasons. When I have a choice between two equal products, I purchase the one less harmful to other people and the environment.</p> <p>GPB3: I make a special effort to buy household chemicals such as detergents and cleansing solutions that are environmentally friendly.</p> <p>GPB4: I have avoided buying a product because it had potentially harmful environmental effects.</p>	Kim and Choi (2005)

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### 3.3 Common Method Variance (CMV)

The CMV is related to the self-reported data (Podsakoff et al., 2003). Harman's one factor test was used before hypothesis testing to avoid possible threats of CMV. This resulted in 39% variance thus showing that the data is free from CMV.

### 3.4 Reliability

The reliability was checked using Cronbach's Alpha. The alpha values for each latent construct were between 0.897 and 0.933 thus showing adequate reliability of the constructs. Further the composite reliability was computed using the measurement model outputs. The composite reliability value is between 0.60-0.88, see table 2.

### 3.5 Validity

The convergent validity was assessed by loading indicators on their respective constructs that showed significant results ( $p < 0.001$ ) with regression weights greater than 0.65. At the same time for each variable the value of the squared multiple correlation was greater than 0.45 showing adequate validity.

Moreover, the Fornell and Larcker (1981) method was used for examining the discriminant validity. According to this model the AVE (Average Variance Extracted) for a separate variable must be above the shared variance of the other variables. No issue of discriminant validity was found in the model.

Table 2  
*Alpha, Composite Reliability, Correlations and Shared Variance for Constructs*

Variable	No of items	Alpha	CR	1	2	3	4	5	6
1 EC	4	.82	.82	.54					
2 PCE	4	.86	.85	.61* (.37)	.60				
3 EA	3	.90	.89	.28* (.07)	.32* (.10)	.74			
4 M	6	.89	.87	.74* (.54)	.49* (.24)	.40* (.16)	.61		
5 IA	4	.87	.88	.66* (.43)	.74* (.54)	.24* (.05)	.55* (.30)	.64	
6 EB	4	.81	.81	.51* (.26)	.45* (.25)	.69* (.47)	.41* (.16)	.29* (.08)	.53

Shared variance in parenthesis; AVE in diagonal; \*P < 0.01; CR: Composite Reliability

## 4. Results

### 4.1 Model Estimation and Analysis

The SEM was used for data analysis and as a first step is the fitting of the measurement model or Confirmatory Factor Analysis was conducted through Maximum Likelihood Estimation (MLE) method that resulted in the acceptable results.

### 4.2 Confirmatory Factor Analysis / Measurement Model

The tested model resulted in the t-values greater than 2.50 for each construct, along with the factor loadings greater than 0.5 except for PCE1 and M7 that were removed as per the directions of

the experts (Jöreskog & Sörbom, 1996). Similarly, EC3 and EA4 were also removed.

#### 4.3 Structural Model and Hypothesis Testing

The results of structural model were assessed through the beta weights, see table 3 for the impact of factors effecting environmental behavior of individuals. The weights fluctuate between 0 and 1 and the weights closer to 0.5 are considered as moderate weights (Kline, 2005). Effect of EA and PCE on environmental behavior was found to be strong with weights of 0.62 and .50, while effect of PCE, IA and Motivation on EB was moderate.

Table 3  
Structural Model

Causal Path	Un-standardized coefficient	Standardized Regression Weights	t-value	Hypotheses Supported
EC => EB	0.409*	0.505	4.370	Yes
PCE => EB	0.214**	0.202	2.349	Yes
EA => EB	0.509*	0.621	8.972	Yes
M => EB	0.162**	0.185	1.987	Yes
IA => EB	0.206*	0.252	2.571	Yes

Goodness of fit Indices

$\chi^2 = 631$  ; d.f. = 260;  $\chi^2/\text{d.f.} = 2.42$ ;  $p < 0.00$ ; Comparative Fit Index (CFI) = 0.92; Incremental Fit Index (IFI) = 0.92

;Goodness of Fit Index (GFI) = 0.86; Adjusted Goodness of Fit Index (AGFI) = 0.83; Root-mean-square residual (RMR) = 0.05; Root-mean-square error of approximation RMSEA = 0.07

\*significant at 0.01 \*\*significant at 0.05

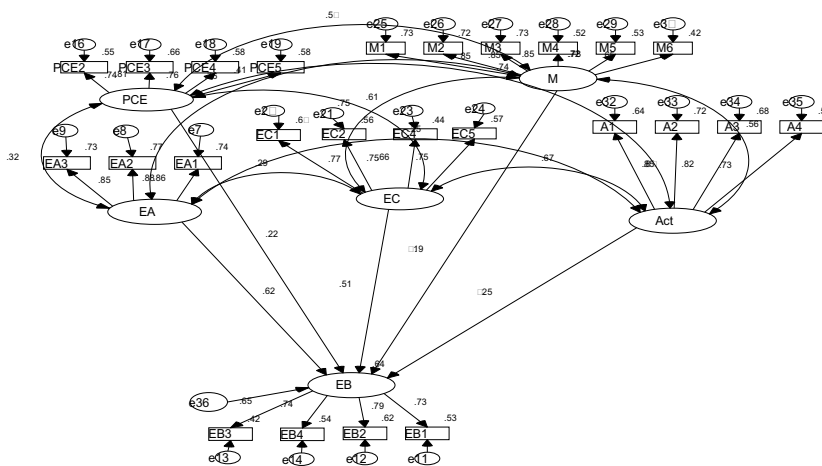


Figure 1: Structural Model

## 5. Conclusion

The major objective of this study was to examine the impact of psychological factors affecting the green purchase behavior of Pakistani customers. For this purpose, five dimensions of psychological factors were considered including perceived consumer effectiveness, environmental concern, environmental attitude, motivation and action (Kotler, Kevin, & Walter, 2007; Masouleh et al., 2013).

Psychological aspects play an important role to shape the individual's behavior i.e. customer behavior to purchase (Jakštienė, Susnienė, & Narbutas, 2008). It depicts that psychological factors play an important role to shape respondents' behavior to purchase. These findings are consistent with other studies that psychological factors have significant influence on green purchase behavior (Schlegelmilch, Bohlen, & Diamantopoulos, 1996; Laroche, Bergeron, & Forleo, 2001; Iravani et al., 2012; Heckler, 1994). This study found that all five dimensions of psychological factors; Perceived consumer effectiveness, environmental concern, environmental attitude, motivation and intentions to act significantly influenced the green purchase behavior of Pakistani customers.

Perceived consumer effectiveness is the individual belief that their actions of purchasing environmental friendly products will help to solve the environmental problems (Ellen, Wiener, & Cobb-Walgren, 1991). It seems that respondents' belief that their actions of purchasing environmental friendly products will help to solve the problems of environment. This finding is consistent with the findings of Tan and Lau (2010) that show perceived consumer effectiveness has an impact on green purchase behavior. Findings also supported the theory of planned behavior and theory of reasoned action that attitude influenced the behavior and attitude refers to the beliefs about the consequences of the behavior to take action (Ajzen, 1991; Ajzen & Fishbein, 1980).

Environmental concern relates to the awareness of environmental problems and their action to solve it (Dunlap & Jones, 2002). On the base of empirical findings environmental concern has significant impact on green purchase behavior of Pakistani customers. It seems that respondents have no awareness of environmental problems to take action to solve them. This finding was consistent with the study of Irawan and Darmayanti (2012) that found environmental concern as significant predictor of green purchase behavior. Another study also validated these findings that environmental concern directly influences the green purchase behavior (Kim & Choi, 2005). However, this finding is contradicted by the findings of Rehman, Khyzer and Dost (2013) that environmental concern has no affect on the green purchase behavior of individuals.

Motivation refers to the internal desires that energizes the behavior to take action (Pittman, 1998). Base on the empirical findings, motivation has an impact on green purchase behavior of Pakistani customers. It depicts that respondents have internal desires to energize their behavior to

take action in response to environmental protection. This finding was consistent with other studies that motivation plays an important role in influencing green purchase behavior (Tan, 2011; Thidell & Leire, 2004). The findings are consistent with the theory of altruistic behavior that altruistic motive play an important role to drive the behavior to respond to the environment in a better way (Heberlein, 1972). It depicts that motivation plays an important role to derive the green purchase behavior.

Action refers to the response of consumers (Hallahan, 2000). On the base of empirical findings, the intentions to act has significant influence on green purchase behavior. It seems that respondents show response to solve environmental problems. The findings by supported the theory of reasoned action that action leads the behavior (Ajzen & Fishbein, 1980). It depicts that action leads to the green purchase behavior.

Five out of the five hypotheses proposed are upheld. The world is currently facing different environmental problems and issues that are seriously influencing human life. In this case a better living can be ensured through environmental protection. It can be made possible by considering the psychological factors influencing green purchase behavior of Pakistani customers. The findings reveal that psychological factors such as perceived consumer effectiveness - PCE, environmental concern, environmental attitude, motivation and intentions to act have a strong impact on green purchase behavior. It is concluded that psychological factors have strong impact on green purchase behavior. The green purchase behavior among Pakistani customers may be enhanced by the use of psychological factors of perception, concern, attitude motivation, and intentions to act.

### ***5.1 Implications***

Like any other study related to learning and adopting preferred behavior the current study has highlighted the factors enabling consumers to adopt pro-environmental behavior. The study found that Psychological factors as a whole do have significant impact on the adoption of green purchase behavior, whereas while looking at the psychological factors considered for the study the results revealed that perceived consumer effectiveness (PCE), environmental attitude and concern, motivation to adopt green purchase behavior and intention to act have significant effect on the adoption of green purchase behavior. It is important to note that due to the ever increasing awareness about environmental protection globally the people living in Pakistan have also become conscious about the environment in which they live. They have been motivated to adopt such behavior and are willing to take such actions that are in line with pro-environmentalism. This puts demand on the companies and marketer to introduce products that have less negative impact on the environment and create environmental awareness through advertising and promotional campaigns that encourage and enhance green purchase behavior in Pakistan.

It also enables the policy makers to use social-psychological approaches of social marketing techniques to encourage the environmental responsive behavior in Pakistan. The environmental policy

of Pakistan is based on participatory approach to achieve the sustainable development objective through administratively, legally and technically sound institutions. The economic policy of Pakistan needs to manage the environmental resources of Pakistan efficiently.

Government need to play an important role in environmental protection through encouraging the developments of green products. The government need to encourage the production and development of environmental friendly products that reduces the emission of carbon dioxide and consumption of chlorofluorocarbons. It should also encourage the imports of environmental friendly products by decreasing the taxes and duties so that each person in Pakistan prefers to purchase environmental friendly products.

### **5.2 Limitations & Future Research**

Like other research studies conducted in the fields of social and management sciences the current study also possesses few limitations. One province was selected due to limited time framework of study. This study is confined to non- probability convenience sampling technique because the aim of the study was to determine the actual green purchase behavior of general customers and in case of general customer's random selection is not possible due to lack of resources. The sampling framework was limited to Attock, Rawalpindi, Lahore and Faisalabad due to easy accessibility and cost constraint. It is difficult to consider all factors due to limited available resources so only five dimensions of psychological factors were considered for the prediction of green consumer behavior. So there is a need to determine other dimensions also for future study. The respondents of only home appliances customers were taken due to time and cost constraints.

It is recommended that future research consider other provinces of Pakistan to get responses from the broader geographical area for better results. The comparative study may be carried out in future by comparing the occupational and cultural differences on green purchase behavior of Pakistani customers. The study may be carried out in future by considering probability sampling methods to generalize the results of the study. In future the study may be done by considering some other sectors like FMCG (fast-moving consumer goods) etc. Future research studies may also consider the other dimensions of social, psychological and demographic factors on green purchase behavior.

### **References**

- Abdul-Muhmin, A. G. (2007). Explaining consumers' willingness to be environmentally friendly. *International Journal of Consumer Studies*, 31(3), 237-247.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.

- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.
- Allport, G. W. (1935). Attitudes. In C. M. Murchison (Ed.), *Handbook of Social Psychology* (798-844). Worcester, MA: Clark University Press.
- Bagozzi, R. P., & Dabholkar, P. A. (1994). Consumer recycling goals and their effect on decisions to recycle: A means-end chain analysis. *Psychology & Marketing*, 11(4), 313-340.
- Bamberg, S. (2003). How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. *Journal of Environmental Psychology*, 23(1), 21-32.
- Bang, H. K., Ellinger, A. E., Hadjimarcou, J., & Traichal, P. A. (2000). Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology & Marketing*, 17(6), 449-468.
- Beckford, C. L., Jacobs, C., Williams, N., & Nahdee, R. (2010). Aboriginal environmental wisdom, stewardship, and sustainability: lessons from the Walpole Island First Nations, Ontario, Canada. *The Journal of Environmental Education*, 41(4), 239-248.
- Berger, I. E., & Corbin, R. M. (1992). Perceived consumer effectiveness and faith in others as moderators of environmentally responsible behaviors. *Journal of Public Policy & Marketing*, 11(2), 79-89.
- Campbell, J. P., & Pritchard, R. D. (1976). Motivation theory in industrial and organizational psychology. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (63-130). Chicago: Rand-McNally.
- Chan, R. Y., & Lau, L. B. (2004). The effectiveness of environmental claims among Chinese consumers: Influences of claim type, country disposition and ecocentric orientation. *Journal of Marketing Management*, 20(3-4), 273-319.
- Chase, D., & Smith, T. K. (1992). Consumers keen on green but marketers don't deliver. *Advertising Age*, 63(26), 2-14.
- Clark, C. F., Kotchen, M. J., & Moore, M. R. (2003). Internal and external influences on pro-environmental behavior: Participation in a green electricity program. *Journal of Environmental Psychology*, 23(3), 237-246.
- De Pelsmacker, P., Janssens, W., Sterckx, E., & Mielants, C. (2005). Consumer Preferences for the Marketing of Ethically Labelled Coffee. *International Marketing Review*, 22(5), 512-530.

- Dietz, T., Stern, P. C., & Guagnano, G. A. (1998). Social structural and social psychological bases of environmental concern. *Environment and Behavior*, 30(4), 450-471.
- Dunlap, R. E., & Jones, R. E. (2002). Environmental concern: Conceptual and measurement issues. *Handbook of Environmental Sociology*, 3(6), 482-524.
- Ellen, P. S., Wiener, J. L., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of Public Policy & Marketing*, 10(2), 102-117.
- Elliott, R. (2013). The taste for green: The possibilities and dynamics of status differentiation through “green” consumption. *Poetics*, 41(3), 294-322.
- Fischer, G., Shah, M., N. Tubiello, F., & Van Velhuizen, H. (2005). Socio-economic and climate change impacts on agriculture: an integrated assessment, 1990–2080. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 360(1463), 2067-2083.
- Fishbein, M., Jaccard, J., Davidson, A. R., Ajzen, I., & Loken, B. (1980). Predicting and understanding family planning behaviors. In *Understanding attitudes and predicting social behavior* (130-147). Prentice Hall.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Fraj, E., & Martinez, E. (2006). Environmental values and lifestyles as determining factors of ecological consumer behaviour: an empirical analysis. *Journal of Consumer Marketing*, 23(1), 133-144.
- Gandhi, M., & Sen, K. (2013). Environmentally responsive consumption: A study of young consumers in India. *International Journal of Multidisciplinary Thought*, 3(2), 439-447.
- Gopalakrishnan, M. S., & Muruganandam, D. (2013). A micro analysis on dissect of consumer's to procure green products. *Life Science Journal*, 10(2), 123-145.
- Green-Demers, I., Pelletier, L. G., & Menard, S. (1997). The impact of behavioural difficulty on the saliency of the association between self-determined motivation and environmental behaviours. *Canadian Journal of Behavioural Science*, 29(3), 157-166.
- Hallahan, K. (2000). Inactive publics: the forgotten publics in public relations. *Public Relations Review*, 26(4), 499-515.
- Han, H. (2015). Travelers' pro-environmental behavior in a green lodging context: Converging value-belief-norm theory and the theory of planned behavior. *Tourism Management*, 47(1), 164-177.



- Hansla, A., Gamble, A., Juliusson, A., & Gärling, T. (2008). Psychological determinants of attitude towards and willingness to pay for green electricity. *Energy Policy*, 36(2), 768-774.
- Hartmann, P., & Apaolaza-Ibañez, V. (2012). Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern. *Journal of Business Research*, 65(9), 1254-1263.
- Heberlein, T. A. (1972). The land ethic realized: Some social psychological explanations for changing environmental attitudes. *Journal of Social Issues*, 28(4), 79-87.
- Heckler, S. E. (1994). The role of memory in understanding and encouraging recycling behavior. *Psychology & Marketing*, 11(4), 375-392.
- Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of Environmental Education*, 18(2), 1-8.
- Horton, M., Kohl, J., & Kohl, H. (1990). The long haul (Vol. 80). New York: Doubleday.
- Hucl, T., Wee, E., Anuradha, S., Gupta, R., Ramchandani, M., Rakesh, K., & Lakhtakia, S. (2013). Feasibility and efficiency of a new 22G core needle: a prospective comparison study. *Endoscopy*, 45(10), 792-798.
- Iravani, M. R., Zadeh, M. S., Forozia, A., Shafaruddin, N., & Mahroeian, H. (2012). Study of factors affecting young consumers to choose green products. *Journal of Basic and Applied Scientific Research*, 2(6), 5534-5544.
- Irawan, R., & Darmayanti, D. (2012). The influence factors of green purchasing behavior: A study of university students in Jakarta. Retrieved from <http://www.wbiconpro.com/517%20-%20Dahlia.pdf>
- Jakstiene, S., Susniene, D., & Narbutas, V. (2008). The psychological impact of advertising on the customer behavior. *Communications of the IBIMA*, 3(1), 50-55.
- Jensen, B. B. (2002). Knowledge, action and pro-environmental behaviour. *Environmental Education Research*, 8(3), 325-334.
- Jöreskog, K. G., & Sörbom, D. (1996). *LISREL 8 User's Reference Guide*. Mooresville, IN: Scientific Software.
- Junaedi, S. (2012, September). The role of income level in green consumer behavior: Multigroup structural equation model analysis. *The 2012 International Conference on Business and Management*, (6-7), Phuket, Thailand.

- Karp, D. G. (1996). Values and their effect on pro-environmental behavior. *Environment and Behavior*, 28(1), 111-133.
- Kaufmann, H. R., Panni, M. F. A. K., & Orphanidou, Y. (2012). Factors affecting consumers' green purchasing behavior: An integrated conceptual framework. *Amfiteatru Economic Journal*, 14(31), 50-69.
- Kim, Y., & Choi, S.M. (2005). Antecedents of green purchase behavior: An examination of collectivism, environmental concern, and PCE. *Advances in Consumer Research*, 32(1), 592-599.
- Kline, R. B. (2005). Principles and practice of structural equation modeling 2nd ed. New York: Guilford.
- Kohl, P. L., & Fawcett, C. (Eds.). (1995). Nationalism, politics and the practice of archaeology. Cambridge University Press.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. *Environmental Education Research*, 8(3), 239-260.
- Kotler, P, Kevin, L.K., & Walter, G.S. (2007). Marketing Management. New Jersey: Prentice-Hall International Edition.
- Kumar, B. (2012). Theory of planned behaviour approach to understand the purchasing behaviour for environmentally sustainable products. *Res. Pub*, 2-43.
- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503-520.
- Lee, J. A., & Holden, S. J. (1999). Understanding the determinants of environmentally conscious behavior. *Psychology & Marketing*, 16(5), 373-392.
- Malhotra, J. and Birks, D. (2007), Marketing Research: An Applied Approach, European ed., Prentice Hall/Pearson Education, London.
- Masouleh, S. A., Koochaksaraei, H. M., Saeedi, N., & Mousavian, S. I. (2013). Investigation on selected factors (demographic and psychological) on ecological conscious consumer behavior. *Journal of Basic and Applied Scientific Research*, 3(5), 622-630.
- McCarty, J. A., & Shrum, L. J. (2001). The influence of individualism, collectivism, and locus of control on environmental beliefs and behavior. *Journal of Public Policy & Marketing*, 20(1), 93-104.

- Memar, N., & Ahmed, S. A. (2012). Determinants which Influence the Consumers' Green Purchasing Intention: An Empirical Study of Consumers' buying Intention Toward Eco Friendly Printers in the Swedish Market. Malardalen University, Sweden.
- Minton, A. P., & Rose, R. L. (1997). The effects of environmental concern on environmentally friendly consumer behavior: An exploratory study. *Journal of Business Research*, 40(1), 37-48.
- Moisander, J. (1998, March). Motivation for ecologically oriented consumer behaviour. In Workshop Proceedings, The European Science Foundation (ESF) TERM (Tackling Environmental Resource Management Phase II 1998–2000). Retrieved from <http://www.lancs.ac.uk/users/scistud/esf/lind2.htm>.
- Nemati, C. K. S., & Nasrollah, S. (2015). Green Marketing Mix Impact on the Sporting Goods' Consumers' Purchase Behaviour (Case Study: Adidas Consumers). *Journal of Social Issues & Humanities*, 3(8), 140-144.
- Pittman, T. S. (1998). Intrapsychic and interpersonal processes: Cognition, emotion and self as adaptations to other people or to reality. Attribution and social interaction: The legacy of Edward E. Jones, 235-242.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Pritchard, R., & Ashwood, E. (2008). Managing motivation: A manager's guide to diagnosing and improving motivation. Psychology press.
- Rehman, Z., and M. K. Bin Dost. 2013. Conceptualizing green purchase intention in emerging markets: An empirical analysis on Pakistan. Paper presented at *WEI International Academic Conference Proceedings* Istanbul, Turkey, June 2013.
- Saleem, F., & Gopinath, C. (2013). Antecedents of environmental conscious purchase behaviors. *Middle East Journal of Scientific Research*, 14(2), 979-986.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). Research Methods for Business Students, *Essex*, Pearson education.
- Schlegelmilch, B. B., Bohlen, G. M., & Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European Journal of Marketing*, 30(5), 35-55.
- Schultz, P. W., Zelezny, L., & Dalrymple, N. J. (2000). A multinational perspective on the relation

between Judeo-Christian religious beliefs and attitudes of environmental concern. *Environment and Behavior*, 32(4), 576-591.

Schwartz, S. H. (1977). Normative influences on altruism. *Advances in Experimental Social Psychology*, 10(1), 221-279.

Tahirikheli, T., Bilqess, R., Abbas, S. M., & Zakir, S. (2012). CO2 mineral sequestration studies in the ultramafic rocks of northern Pakistan. *Journal of Himalayan Earth Science*, 45(1), 83-90.

Tan, B. C. (2011). The roles of knowledge, threat, and PCE on green purchase behaviour. *International Journal of Business and Management*, 6(12), 14-28.

Tan, B. C., & Lau, T. C. (2010, June). The influencing factors of green purchase behaviour: an exploratory study. International Conference on Marketing (ICMAR2010); Kuala Lumpur.

Thidell, Å. & Leire, C. (2004). *Consumer perceptions, understanding and use of product related environmental information-a literature review of the Nordic knowledge base*. Nordic Council of Ministers Copenhagen.

Thøgersen, J. (2000). Psychological determinants of paying attention to eco-labels in purchase decisions: Model development and multinational validation. *Journal of Consumer Policy*, 23(3), 285-313.

Webb, D. J., Mohr, L. A., & Harris, K. E. (2008). A re-examination of socially responsible consumption and its measurement. *Journal of Business Research*, 61(2), 91-98.

Weiner, B. (1980). A cognitive (attribution)-emotion-action model of motivated behavior: An analysis of judgments of help-giving. *Journal of Personality and Social Psychology*, 39(2), 186-205.

Weitz, B. A., Sujan, H., & Sujan, M. (1986). Knowledge, motivation, and adaptive behavior: A framework for improving selling effectiveness. *Journal of Marketing*, 50(4), 174-191.

# Macroeconomic Determinants of Privatization in Pakistan

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## Abstract

*The concept of privatization is not new to the policy makers of Pakistan. While taking decision of privatization a Government consider both micro-economic and macro-economic impacts. The paper discuss the methods of privatization used by government in different regimes and found that among the different methods 37.5% of privatization is done through auctions while 13.64% by divestiture and 15.91% by tender including some other methods also utilized for privatization. This paper also examines also macroeconomic determinants of privatization in Pakistan. Empirical studies of privatization are few and even fewer formal empirical analyses of privatization. For the purpose of analysis time series data is used for the 1990 to 2008. This research paper examined that rate of unemployment in Pakistan, Gross Domestic Product (GDP), deficiency of budget and inflation-rate as the most important and crucial factors of privatization in the context of Pakistan.*

**Keywords:** Macroeconomics, Fiscal policy, Privatization, Gross domestic product.

**JEL Classification:** E020

## 1. Introduction

Over the last three decades Pakistan has faced a huge fiscal deficit, while budgetary imbalance continued to be one of the key macroeconomic problems. The huge rise in fiscal imbalance in public debt in Pakistan poses serious concerns regarding the fiscal sustainability of the economy (Shaheen & Turner, 2010). The absence of agreement on the broadening of tax base by political government and deficiency of revenues as proportion of GDP are the drawbacks with Pakistan while on the other hand the problem which increased the fiscal deficit is political instability and administrative incompetence. In the era of 1980 and 90 the policy was adopted to cut down the increasing fiscal deficit and take actions to rectify the issues of debt servicing. During 1980s and 1990s, the policy was formulated to reduce high level of fiscal deficit and also the control of public debt which is increasing day by day including the efforts to control debt servicing cost (Haque, Nadeem, & Montiel, 1991).

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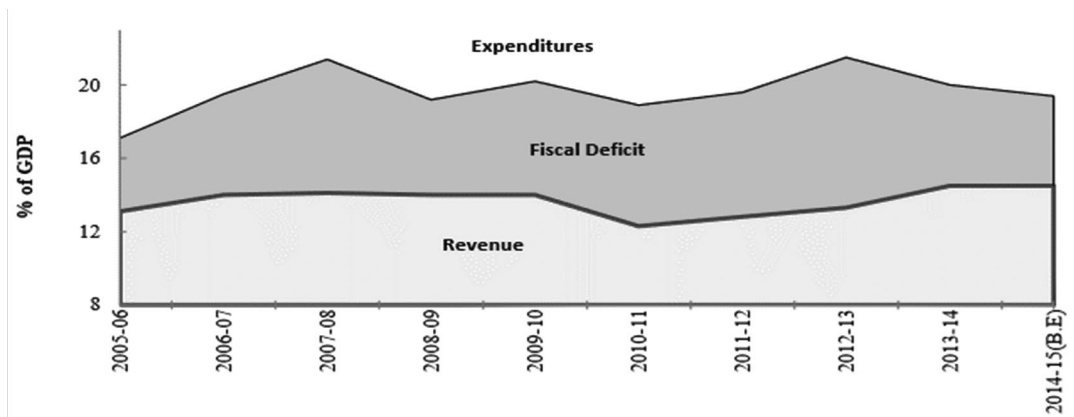


Figure 1: Revenue-Expenditure Gap (% of GDP)

Source: GOP 2015 (2015)

The above figure depicts the gap between expenditure-revenue during the period of 2005-06 to 2014-15. There is less gap during the years 2004-05 to 2006-07 but increases in 2007-08. While in 2011-12 it shows a somewhat falling trend, but in 2012-13 the gap is widened. It can be noted from the data that both times the expenditure increased before the general elections held in Pakistan. This sudden increase could be due to expenditure incurred on election or the development expenditure done by sitting government to get attention of voters.

The policy makers commonly use two options counter the issue of deficit of budget, either by increasing the rate of tax or by cutting government expenditures. The alleviation of deficit by such an action usually leads to lower growths and may cause the economy to face another cyclical deficit. Some developing economies such as Morocco, Jordan and Pakistan used the option to rearrange the fiscal deficit and also adopted the policy of curtailing unnecessary expenses to counter the fiscal deficit issue. While on the other hand, China and India opted cyclical fiscal adjustment which are supported by increased revenues and lowering expenses (GOP 2015, 2015).

Further options available to policy makers to cover the deficit is to go for decentralization or privatization of asset owned by state, the concept of decentralization/privatization is defined as "to process by which the state owned enterprises were transferred to private enterprises". For a government it comes as a strong option to start privatization as the mean to minimize the fiscal deficit (Pinheiro & Schneider, 1994; Plane, 1997; Sunderland, 2011; Przeworski, 1991). The overall revenues receipt from the transfer of public enterprises were sighted as a possible solution to these deficits (Young 1998, Davis, 2000). The revenues earned from the sale of asset not only use to reduce public debts and also for cutting the long run fiscal deficit (Davis, 2000). The sale proceeds of privatized assets were expected to be used as tool a to suspend national debt and also to eliminate the losses of government

enterprises because such losses were financed through the budget (Khan, 1999).

### ***1.1 Privatization in Pakistan: A Brief History***

For the policy makers of Pakistan privatization is not a new concept and could be traced as back as in 50s. In 1952 Pakistan Industrial Development Corporation (PIDC) was established that boosted the industrial development in the country (Bokhari, 1998). The expenditure on the defence of country has increased throughout the period, from 1965 to 1972, due to domestic political conditions and as well as international political disturbances. In the early 1970s, the initiation of nationalization of private sector as a strategy allowed the government to incur huge amount as public investment (Haque, Nadeem, & Montiel, 1991). The authorities extended the public ownership (nationalization) program to an un-manageable level which led them to the catastrophe to achieve the welfare level desired by them. After the new government took control, they redesigned the policies in order to gain investor's confidence so that the process of decentralization would be restarted (Bokhari, 1998).

The new government in July 1977 introduced policies of denationalization, disinvestment and decentralization so that the confidence of private investors would be restored. In September 1978 the new government promulgated "Transfer of Managed Establishment Order" to empower the Federal Government to offer the previous owners of nationalized industries, the shares or proprietary interest in acquiring their establishments (Bokhari, 1998). In the early 1990's Privatization Commission was established by the government to accelerate the pace of Privatization. More than 100 State Owned Enterprises including banks, Industrial Units and financial development institute were offered by commission for privatization (Naqvi, Haider, & Kemal, 1991). The program adopted and worked through-out the period of 1990's and privatization is carried and adopted as the primary objective in all of the era of 1990's. Through the process of privatization economic activities including Pakistan have been accelerated.

General Musharraf give primary importance to sectoral reforms after his takeover. In the year 2000 General Musharraf issued a new privatization ordinance to provide legal strength and the GOP declared a new formal structure of privatization. A new commission on privatization was formed based on transparency and accountability of the process. Moreover, a new ministry is also established known as Ministry of Privatization and Investment to facilitate the process of privatization.

### ***1.2 Current Privatization Policy***

To make privatization sounder and more transparent the previous government of Nawaz Sharif also announced a new policy for the process privatization. Some of the key objectives of that policy of privatization is as followed:

- Improvements in overall performance of units as well as the operational efficiency of assets

proposed for sale and to enhance the competition among bidders

- Also need to reduce the burdens of public owned enterprises which is bear by government and to develop better physical and technological structure to provide help to accelerate the speed of industrialization
- The base of capital market must be broadened in order to give it strength by increasing the number of shareholders and registering new enterprises.

The government also formulated some plans to support the process of privatization in achieving the goals set by the commission. The points of the proposed plan are:

- Interest of consumers must be safeguarded before the divestiture by use of some regulatory framework
- Promotion of widespread ownership of asset and restriction of formation of any cartels
- To reduce the impact of unemployment by compensating unwanted employees and by providing them opportunity of getting new skills so that they can be adjusted some-where else.

### ***1.3 Methods of Privatization***

While taking the decision of starting the process of privatization or formulating any policy to sell SOE's, the government adopts those methods of privatization that are efficient and generate the maximum amount of revenues for the state. It is evident that developing countries mostly choose more than one method of privatization. Schmidt and Schnitzer (1997) suggest that economic theories in the modern era provide appropriate means and methods to understand properties to predict the consequences of different privatization methods. The methods of privatization that are generally used by different developing countries are as follows:

#### ***1.4 Auctions***

Auctions is the most common method used by developing countries for privatization. The economist and experts considered auction as a good tool for the allocation of an asset for those who are ready to pay the maximum amount for a specific industry or unit.

#### ***1.5 Divestiture***

A complete transfer of SOE to private sector is known as divestiture. When all or almost all the assets of the public sector were transferred to private sector by using the process of privatization.



### **1.6 Tender**

Among the process of privatization, the method of auction was often used by state. In this method those people who are willing to purchase any of the SOE provide the best maximum price and also proposes an investment strategy in response to the tender issued by government.

### **1.7 Initial Public Offering (IPO)**

The method of IPO is defined as offering the share of SOE for the first time in the Stock Exchange market of public sector. The guaranteeing firms provides assistance to issuers of IPO, such assistance give help in obtaining best possible price of an asset and identifies the timing of selling the shares in market. They also help in the determination that which type of security to be issued for sale.

### **1.8 Global Depository Receipt (GDR)**

In GDR's government tries to accumulate funds from different markets of the world. The state prefers to sell GDR 's to sell the shares in those countries where they have no headquarters.

## **2. Literature Review**

Government set a variety of target before taking decision about the privatization such as efficiency gains, more specifically in economies states are incapable to cope up with fiscal deficit specially in public sector enterprises. Literature that covers empirical aspects of macroeconomic effects privatization is significantly less. The available literature is mostly available on high income countries while the literature on developing countries is less.

Goel and Budak (2006) used the data for the period 1997 to 2001 on transition economies and examined the determinants of privatization. The empirical result suggests different responses of different determinants with the privatization. The privatization was found subtle in economic growth. Moreover, low level of inflation and higher level of unemployment will cause small scale privatization and on the other hand large-scale privatization is a result of large amount of deficit. Those countries having geographically large area leads to privatization whereas size of the government does not matter in transition economies. Furthermore, Bokhari (1998) studied that the process of denationalization is regularized with the passage of time to serves the objective to achieve translucent and free of corruption transfer of assets ownership to the private sector. Moreover, the paper also suggested that as there still exist less efficient industrial sector on the economy which must also be privatized, and this will also help in acceleration of the economic development for of country.

Thaku (2016) found the positive impact of privatization on FDI and employment opportunities in Pakistan. They also found the impacts of privatization were negative on economy that accelerates

vagueness in the employment in public sector organizations, which have possibilities to be transferred to private sector. (Naqvi, Haider, & Kemal, 1991) studied the impediments to understand the aim of privatization in Pakistan, which related to the efficiency, physical and social infrastructures, employment, investment, production and retirement of the public debt. The results also show the positive impact of privatization on growth and productivity and a low price level, but only on the condition of competitive framework. Moreover, Khan et al. (2011) analyzed the denationalization process in Pakistan and discover diverse results of post privatization impacts.

The result of the study suggests that the performance of new privatized firms and units are appreciable and specially the quality of service and product was improved by the management who took the charge. Moreover, the financial health of the newly privatized SOE's were also improved. While the study also found the absence of competitiveness the choice for consumers reduced due to low quality goods. Khan and Hijazi (2003) found that employment is negatively affected due to the process of privatization. The authors also found negative and insignificant impacts of transfer of SOE's on output and managers. Moreover, the study also empirically concluded that in the short run structural adjustment program hurts due to the process of privatization.

### 3. Methodology

For the purpose of the analysis, the study will use Ordinary Least Square (OLS) method and different other descriptive tools. In this current study, data from secondary sources is utilized to check the what are main and core determinants privatization in Pakistan. The data of privatization proceeds is that received from the sale of government/state owned enterprises is taken from Privatization Database of the World Bank. The database of the world bank contains sale prices of transactions for developing countries, the time period covers in the study ranges from the years 1990 to 2008. The data of sales/ proceeds were recorded in dollars' terms. The other variables for example, PRI, GDP, INF and DEF in the log form also taken from database of world bank while the data on UNEMP is taken from the IFS (International Financial Statistics) database and which is available in percentage form. Some of the other different data sources are as follows:

- World Bank Pakistan Data Base
- Economic Survey of Pakistan (ECP)
- Pakistan Statistical Year Book
- Labor Force Survey (LFS)

### 4. Results

Table 1 (in appendix) shows the amount of privatization proceeds different public sector

enterprises. The telecommunication provided the highest amount of revenues among all the sectors, that is about 45% of total revenues received from transfer of ownership. While on the other hand transactions of capital market, energy sector, banking sector, fertilizers and cement industry also provided revenues in the huge amount. Furthermore, sectors like tourism, chemical sector, Oil (ghee) firms, textile units, rice, newspapers, industrial and other engineering sector only able to provide a small amount of revenue to the country from the process of privatization.

Table 2 (in appendix) depicts the data of methods of privatization by which different governments privatized the SOE's. Total 175 firms/units were transferred to private sector since the inception of the privatization process, among all those 175 only 88 firms/units provide the data of method privatization while the other 87 do not provide any such information. Among the method of transfer of ownership government preferred auction and used it most of the time as it enhances competition and gains higher revenues from the private sector. Auction as a method of privatization is used for sale of 33 firms or units. While 14 firms sold by using the method of divestiture. On the other hand, Greenfield Project, Public offering, GDR offering, private sale, Direct Sale is used more than once. Different other methods presented in table 1.2 were used for one time only. The definitions of methods of privatization were discussed in the section above.

Table 3 (in appendix) depicted the information about the different sectors privatized during 1990 to 2008 by different Government of Pakistan. During the mentioned period 175 units were transferred to private sector. The proportion of Manufacturing and services is 52.57% of total units. While the proportion of financial sector constitutes 12 % of total privatization. The overall proportion contribution of competitive and infrastructure sector is about 20% of the total sectors privatized. Moreover, 8% of the energy sector also privatized and other sectors has less than 10% proportion of total units privatized\*\*\*\*.

#### 4.1 Estimation Model

$$PRI = f(DEF, INF, GDP, UNEMP) \text{ -----(1)}$$

PRI= Proceeds of Privatization

UN =Rate of Unemployment (+)

INF = Rate of Inflation (+)

GDP= Gross Domestic Product (+)

DEF =Government Budget Deficit (+)

\*\*\*

See Appendix # 1 for complete tables.

## 4.2 Empirical Results

Table 4  
*Macroeconomic Determinants of Privatization*

<b>Dependent Variable: PRI</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	-5264.3*	1714.16	-3.0711	0.0083
DEF	7.78E-09*	2.17E-09	3.58216	0.003
INF	137.1972*	26.98863	5.083517	0.000
GDP	6.72E-08*	1.62E-08	4.15609	0.001
UNEMP	26.77393	89.30782	0.299794	0.7652
R-squared	0.585936	F-statistic	25.11773	0.00000

*Source: Author's Estimates*

## 5. Conclusion

The main objective of this paper aims to find the core macroeconomic determinant of privatization. The study discussed four important macroeconomic variables as determinants of privatization. The results presented in the above table 1.4 suggest that fiscal deficit DEF is the most important macroeconomic determinant of privatization. The theory of privatization suggests that when an economy or any government faces the issue of budgetary deficit, they take the decision to sell inefficient firm/units owned by public sector so that it gets the proceeds from the sales and utilize it reducing the deficit. The variable used here for deficit is highly significant at 1% but sign of is not as per the explanation of theory. The value of DEF is too small and can be neglected. The small value also indicates that even though deficit provides an important reason for privatization, but there may be some other exogenous factors that can influence privatization in Pakistan like approach and willingness of the government towards privatization and the involvement of international institutions such as the IMF and World Bank. The variables of inflation (INF) are not only significant but the sign of the variables is also supporting the theory, which implies that with an increase in the rate of inflation increase government will use option of privatization more. The amount of proceeds could be utilized to control the inflation by using it for providing subsidy. Moreover, results also suggest that increase in the level of GDP have a negative and significant effect on privatization. The sign of GDP is not according to theory, but the value of the coefficient is negligible, which suggests that option of privatization does not entirely depend on economic conditions. The variable unemployment UNEMP is not statistically significant while its sign is according to theory, the possible reason of such result of UNEMP is that when any developing economy faces high unemployment, it is a general perception in developing economies that government is responsible to provide employment opportunities in the

economy. The value of F-stats suggest that the model is correctly specified.

The results of the study suggest that unemployment, inflation, GDP and budget deficit are some, but main macroeconomic determinants that caused the initiation of the process of privatization. The study found that macroeconomic determinants of denationalization in Pakistan are near to the economic theory and intuition. Moreover, empirical result shows that most of the variables have expected relationships and expressing that privatization is taken as an important goal to enhance and achieve economic progress in the country and efficiency in production and services sector. The data on the privatization is limited which might have caused insignificant result of some variables. The inclusion of the other qualitative variables like governance and political stability may increase the understanding of the process of privatization. It is also suggested that at the privatization the theoretical difficulties must be avoided, and to gain higher earnings authorities need to enhance competition by bringing more buyers. The following are some of recommendation to avoid unnecessary sales of SOE's and to enhance revenues.

- Need to reduce tenacious budget deficit to save state owned asset from privatization, especially those assets that can generate revenue.
- there is a need of independent and credible body to avoid any faulty transfer of assets, the body should also decide a minimum price of such assets which were presented for privatization.
- Market friendly environment must be provided by government to private sector and also make market free from government intervention to increase the interests of investor in the local market.

## References

- Bokhari, S. (1998, September). History and Evolution of Privatization in Pakistan. In *National Seminar on Privatization*. Islamabad, Pakistan: The International Labour Organization and Pakistan National Federation of Trade Unions (18-19).
- Davis, DS. (2000). *The Consumer Revolution in Urban China*. Berkeley/Los Angeles: Univ. Calif. Press.
- Goel, R. K., & Budak, J. (2006). Privatization in transition economies: Privatization scale and country size. *Economic Systems*, 30(1), 98-110.
- GOP 2015 (2015), *Economic Survey 2014–15*, Finance Division, Economic Advisors, Wing, Islamabad.
- Haque, Nadeem U., & Peter Montiel (1991). *The Macroeconomics of Public Sector Deficits: The Case of Pakistan*. Country Economics Department, Research and External Affairs. Washington, D.

C: The World Bank (Working Papers WPS 673).

- Khan, S. R. (1999). Comparative Privatization Experience: Employee and Private Ownership. In *Do World Bank and IMF Policies Work?* (64-84). Palgrave Macmillan, London.
- Khan, I. A., & Hijazi, S. T. (2003). Impact of Privatisation on Employment and Output in Pakistan. *The Pakistan Development Review*, 42(4), 513-536.
- Khan, M. M., Yaqub, M., Faisal, F., & Khan, M. (2011). Privatization in emerging markets: Pakistan's perspective. *Interdisciplinary Journal of Research in Business*, 4(1), 101-106.
- Naqvi, Haider, S.N. & Kemal, A.R. (1998), Privatization, Efficiency, and Employment in Pakistan. Routledge, London.
- Pinheiro, A. C., & Schneider, B. R. (1994). The fiscal impact of privatization in Latin America. *Quarterly Review of Economics and Finance*, 34(1), 9-42.
- Plane, P. (1997). Privatization and economic growth: an empirical investigation from a sample of developing market economies. *Applied Economics*, 29(2), 161-178.
- Przeworski, A. (1991). Democracy and the market: Political and economic reforms in Eastern Europe and Latin America. Cambridge University Press.
- Schmidt, K. M., & Schnitzer, M. (1997, September). Methods of privatization: Auctions, bargaining, and giveaways. In *Privatization at the end of the century* (97-133). Springer, Berlin, Heidelberg.
- Shaheen, R., & Turner, P. (2010, December). Measuring the dynamic Effects of Fiscal Policy shocks in Pakistan. In *25Th Agm Pide Pakistan* (1-25).
- Sunderland, A. H. (2011). Fiscal Impact of Privatization in Developing Countries. Retrieved from [http://scholarship.claremont.edu/cmc%20\\_theses%20/109](http://scholarship.claremont.edu/cmc%20_theses%20/109).
- Thaku, I. A. (2016). *A comparative study of foreign direct investment (FDI) inflows between India and China in Textile Industries since 2000* [Unpublished doctoral dissertation]. Aligarh Muslim University.
- Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *Cyber Psychology & Behaviour*, 1(3), 237-244.

*Appendix*

Table 1  
*Sector wise Revenues Received from Privatization*

<b>Sector</b>	<b>Revenue in Rupees (Millions)</b>
Telecommunications	279468.2
Capital Market Transaction	186688.9
Energy Sector	51756.1
Bank	41023.2
Fertilizer	40281.1
Cement	16176.9
Tourism	1805.1
Chemical	1642.5
Industrial Units	1101.9
Ghee	841.7
Textile	370.7
Newspapers	270.6
Rice	235.6
Engineering	182.5
Others	158.8
Roti Plants	90.7
Total	622094.5

Table 2  
*Method of Privatization*

Deal Type	Frequency	Percent
Auction	33	37.5
Divestiture	12	13.64
Tender	14	15.91
Public Offer	6	6.82
Greenfield Project	5	5.68
Private Sale	3	3.41
GDR Offering	2	2.27
Public Offering	4	4.54
Direct Sale	2	2.27
IPO	1	1.14
SPO	1	1.14
Sealed Bid	1	1.14
Joint Venture	1	1.14
Public Issue	1	1.14
Offer Local And International GDR	1	1.14
Public Offer (Karachi/Lahore)	1	1.140
Total	88	100

Table 3  
*Sector wise Privatization*

Sector	Frequency	Percent
Manufacturing & Services	92	52.57
Financial	21	12
Competitive	19	10.86
Infrastructure	15	8.57
Services	14	8
Energy	6	3.43
Primary	5	2.86
Other	3	1.71
Total	175	100



# Impact of Theory of Planned Behavior on Islamic Home Financing Decision, Moderating Role of Government Support

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## Abstract

*This study aims to determine the factors influencing Islamic banks customers (IBC) intention to use Islamic home financing (IHFA). Researchers have modified The Theory of planned behavior (TPB) in explaining (IHFA). Further, the interacting effect of government support (GS) is tested in between TPB and IHFA. Data was collected from 250 (IBC) in Lahore. Researchers have used multiple regressions to test the direct relationship. Next interaction term was added to test the moderation. This study finds that attitude (ATT), subjective norms (SN), perceived behavior control (PBC), price of home financing (PHF) and religious obligation (RO) are instrumental in determining the IHFA. Moreover, the presence of GS has strengthened the relationship between TPB and IHFA. This study is pioneer effort in applying GS as a moderator on the TPB in the context of (IHFA) in Pakistan.*

**Keywords:** Islamic banks, Government support, Home financing, Intention, Pricing.

**JEL Classification:** G380

## 1. Introduction

Islamic banking is famous among consumers of Muslim faith. In time of crisis the Islamic banks were found to outperform the conventional banks. It was found that the traditional banks had low performance in the time of economic downturn. Multiple types of banking products are offered by the Islamic banks. Major Islamic banks location in, Malaysia, Iran, UAE, Bahrain, Saudi Arabia, Middle East Qatar, and Kuwait.

In Pakistan the rate of mortgage is 16 to 18% that is different from other nations such as Japan 2.7 %, China 7 to 8 %, and India 8 to 12 %. The total remittance in Pakistan has been found to be around 16 billion USD and 3 billion USD were invested in the sector of property (SBP, 2015). Housing is the backbone of the property sector and it is one of the prime needs of customers. House requires huge financial investment for that people attain bank services for financial support (Hasan,

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2011). Better housing arrangements have a positive impact on the well-being of customers (Baharum, 2004). Despite the positive impact of having a good housing facility a lot of people lack the required financial resources. Baharum (2004) said that the limited availability of finance causes the consumers to obtain bank services. Mortgage is one of the methods to purchase house through the assistance of banks. In the syatme of Shria based banking interest (*riba*) is prohibited on the loans. Islamic products of mortgage do not contain *riba* and *gharar* (i.e. uncertainty) instead the lending is based on profit-loss backing (Amin, Rahman, & Razak, 2014).

Several studies conducted to examine Islamic mortgage from a context of existing theories by Ali and Chin-Hong (2015); Taib, Ramayah, and Razak (2008) tested TRA model with attitude, social influence, and government support. They used attitude and subjective norms, which both suggested that through these factor customer intentions can be determined. However, the measure used to test variables is scant and warrant. For further exploration, only two or three factors may be insufficient to determine intention.

Amin, Abdul Rahman, and Razak (2014) extended TPB model by adding religiosity and Islamicity of product as a predictor, and showed statically significant results for IHFA. However, it's necessary to search new variables to understand the unpredicted nature of consumer behavior, which proposed improved future planning of Islamic mortgage preference (Amin, Abdul Rahman, & Razak, 2014).

In the opinion of the above facts, customer's intentions on IHF have upraised a difficulty to classify the actual factors of IHF. Amin et al. (2014) backing this fact, and claimed that diverse factors give inconsistent results, so it is important to determine the factor that influences IHFA.

Previous studies documented the importance of TPB and used it in their studies to test intentions in different contexts (Amin et al., 2014; Hansen, 2008). Amin et al.(2014) said that perceived behavioral control (PBC) is more relevant for this study, because the customer has control over his behavior to take decision about IHF services.

This study contribute to the development of literature in the area of IHF. Amin (2008) said that it is necessary to test the factors that explains the acceptance of an IBC on IHF product. Despite this, the direct beneficiaries of this research are policy makers and managers of IB. This study also assists Sharia scholars to make policies and effective planning to fascinate more customers towards IHF.

Researchers have modified the TPB model by introducing "government support" as moderator. Researchers have found ATT, SN, PBC and RO have a positively significant impact on IHFA. However, PHF has a negative impact on the IHFA. TPB is successfully modified with two new constructs RB and PHF with moderating effect of GS.

## **2. Literature Review**

### **2.1 Attitude**

An individual future intention for a specific behavior or object are mostly analysed by using attitude towards construction that shows his/her interest for certain behavior (Gopi & Ramayah, 2007). If the attitude of an individual is positive, the chances are high that he/she performs a particular behavior. Fauziah, Ramayah, and Abdul Razak (2008) indicated positive attitude of PG students towards IHF. ATT of MBA students adapting to a mobile personal computer has a positive relationship (Fauziah et al., 2008) on ATT. IHF found positive influential factors by (Amin, 2011). In the concept of IHF, the intention levels of an individual performance for a definite object is because of affirmative attitude. Even past literature has also agreed with this opinion, due to which this, suggest that there is positive and significant relationship between attitude and the individual intention use the product (Ali & Chin-Hong, 2015).

*H1: ATT has a positive impact on IHFA.*

### **2.2 Subjective Norms**

SN is the individuals or people who influence the person to agree or disagree to perform specific behavior (Ajzen, 1991; Ajzen & Fishben, 1975). SN is reviewed as a directly measure in TRA and TPB model. SN is significant and positive social impact, as well as social influence on any person. This possibly leads to an increase use or accept a specific object. Venkatesh and Davis (2000) indicated that an individual may not want to perform a specific action by an individual, but intentions become obvious under the influence of social pressure. In previous studies, SN have shown miscellaneous results. Previous studies discusses that insignificant impact of SN on the intention (Ali & Chin-Hong, 2015; Davis, 1989; Mathieson, 1991). In the mean while subjective norm significant impact of an individual intentions is suggested by (Ali & Chin-Hong, 2015)

*H2: SN has positive impact on IHFA.*

### **2.3 Perceived Behavior Control**

The individual behavioral control is represented by the PBC. In the TPB model, address the issues in the TRA theory (Ajzen & Fishbein, 1975). The other ways the situation also answer regarding an individual not interested to manage the actual behavior. PBC is on base of two experiences, firstly, personal experience, secondly, based on friends and family members or any other factors that influence the person to perceived level during performing certain behaviour (Ajzen, 1991). An individual has more chance and means by the IB which shows better behavioral control of a person (or individual) that will advance more ideas for execution a behavior. In the case of IHF pervious studies shows that

an individual's intentions have significant and positive relationship with perceived behavior (Amin, et al., 2014; Mathieson, 1991; Shih & Fang, 2004; Wu & Chen, 2005).

*H3: PBC has positive impact on IHFA.*

## ***2.4 Religious Obligation***

Religious obligation has a wild role in religion which affects an individual's choices and intentions. Society belongs to Islam have significantly relationship by Sharia guidelines (Sulaiman, 2003). IB are responsible to apply Sharia principles, values and those goals which provide by IHF. The IBs can modify one's behavioral IHFA. So that, if the IB apply more Sharia principles, so there exist more possibilities of Islamic personal financing. This statement is based on previous studies which were conducted in the context of IB products (Almossawi, 2011; Omer, 1992).

*H4: RO has a positive impact on IHFA.*

## ***2.5 Price of Islamic Home Financing***

This concept is defined as an amount charged by the Islamic banks, when financing the Islamic Home financing products too. The Islamic banks use the rule of PLS (profit and loss sharing) model to finance transactions (Olson & Zoubi, 2008). On the above argument PLS is acceptable in the Sharia rule but Interest is prohibited. In specific conditions, IB give permission for charges on delayed payments on banking products (Ali & Chin-hong, 2015). In the past IB studies, pricing variable has most significant rule in Islamic products that increases the intentions of consumers towards IB products (Amin, 2018). Researchers used pricing factors which signifies that if the pricing on IHF product is low, the chances of customers use of the product are greater (Ali & Chin-Hong, 2015; Amin, 2008).

*H5: PHF has negative impact on IHFA.*

## ***2.6 Government Support***

The government policies and objectives that influence an individual's behavior are referred to as GS. Amin et al. (2014) suggested that IB products, and GS product are positively and significantly linked with each other. GS plays a vibrant role for IB to emerge with the new model of banking (Amin et al., 2014). In addition, Haron, Ahmed, and Planisek (1994) argued that IB products are mostly dependent on GS. That is anticipated to have significant influence on Islamic personal financing. Although, many customers try to adopt IHF services if they find it easier, there are some other external forces which may strengthen or weaken the effect on IHFA. Researchers especially focus on GS as a moderator here. Government regulators can motivate and de motivate the intention of customers.

Companies adopted more technology while other companies received some GS (Lin & Ho, 2009; Ramanathan, Ramanathan, & Ko, 2014).

*H6:* ATT will have stronger impact on IHFA under GS.

*H7:* SN will have stronger impact on IHFA under GS.

*H8:* PBC will have stronger impact on IHFA under GS.

*H9:* PHF will have stronger impact on IHFA under GS.

*H10:* RO will have stronger impact on IHFA under GS.

## 2.7 Proposed Model

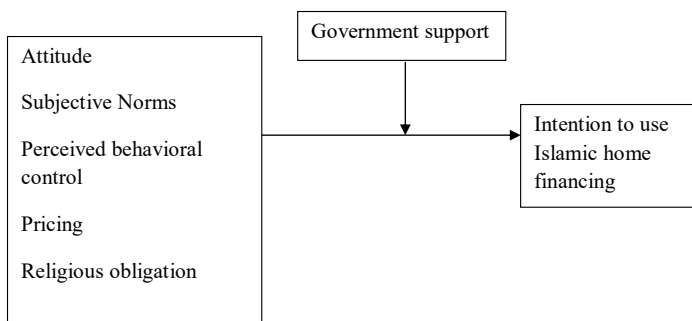


Figure 1: Proposed Model Sample and Procedure

## 3. Methodology

Target population was the customers in the future to use IHF. This research is conducted in Lahore Pakistan. This study obtained a sampling frame from the four pure Islamic banks e.g. Meehan Bank, Al-Baraka bank, Dubai Islamic, and Bank al-Islamic. Sample size was 250, and was calculated from the IBC during working hours. Sample size was also consistent with the previous study (Wilson & Chaddha, 2009). 30 questionnaires were found to have more than 10% missing data in which the dependent variable was discarded due to unacceptable statistical testing (Hair et al., 2010). In addition, this is supported by Hair et al. (2010) that suggested a sampling size maximum 400 but not less than 200. The method used to collect the data from customers was of cluster stratified random sampling, due to limitation of accessing the actual IBC. According to the banking act in 1989; banks are responsible to protect the personal data of their customers, they can't disclose the names of customer so, and this method of sampling is most suitable for this study. Moreover, this data collection strategy is very effective in IB because this method supports the pervious literature on IB (Ali & Chi-Hong, 2015; Ramayah et al., 2014). The Tool for data collection was questionnaire based. Most of the relevant studies used this technique for data collection for example (Raza & Hanif, 2013). Likert scale is based on 5 scales 5 point with SDA = 1 to SA= 5 for each item.

Table 1  
*Measurement Instruments*

<b>Constructs</b>	<b>Authors</b>
Attitude	Gopi and Ramayah (2007); Compeau and Higgins (1999)
Subjective Norms	Gopi and Ramayah (2007); Hansen et al., 2004
Perceived Behavioral Control	Davis (1989); Beng (2010)
Pricing on home financing	Ali and Chin-Hong(2015); Amin et al.(2014)
Religious obligation	Almossawi(2001); Metwally(1996)
Government support	Amin et al.(2014)

#### 4. Results

To test the inter-consistency of the data, Cronbach (1951) was used and it was found that the maximum scale lies between 0.7 to 0.9 (Table 2). For which it meets the minimum criteria proposed by (George & Mallery, 2003).

Table 2  
*Reliability Coefficient Alpha Value*

<b>Construct</b>	<b>No. of Items</b>	<b>Cronbach Alpha</b>
ATT	5	0.77
SN	4	0.84
PBC	5	0.85
PHF	5	0.87
RO	5	0.81
GS	3	0.77
IHFA	3	0.84

Source: Authors' calculations

##### 4.1 Demographic Profile

To empirically test the study, 350 questionnaires were distributed among 240 returns (response rate approximately 71%) in which 20 questionnaires were discarded. That happened because greater than 10% of the data was missing in the dependent variable, which was inappropriate as per statistics test guidance (Hair et al., 2006).

## 4.2 Moderation Results

To test the hypothesis that ATT has positive impact on IHFA and more specifically whether GS moderates the relationship between ATT and IHFA, multiple regressions was conducted. In the first step, two variables were included ATT and GS, these variables showed (Table 2) significant variance in IHFA,  $R^2 = 0.632$ ,  $F=186.5235$ ,  $P<0.001$ . ATT ( $\beta= 0.717$ ,  $t= 12.537$ ,  $P<0.001$ ) GS ( $\beta=0.106$ ,  $t=1.861$ ,  $P<0.01$ ) ATT Beta value shows that ATT has significantly positive impact on IHFA, which provide evidence to accept H1. Next interaction term between ATT, GS was added to the regression model, which accounted for significant portions of variation in IHFA. ( $\Delta R^2=0.024$ ,  $F=137.059$ ,  $P<0.001$ ). The outcome indicated that GS moderated the relationship between ATT and IHFA, which provided evidence to accept H6.

Table 3  
*Multiple Moderated Regression*

Description	(ATT,GS) → IHFA		(ATT*GS)
<b>R<sup>2</sup></b>	0 .632		0.656
<b>Adj. R<sup>2</sup></b>	0.628		0.678
<b>F-value</b>	186.235		137.059
	<b>ATT</b>	<b>GS</b>	
<b>Beta</b>	0.717	0.106	$\Delta R^2=0.024$
<b>Std. error</b>	0.046	0.038	
<b>T-value</b>	12.537	1.861	
<b>Sig.</b>	0.000	0.064	

Source: Authors' calculations

Table 4  
*Multiple Moderated Regression*

Description	(SN,GS) → IHFA		(SN*GS)
<b>R<sup>2</sup></b>	0 .418		0.437
<b>Adj. R<sup>2</sup></b>	0.413		0.429
<b>F-value</b>	77.932		55.848
	<b>SN</b>	<b>GS</b>	
<b>Beta</b>	0.256	0.491	$\Delta R^2=0.02$
<b>Std. error</b>	0.051	0.039	
<b>T-value</b>	4.437	8.508	
<b>Sig.</b>	0.000	0.000	

Source: Authors' calculations

Results in (Table 4 shows) that is SN and GS display significant variance in IHFA with,  $R^2$

= 0.418,  $F=77.932$ ,  $P<0.001$  and in direct relationship results for SN and GS are ( $\beta=0.256$ ,  $t=4.437$ ,  $P<0.001$ ) ( $\beta=0.491$ ,  $t=8.508$ ,  $P<0.001$ ) respectively. This shows that, SN has a significantly positive impact on IHFA, which means that Hypothesis H2 is accepted. Next interaction term between SN and GS was added to the regression model, which accounted for significant portions of variation in IHFA. ( $\Delta R^2=0.019$ ,  $F=55.848$ ,  $P<0.001$ ). This outcome indicated that GS moderated the relationship between SN and IHFA, that's means Hypothesis H7 is accepted.

Table 5

*Multiple Moderated Regression*

Description	(PBC,GS) → IHFA		(PBC*GS)
<b>R<sup>2</sup></b>	0.385		0.414
<b>Adj. R<sup>2</sup></b>	0.379		0.406
<b>F-value</b>	67.949		50.808
	<b>PBC</b>	<b>GS</b>	
<b>Beta</b>	0.193	0.473	$\Delta R^2=0.029$
<b>Std. error</b>	0.061	0.049	
<b>T-value</b>	2.649	6.488	
<b>Sig.</b>	0.000	0.000	0.001

Source: Authors' calculations

Results in (Table 5 shows) that PBC and GS display significant variance in IHFA with,  $R^2=0.385$ ,  $F=67.949$ ,  $P<0.001$  and. In direct relationship results for PBC and GS are ( $\beta=0.193$ ,  $t=2.649$ ,  $P<0.001$ ) ( $\beta=0.473$ ,  $t=6.488$ ,  $P<0.001$ ) respectively. This shows that PBC has a significantly positive impact on IHFA, which means that Hypothesis H3 is accepted. Next interaction term between PBC and GS was added to the regression model, which accounted for significant portions of variation in IHFA. ( $\Delta R^2=0.029$ ,  $F=50.808$ ,  $P<0.001$ ). The outcome indicated that the GS moderated the relationship between PBC and IHFA, that's means Hypothesis H8 is accepted.

Table 6

*Multiple Moderated Regression*

Description	(PHF,GS) → IHFA		(PHF*GS)
<b>R<sup>2</sup></b>	0.426		0.463
<b>Adj. R<sup>2</sup></b>	0.421		0.455
<b>F-value</b>	80.643		62.060
	<b>PHF</b>	<b>GS</b>	
<b>Beta</b>	-0.333	0.823	$\Delta R^2=0.037$
<b>Std. error</b>	0.061	0.046	
<b>T-value</b>	-4.81	11.992	
<b>Sig.</b>	0.000	0.000	0.000

Source: Authors' calculations



Results in (Table 6 shows) that PHF and GS display significant variance in IHFA with,  $R^2 = 0.426$ ,  $F=80.643$ ,  $P<0.001$ . In direct relationship results for PHF and GS are ( $\beta = -0.333$ ,  $t = -4.81$ ,  $P<0.001$ ) ( $\beta = 0.823$ ,  $t = 11.992$ ,  $P<0.001$ ) respectively, which shows that PBC has a significantly negative impact on IHFA, which means that Hypothesis H4 is accepted. Next interaction term between PHF and GS was added to the regression model, which accounted for significant portions of the variation in IHFA. ( $\Delta R^2=0.037$ ,  $F=62.060$ ,  $P<0.001$ ). The outcome indicated that, GS moderated the relationship between PHF and IHFA, that's means Hypothesis H9 is accepted.

Table 7

*Multiple Moderated Regression*

Description	(RO,GS) → IHFA		(RO*GS)
<b>R<sup>2</sup></b>	0.384		0.399
<b>Adj. R<sup>2</sup></b>	0.378		0.390
<b>F-value</b>	67.494		47.731
	<b>RO</b>	<b>GS</b>	
<b>Beta</b>	0.198	0.459	$\Delta R^2=0.015$
<b>Std. error</b>	0.065	0.052	
<b>T-value</b>	2.537	5.869	
<b>Sig.</b>	0.012	0.000	0.000

Source: Authors' calculations

Results in (Table 7 shows) that RO and GS display significant variance in IHFA with,  $R^2 = 0.384$ ,  $F=67.494$ ,  $P<0.001$ . In direct relationship, results for RO and GS are ( $\beta = 0.198$ ,  $t = 2.537$ ,  $P<0.001$ ) ( $\beta = 0.459$ ,  $t = 5.869$ ,  $P<0.001$ ) respectively, which shows that RO has a significantly positive impact on IHFA, which means that Hypothesis H5 is accepted. Next interaction term between RO and GS was added to the regression model, which accounted for significant portions of variation in IHFA. ( $\Delta R^2=0.015$ ,  $F=62.060$ ,  $P<0.001$ ). The outcome indicated that, GS moderated the relationship between RO and IHFA, that's means Hypothesis H10 is accepted.

## 5. Conclusion

The motive is to determine the factors that affect the IBC in using IHF in Pakistan, and to examine the moderating effect of GS on IHFA. For this purpose, Researchers have used the TPB as a baseline theory. It is further modified by introducing PHF and RO, which are two more variables to the conceptual frame work. For this study, researchers have used multiple regression based approach. All the variables in this research are reliable and have a positive influence IHFA, other than PHF with considerable negative influence on IHFA. The consumer attitude links positively to IHFA, that is according to the previous findings of (Ali & Chin-Hong, 2015; Gopi & Ramayh, 2007). This depicts

that positive attitude of consumer induces them to adopt IHF. The impact of subjective norms also confirms the findings of (Ali & Chi-Hong, 2015; Fu, 2006; May, 2005). If the people in the circle of consumer has positive norm of indulgence in IB products the inclination of IHF improves. PBC also has the same impact of IBC for adopting IHFA, it affirms the findings of (Amin et al., 2014; May, 2005; Wu & Chen, 2005; Jalaluddin, 2015). The IB products of IHF make the consumer feel high level of control and the likelihood of adopting IHF enhances. The elements of TPB are in line with our theorization. and relevant to predict the customer IHFA. Only the PHF and IHFA association was traced to be negative. The past literature explains this contradictory results (Amin, 2008; Rahman, 2005). It has been found that high charge of pricing has negative association to IHFA.

The construct modification that is linked with TPB, we included the religious consumer believes as an antecedent of IHFA. Few studies in past show the same trend (Amin et al., 2014; Muneeza et al., 2014). The indulgence in IB is impacted based on one's belief to follow the Islamic teachings (Omer, 1992). Haron, Ahmad, and Plaanisek (1992) states that the Islamic believes of a customer makes their decision of adopting IHF. In this way our study has proved that traditional as well as modified TBP model offers interesting insights into the Islamic banking consumer behavior.

In case of moderation, GS moderated all the independent variables, and strengthened the link between independent & dependent variables. That is because the results predicted that the R2 stage 1 & stage 2 regressions is highly significant, at less than 1% level demonstrating significant moderating effect. This shows that GS is an important moderator in customer IHFA. There is a tendency in Islamic banks for customers in Pakistan to maximize benefits from using IHF, when there is strong GS. On the contrary, when GS is insufficient customers are unable to avail benefits from using IHF. Although, these are new findings in Pakistani context, similar empirical findings are also available in the literature in the other context (Brunetto & Farr-Wharton, 2007; Lu et al., 2003; Mowery, 1983; Ramanathan et al., 2014). Thus, our finding reveals the need for GS to help the IB industry to increase home financing products.

Using the questionnaire data, Researchers have base support for our ten hypotheses in IHF in Pakistan. Researchers have found that ATT, SN, PBC, PHF and RO have significant impact on IHFA. Previous studies suggest that, GS moderate positively. Researchers have found linear relationship between TPB, and IHFA, that is well described in previous literature. In our study, Researchers have used PHF and RO to modify the TPB. Also, as Researchers have discussed in our literature, the TPB model used in many studies is in a different context. Ramayah (2007): Hansen et al.(2004) have confirmed the relationship between TPB, and customer's intention.

However, the actual contribution of our work is to modify the TPB, by including PHF and RO as predictors, and understanding the moderating influencing of GS. Researchers have even found that GS is a significant moderator. With higher GSs, the relationship between TPB and IHFA became more strengthened. Thus, higher level of GS increases the intention to IHF in Pakistan.

### **5.1 Theoretical Contribution and Practical Contribution**

This study contribute to the development of literature in the area of IHF, this statement also supported by Amin et al., (2014) identifies that today, it is more important to identify those factors which affect the intentions of an IBC on IHF adaptation. The direct beneficiaries of these findings are policy makers, and managers of IB. This research also helps Government and Sharia scholars to make significant and productive policies in order to fascinate more customers towards IHF.

The ultimate beneficiaries of this study are the law maker and managers of IB. considering these results, they can decide how to promote the IHF product more efficiently. Furthermore, to create acceptable image of the IHF mangers and policy makers have to apply better strategies. As it varies from one customer to another, it increases their IHFA. Also, managers should deliberate the PBC by encouraging customers towards the IHF products.

### **5.2 Limitations and Recommendations**

The primary limitation for this study is, that the sample is confined to only one city of Pakistan. The generalization of these results to other population in other cities remains to be conducted. Future researchers can extend this study to other cities of Pakistan. Secondly, the findings of this research are limited to five selected variables. Researchers have used only signal moderator. In this way, future researcher can use religious satisfaction as a moderator or mediator to their framework.

Future researches can use different factors, like institutional factors to provide better results. Despite these drawbacks, this study seems as an eye-opener of put on the TPB model by Ajzen (1991) at the individual level to IHF.

### **References**

- Ajzen, I (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ali, M., Raza, S. A., & Chin-Hong, P. (2015). Factors affecting intention to use Islamic personal financing in Pakistan: Evidence from the modified TRA model. MPRA paper number. 66023, University library of Munich, Germany.
- Almossawi, M. M. (2012). Customer satisfaction in the mobile telecom industry in Bahrain: Antecedents and consequences. *International Journal of Marketing Studies*, 4(6), 139-155.
- Amin, H. (2008). Choice criteria for Islamic home financing: Empirical investigation among Malaysian bank customers. *International Journal of Housing Markets and Analysis*, 1(3), 256-274.

- Amin, H., Abdul-Rahman, A. R., & Abdul-Razak, D. (2016). Malaysian consumers' willingness to choose Islamic mortgage products. *International Journal of Bank Marketing*, 34(6), 868-884.
- Amin, H., Abdul-Rahman, A. R., & Razak, D. A. (2014). Theory of Islamic consumer behavior. *Journal of Islamic Marketing*, 5(2), 273-301.
- Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, 82(2), 261-281.
- Baharum, S. A. (2004). A sustainable competitiveness model for strategic alliances: a study of rural entrepreneurs and commercial organisations in Malaysia with special emphasis on Malaysian farmers' organisations (Doctoral dissertation, University of Greenwich).
- Beng, T. K. (2010). Forging a Regional Security Community: A Study of the Driving Forces behind ASEAN and East Asian Regionalism [Unpublished doctoral dissertation]. National University of Singapore.
- Brunetto, Y., & Farr-Wharton, R. (2007). The moderating role of trust in SME owner/managers' decision-making about collaboration. *Journal of Small Business Management*, 45(3), 362-387.
- Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly*, 23(2), 145-158.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 21(1) 319-340.
- Fauziah, T.M., Ramayah, T. & Abdul Razak, D. (2008), Factors influencing intention to use diminishing partnership home financing, *International Journal of Islamic and Middle Eastern Finance and Management*, 19 (3), 235-248.
- Fu, J. R., Farn, C. K., & Chao, W. P. (2006). Acceptance of electronic tax filing: A study of taxpayer intentions. *Information & Management*, 43(1), 109-126.
- George, D., & Mallery, M. (2003). Using SPSS for Windows step by step: a simple guide and reference. Boston, MA: Allyn & Bacon.
- Gopi, M., & Ramayah, T. (2007). Applicability of theory of planned behavior in predicting intention to trade online. *International Journal of Emerging Markets*, 13(3), 206-222.

- Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate Data Analysis: A Global Perspective (c)*, Vol. 7. Pearson, Upper Saddle River, NJ. Retrieved from <http://digitalcommons.kennesaw.edu>.
- Hair, E., Halle, T., Terry-Humen, E., Lavelle, B., & Calkins, J. (2006). Children's school readiness in the ECLS-K: Predictions to academic, health, and social outcomes in first grade. *Early Childhood Research Quarterly*, 21(4), 431-454.
- Hansen, T. (2008). Consumer values, the theory of planned behavior and online grocery shopping. *International Journal of Consumer Studies*, 32(2), 128-137.
- Haron, S., Ahmad, N., & Planisek, S. L. (1992). Requirements and selection decision of customers in Islamic and conventional banking environment. *Malaysian Management Journal*, 1(1), 25-33.
- Hasan, Z. (2011). Islamic home finance in the social mirror. *ISRA International Journal of Islamic Finance*, 3(1), 7-24.
- Muneeza, A., & Hassan, R. (2014). Shari'ah corporate governance: the need for a special governance code. *Corporate Governance*, 14(1), 120-129.
- Jalaluddin, M. H. (2015). An understanding of Islamic home financing adoption. Retrieved from [http://ir.uitm.edu.my/id/eprint/21708/7/PPb\\_MOHD%20HAZIQ%20JALALUDDIN%20J%20BM15\\_5.pdf](http://ir.uitm.edu.my/id/eprint/21708/7/PPb_MOHD%20HAZIQ%20JALALUDDIN%20J%20BM15_5.pdf)
- Khan, F. (2010). How 'Islamic' is Islamic banking?. *Journal of Economic Behavior & Organization*, 76(3), 805-820.
- Lin, C. Y., & Ho, Y. H. (2009). An empirical study on the adoption of RFID technology for logistics service providers in China. *International Business Research*, 2(1), 23-36.
- Lu, J., Yu, C. S., Liu, C., & Yao, J. E. (2003). Technology acceptance model for wireless Internet. *Internet Research*, 13 (3), 206-222.
- Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research*, 2(3), 173-191.
- May, O. S. (2005). User acceptance of internet banking in Penang: a model comparison approach. MBA thesis, School of Management, University Sains Malaysia, Penang, 173-221.
- Metwally, M. (1996). Attitudes of Muslims towards Islamic banks in a dual-banking system. *American Journal of Islamic Finance*, 6(1), 11-17.

- Olson, D., & Zoubi, T. A. (2008). Using accounting ratios to distinguish between Islamic and conventional banks in the GCC region. *The International Journal of Accounting*, 43(1), 45-65.
- Omer, H. (1992). The implication of Islamic beliefs and practice on Islamic financial institutions in the UK. Unpublished PhD dissertation, Loughborough University, Loughborough.
- Rahman, Z. A. (2005). Competitive Pricing of Islamic Banking. NST, Kuala Lumpur.
- Ramanathan, R., Ramanathan, U., & Ko, L. W. L. (2014). Adoption of RFID technologies in UK logistics: Moderating roles of size, barcode experience and government support. *Expert Systems with Applications*, 41(1), 230-236.
- Ramayah, T., & Lo, M. C. (2007). Impact of shared beliefs on “perceived usefulness” and “ease of use” in the implementation of an enterprise resource planning system. *Management Research News*, 30(6), 420-431.
- Raza, S. A., & Hanif, N. (2013). Factors affecting internet banking adoption among internal and external customers: a case of Pakistan. *International Journal of Electronic Finance*, 7(1), 82-96.
- SBP (2015). Financial Stability Review. Retrieved from <https://www.sbp.org.pk/fsr/2015/index.htm>
- Shih, Y. Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research*, 14(3), 213-223.
- Sulaiman, M. (2003). The influence of riba and zakat on Islamic accounting. *Indonesian Management and Accounting Review*, 2(2), 149-167.
- Taib, M. F., Ramayah, T., & Razak, D. A. (2008). Factors influencing intention to use diminishing partnership home financing. *International Journal of Islamic and Middle Eastern Finance and Management*, 1(3), 235-248.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204.
- Wilson, W. J., & Chaddha, A. (2009). The role of theory in ethnographic research. *Ethnography*, 10(4), 549-564.

# The Effect of Authentic Leadership on Police Employees' Experiences; A Mediation Analysis of Workplace Bullying

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## Abstract

*The objective of this research is to identify the effect of authentic leadership on police employees' experiences and workplace bullying. Workplace bullying is acting as mediating variable, researchers and practitioners both recognized authentic leadership as the most favorable leadership style to get useful and desirable organizational outcomes. Many researches have been accompanied to know the impact of authentic leadership on bullying in banking, business and medical sectors, but the need of was to conduct this research in police department. For our sample we took 400 employees from the police department to check the impression of authentic leadership on bullying, we used the survey method to collect the data. This paper employed a cross section survey designed with 400 police employees who has less than 5 years of practiced experience. The result indicates that authentic leadership is significantly related with all variables and strongly correlated with bullying  $r = -.39$  and job satisfaction  $r = .45$ . So, job turnover intention and job satisfaction were significantly related to workplace bullying and burnout. Authentic leadership has negative effect on workplace bullying employees' experiences  $b = -.37$ , consequently, positive relation with emotional exhaustion  $b = .49$ . So work place bullying have a direct negative relation with job satisfaction  $b = -.25$  and indirect negative relation through emotional exhaustion.*

**Keywords:** Authentic leadership, Workplace bullying, Retention outcomes, Job satisfaction.

**JEL Classification:** Z000

## 1. Introduction

Leaders' authenticity has been a hot issue and took worldwide consideration over the decade (Walumbwa et al., 2011). Opatokun et al. (2013) explain the reason of this grabbing consideration is that leader authenticity is of utmost importance during challenges, due to social burdens that trapped ethical problems. When challenging miracles takes place like commercial scandals and ethical break downs, the leaders who have integrity and moral values are very important, they are helpful to provide

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direction and sense to the work of subordinate (Roche, 2010; Wang & Hsieh, 2013; Avolio & Gardner, 2005; Wong & Cummings, 2009; Tonkin, 2013). Laschinger et al. (2014) indicates that the leadership style and the working conditions are directly influenced by the leader's qualities and then it directly pours effect on the employee's burnout and throws negative impact on the employee job satisfaction.

Wharton et al. (2017) examined the impact of workplace bullying on job outcomes, he stated that if there is a workplace bullying in police department, it will transfer the effect on employees' job satisfaction. McNamara et al. (2018) stated that there are very less chances that individual interventions can improve the workplace bullying situations, organization should adopt some specific leadership styles according to situation to control bullying.

Authentic leadership is considered as the origin concept of optimistic leadership, that leadership is supposed to be as true and honest towards followers by the leader (Wong & Cummings, 2009). Leadership researchers and practitioners both recognize it as the most favorable leadership style to get useful and desirable organizational outcomes (Owusu et al., 2011). So this leadership has been referred is the most effective type, which addresses challenges and fast alterations encountered by the organizations both in local and global environment and it also positively impacts on winning trust of employees (Wang & Hsieh, 2013) furthermore, it influences employee's performance positively (Burke et al., 2007). Being consistent and transparent, authentic leadership helps in cultivating employees' trust (Diddams & Chang, 2012). According to Puls, Ludden, and Freemyer (2014) authentic leadership has an impact on the performance of the followers in military and police organizations.

In Prior research identify the relationship of authentic leadership and employee performance and trust in the small or medium enterprises, new business endeavors, firm, construction industry and banks (Khan, 2010; Hmielecki et al., 2012; Jensen & Luthans, 2006; Hassan & Ahmed, 2011; Gardner et al., 2005; Walumbwa et al., 2011; Toor & Ofori, 2009; Miniotaite & Buciuniene, 2013). The best way to avoid bullying is to deal with justice with all employees and authentic leadership is positively correlated with employee justice (webster, 2016).

During the last decade, bullying dilemma has been studied in public and defense bodies (Archer, 1999; Di Martino, 2003; Dick, 2008). For the study of this phenomenon, police agencies have the ideal structure. This problem is connected with high strain scenarios (Tuckey et al., 2009), a huge amount of work and anxiety in ranked entities in which success is based upon the divided system of power which is also unequal and authoritarian leadership style (Bowling & Beehr, 2006; Baillien et al., 2009; Hauge et al., 2011; Baillien & Witte, 2009; Archer, 1999; Seigne et al., 2007). These attributes conclude that at the end the real culprit will not face the consequences of his doings (Salin, 2003).

Today workplace bullying is acting as a reality. An estimation shows that one fifth of all employees have encountered bullying and harassment at workplace. Workplace bullying is increasing



and rapidly spreading as an epidemic. Bullying has come out of the secret in current years. Workplace bullying has become a serious problem globally (Nielsen et al., 2009). In different countries, workplace bullying has been identified as a serious problem (Zapf & Einarsen, 2011). Various studies have been conducted and different models have been applied to test bullying results and antecedents in western societies. However, it is vague whether conclusions of those studies are applicable to nonwestern societies like Asian countries. Most of the studies have been conducted cross culturally or cross nationally. However, some studies have identified the prevalence of bullying and frequencies of negative behavior and acts (Giorgi & Majer, 2008).

Previously research work on workplace bullying have been conducted with focus on defining it, measuring it and explaining its nature, with the focus on individual (Liefvooghe & Davey, 2001). Organization play critical part in the manifestation of bullying, and the way employees react according to environmental situation (Zapf, 1999; Liefvooghe & Davey, 2001).

Various researches have evidenced that bullying is associated with stressful and adverse working conditions. The findings of O'Moore and Lynch's (2007) study are supporting the findings of various other research works like (Einarsen, Raknes, & Matthiesen, 1994; Hoel & Cooper, 2000; Vartia, 2003; O'Moore, 2000). The findings of O'Moore and Lynch's (2007) indicates that lack of individual control; poor social climate and big role of vagueness are connected with higher levels of bullying prevalence. Salin (2003) conducted cross sectional research study, the respondents were business professionals. The findings of study showed, bullying and competitive climate were positively correlated. Einarsen et al. (1994) indicated that bullying and harassment are positively related with one another in the work setting, it has negative effect on the organizational leadership and work satisfaction of employees.

Di Martino, Hoel, and Cooper (2003) studied the identification of high risk sectors and professions regarding workplace bullying. Their study investigated several European surveys of bullying at the workplace. Di Martino et al. (2003) identified that public sector is facing a higher level bullying as compared to private sector. Zapf, Knorz, and Kulla (1996) stated that in public zone there are lower level of opportunities of getting mobilized and a very smaller number of people who decide to leave their job due to conflict.

In recent years, workplace bullying has been investigated in public or defense organizations (Archer, 1999; Dick, 2008; Di Martino, Hoel, & Copper, 2003). Police department is the best department to study the phenomena of workplace bullying. These glitches are linked with highly stressful environment (Tuckey et al, 2009), too much burden of work, higher pressure of work (Bowling & Beehr, 2006; Baillien & De Witte, 2009; Baillien, Neyens, & De Witte., 2008; Hauge et al., 2011) and authoritarian leadership style (O'Moore et al., 1998) these features lessen the chances of executives to experience the results of his actions (Salin, 2003).

Workplace bullying is basically a negative behavior among the peers or between juniors and seniors in an organization (Einarsen, 2000; Cleveland & Kerst, 1993). A harmed person of the workplace bullying gets systematic attacks directly or indirectly continuously, over a long period of time. It causes psychological violence (Di Martin, Hoel, & Cooper, 2003), however few researchers refer it to as physical abuse (Brodsky, 1976). Most of the times, the purpose is to abolish the victim of bullying by stopping communication, avoiding contact with coworkers or tumbling their work assignments in organization so that they may get de motivated and resultantly wanted to switch their job (Einarsen et al., 1994; Niedl, 1995; Vartia, 1996; Rayner et al., 2002; Salin, 2003; Zapf et al., 1996). Bullying at work place may not restricted to harassment of worker (Lynch, 2002), in fact, it may be referred to as a destructive behavior of person who is in position of higher power (Tuckey et al., 2009; Björkqvist, Sterman, & Bäck, 1994; Niedl, 1995; Einarsen et al., 2005).

## 2. Literature Review

Research regarding the workplace bullying came to the eyes in the past 20 years, where 50-80% employees point out that their supervisors are the main perpetrators of bullying (Nielsen, Matthiesen, & Einarsen, 2005). World health organization stated that workplace bullying considered as a severe hazard to the health of employees in the organization. They are taking some serious actions to eradicate it (World Health Organization, 2010). Workplace bullying is not only changing the perception of one's life but also the perception about one's working environment and he feels threats, uncertainty and hostility in his work life (Einarsen & Mikkelsen, 2002). The effective strategies for the prevention of bullying are reliant on the eminence of employee environment which is created within organization and maintained by the leaders. Leka et al. (2010) describes that the way in which leaders handle and manage job context and job content, organizational impacts on employees are influenced. Research regarding the field of general management, indicates that leadership, most importantly negative and non-supportive leadership style, play as crucial feature causing the pervasiveness of bullying at workplace (Hauge et al., 2007, 2011; Skogstad et al., 2011; Agervold & Mikkelsen, 2004). Employees feel Workplace bullying when they donot feel that organization is giving them full attention regarding their work and they also feel zero support for any work they are doing in the organization (Zapf & Einarsen, 2005). Furthermore, when they address such kind of issues with the organization, they don't give them full attention, so they feel less satisfied and have low level of trust in organization's internal process, along with this they also have negative effect on organization (Fox and Stallworth., 2005), which directly impacts on the job satisfaction. Research indicates that most of the workplace bullying happens at the level of the supervisors (Hoel & Cooper, 2001). Workplace bullying is closely related with the interaction between the subordinates-supervisor and types of leadership (Einarsen, Raknes, & Matthiesen, 1994).

However, authentic leadership, motivated on the relationship of leadership style towards elimination of bullying at workplace and promotes the behavior of organizational citizenship supportive team work, and increases team spirit (Walumbwa et al., 2011; Wong, 2009; Henderson,

1994). However, some of the researches have investigated the bond among leadership and occurrence of bullying in police (Tomey, 2009). Leaders are those who build and support the positive work environments which leads to job satisfaction and employee retention (Weberg, 2010; Force, 2005; Duffield et al., 2009), presented a research in which they state that workplace bullying is cause to the dissatisfaction of employees. Job satisfaction, job motivation and retention of the employees previously has been discussed with the effect of authentic leadership to reduce inequalities and to strengthen the leader-employee relationship (Ahmad & Rainyee, 2014; Bothma & Roodt, 2013; Chang, Wang, & Huang, 2013; Peus et al., 2012). Police is on number four from those departments which are facing workplace bullying in Australia (Australia, 2012), so the case is not different in Pakistan. The purpose of this paper is to examine a model relating to authentic leadership, experiences bullying at workplace and its effect on the outcomes of employee retention.

## ***2.1 Theoretical Framework***

In this study theoretical framework is cohesive with authentic leadership model Avolio et al. (2004), view of workplace bullying. Moreover, burnout model in order to investigate the factors which influence police on employee's retention outcomes (Einarsen et al., 1998; Leiter & Maslach's, 2004). Authentic leadership concept of positive qualities of leaders and it has been seen that it influences the employee performance by emphasizing on the strengths of the employees rather than weaknesses of employees (Wong & Cummings, 2009; Avolio & Gardner, 2005). Authentic leaders are engaged in building trust working conditions and supporters of authentic leaders are involved in four kinds of behaviors; balanced processing, internalized moral perspective, self-awareness and relational transparency. In balanced processing, leaders try to collect and analyze both negative and positive viewpoints, before making crucial decisions. In relational transparency, leader openly shares thoughts with others, convey feelings truly, and also encourages others to share what they feel or think and do consider their opinions. According to moral perspective of self-regulation is done through internal moral standards of organization, values and the decisions made by leaders of this behavior are consistent with the values. Authentic leaders are conscious of their own strength and weakness and know how their strengths and weaknesses influence others (Walumbwa et al., 2011). Avolio et al. (2009) viewpoint is authentic leaders construct environments where trust and employee's identification with leaders is promoted. Resultantly, organizations achieve their goals through increased levels of performance by employees and organization overall.

## ***2.2 Influence of Authentic Leadership on Bullying***

Detailed literature review shows that studies have associated authentic leadership experiences to bullying at work place, however impact of further styles of leadership on bullying has been considered, but the effect of authentic leadership practices has been ignored from the context of police. Hauge et al. (2011) studied workplace bullying in more than ten thousand employees from various professions in Norway. The findings of their study showed that when employees have viewpoint that

their leader is supportive and fair, there are less number of incidents where workplace bullying is reported. However, when leaders are perceived as unsupportive and unfair in their dealings, bullying may take place.

That's why it is rational to anticipate that authentic leadership is favorable in building work environments where bullying does not take place. Most of the times bullying takes place in stressful environments (like part excess, high expectations, and uncertainty) where employees get frustrated in order to achieve their work objectives (Hauge et al., 2007, 2011; Skogstad et al., 2007). Detailed exploration has revealed that authentic leadership correlated with employee commitment (Wong et al., 2013; Giallonardo et al., 2010), so resultantly there are lower levels of burnout and employees are highly satisfied with their job (Schaufeli & Bakker, 2004; Christian et al., 2011). There is possibility, by constructing employees' engagement; authentic leadership may be helpful in eliminating workplace bullying.

### **2.3 Burnout**

Maslach and Leiter (2006) asserts that burnout is a well-documented psychosomatic reaction towards prolonged job stressors. Basically, burnout is consisted on three elements i.e. personal efficacy, emotional fatigue and sarcasm, where emotional fatigue is referred to as the central component of burnout (Maslach & Leiter, 2006; Leiter, Harvie, & Frizzell, 1998; Leiter & Maslach, 2009). It is associated with the employees whose job is much more demanding like police, where employees! are dealing with other human beings. In Richelson (1980) point of view, burnout is basically a state of fatigue or frustration which may be because of any reason. it being a pattern of emotional fatigue, depersonalization, and compact personal achievement (Maslach & Jackson, 1981). This definition of burnout is best suited in police service as in police job; one has to deal with human beings (Aremu, 1998). It may be inferred from the existing literature that stress causes job burnout. employees who are engaged in personal interaction are more in danger of experiencing occupational stress and job burnout, and in police service employees are more exposed to occupational stress (Adeyemo & Ogunyemi, 2005).

### **2.4 Turnover Intention and Job Satisfaction**

Several studies evidenced important negative correlated between turnover intention and job satisfaction in different setting. considered IT professionals and found that job satisfaction has negatively relationship with turnover intention of the employees (Rahman et al., 2008). Modest relationship among job satisfaction and turnover intentions has been found by Khatri, Fern and Budhwar (2001) in their study. Moderate relationship between these two variables has been found by (Sarminah, 2006). Korunka et al. (2009) described negative relationship between employee turnover intention and job satisfaction in their study.

Many of the organizations are still working by keeping in view the scientific management approach and employees are still treated just as a machine which does not possess any feelings and attitudes. Employees' satisfaction including police employees is hinged only on the basis of salary (Banjoko, 1996). Detailed literature review showed that some other causes of dissatisfaction may be (transfer, inconvenience, poor equipment, etc.) among police employees (Bamidele et al., 2009). Employee Turnover is stated to as conscious willingness of employee to switch the organization (Adebayo & Ogunsina., 2011; Argyle & Hallahmi, 2014). Despite the fact of its effect on survival and performance of the organization, this phenomenon has not attained much attention in police service.

### 3. Methodology

#### 3.1 Participants

The model is tested using data which was collected from jail employees in Pakistan. Survey questionnaire was distributed among different jails of Pakistan. For data collection purpose, permission was taken by IG of the related province. After getting permission questionnaires were handed to assistant superintendent of jail. 450 Questionnaires were returned, of which 20 questionnaire were not filled appropriately so they were discarded. Out of 450 questionnaires, 30 questionnaires were containing missing responses therefore those questionnaires were discarded. Final sample consisted on 400 police employees.

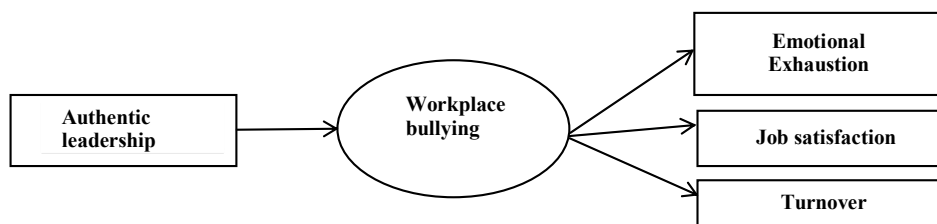


Figure 1: Hypothesized Study Model

#### 3.2 Instrumentation

In order to measure variables of this study, standardized questionnaire was used. All measures were possessing acceptable reliability. Questionnaire of Authentic Leadership was used to quantify the four factors of police employees (1) interactive transparency (2) stable processing (3) moral/ethical (4) self-awareness (Avolio et al., 2004).

Sixteen items of questionnaire used a Likert scale range between 0 to 4. A total authentic leadership results was attained by averaging the four subscales. Cronbach's alpha is used to check

internal consistency of data which is acceptable value ranging between .70 to .90 (Walumbwa et al., 2011) and also Confirmatory factor analysis has supported the dimensions of the authentic leadership questionnaire (Walumbwa et al., 2011). Negative Acts Questionnaire-Revised were used to measure the bullying behavior which was designed to measure associated factor person, work and physical related with bullying. Schaufeli et al. (1996) was used Burnout Inventory-General Survey to measure emotional exhaustion of police burnout.

Employee retention job satisfaction and turnover results were evaluated by using (Hackman & Oldham, 1975; Kelloway, Gottlieb, & Barham., 1999).

## 4. Results

### 4.1 Data Analysis

SPSS has been used for data analysis and AMOS has been used to check fitness of the hypothesized model of this study. Reliability has also been measured for all of the constructs. Table 1.1 and 1.2 shows the data collection and demographics profile of respondents.

Table 1  
*Data Collection*

Data Collection Procedure	
Research Paradigm	Positivism
Research Method	Quantitative
Strategy of Inquiry	Survey Questionnaire
Data Source	Jails
Sampling	Simple random sampling Sampling unit: police employees Sample size: 400

Table 2  
*Demographic Profile of Respondents*

		No. of Respondents	Percentage
Gender	Male	301	75.3
	Female	99	24.8
	Total	400	100.0
Age of the respondents	20–30	330	82.5
	31–40	54	13.5
	41–50	16	4.0
	Total	400	100.0

Total number of respondents was 400. Survey questionnaire have been used to collect data from police employees. Below is the explanation of the results of the study.

Table 3

*Means, Standard Deviations, Cronbach's Alpha and Correlation Coefficients*

Construct	Mean	STD	1	2	3	4	5	6	7	8	9	10	11	12
Authentic leadership	2.49	0.88	0.99											
Relational transparency	2.59	0.87	0.9	0.987										
Internalized moral perspective	2.56	0.94	0.9	0.987	0.977									
Balanced processing	2.47	1.1	0.95	0.75	0.78	0.978								
Self-awareness	2.29	1.14	0.95	0.7	0.72	0.86	0.908							
Workplace bullying	1.59	.057	-.37	-.29	-.27	-.38	-.36	0.89						
Person related bullying	1.51	0.59	-.29	-.25	-.23	-.33	-.28	0.97	0.841					
Work related bullying	1.94	0.78	-0.39	-0.34	-0.27	-0.42	0.39	0.9	0.72	0.778				
Physically bullying	1.51	0.68	-0.2	-.17	-0.15	-0.23	-0.11	0.66	0.47	0.5	0.723			
Emotional exhaustion	2.95	1.59	-0.25	-0.19	-0.19	-0.25	-0.26	0.49	0.36	.54	.25	0.947		
Job satisfaction	3.17	0.9	0.45	0.37	0.36	0.37	0.46	-0.47	-0.37	-0.53	-0.24	-0.49	0.89	
Turnover	2.69	1.29	-.35	-.29	-.29	-.29	-0.26	0.35	0.37	0.37	0.21	0.38	0.66	0.807

#### 4.2 Correlations Among Variables

Table 3 shows that Workplace bullying mean value was not high as it was ( $M = 1.59$ ), though 30.1% of police employees are classified as being bullied according to the criteria set by Einarsen et al.'s (1998) for being bullied. The results indicate that 25.2 % of the police respondents face work related bullying at workplace. However, 6.1% of the police respondents face personal attacks and 2.0% of the respondents face physical bullying at workplace. The results show that police respondents were not much satisfied with their job which may be due to being bullied at workplace as the mean value is 3.17 on a 5-point scale which indicate that they were only somewhat satisfied with their jobs. Authentic leadership was strongly correlated with work related bullying and job satisfaction as the results indicate the values ( $r = -.39$ ), ( $r = .45$ ) respectively. Intention to leave the organization and job satisfaction were possessing significant relationship with bullying and burnout.

### 4.3 Model Testing

Table 4 indicates the results of the structural model which shows that model is considered a good fit As the value of RMSEA is 0.032 and  $\chi^2/df$  is 2.32.

Table 4  
*Mediation Analysis of Workplace Bullying*

Fit Index	Scores
Absolute Fit Measure	
$X^2/df$	2.34
GFI	0.720
RMSEA	0.032
Incremental Fit Measure	
NFI	0.703
AGFI	0.824
CFI	0.859

Authentic leadership is having significant negative relationship with workplace bullying i.e.  $\beta = .37$  and is possessing positive and significant relationship with emotional exhaustion i.e.  $\beta = .49$ . Workplace bullying is directly negatively influencing job satisfaction i.e.  $\beta = .25$  and indirectly, negatively impacting emotional exhaustion.

## 5. Conclusion

The results of the paper show the significance of leadership in facilitating the employees with favorable workplace environment which is free of any negativity like bullying and is helpful in the prevention of burnout at workplace and most of the employees can be retained in this way which will save the organization to suffer from the loss of its workforce or competent and talented human resource. This study is also adding value in the literature by theoretically understanding the phenomena that leadership could be utilized to remove any mistreatment or unfavorable conditions from workplace which may cause job burnout or loss to the organization. It is also helpful in getting understanding of the relationship among the key variables of this study.

### 5.1 Recommendations

According to the findings of this study, the following these recommendations are made:

- Healthy environment should be provided to the police employees that may be helpful in the discouragement of bullying at workplace. Supportive working conditions are helpful in the



transition and retention of police employees.

- One crucial element of the strategy regarding workplace bullying is education and training of police employees. It is the responsibility of the executive management to make sure that all employees are well trained regarding seeking the elimination of bullying at workplace.
- Senior Police officers or supervisors are required to implement leadership styles which are best suited with the environment of police employees.

## 5.2 Implications

The selected literature is crucial to police experiences of job outcomes. The results indicate that leadership behavior is linked with bullying, job satisfaction, burnout and job turnover intentions within 5 years of job experience. Authentic leadership behaviors at workplace are very crucial on a personal level at workplace, bullying may be prevented by authentic leadership. When the working environment is better and favorable, employees may bond very well which is important particularly at jails when employees are directly coping up with criminals. The employees must be satisfied so that they may not think of quitting their jobs which fosters teamwork and collaboration at workplace.

This study is cross sectional, so future researchers may carry this research as longitudinal in nature to get more insights into the topic. Future studies may consider gender, age or position as a moderator in the structural model presented above.

## References

- Adebayo, S. O., & Ogunsina, S. O. (2011). Influence of supervisory behaviour and job stress on job satisfaction and turnover intention of police personnel in Ekiti State. *Journal of Management and Strategy*, 2(3), 13-29.
- Adeyemo, D. A., & Ogunyemi, B. (2005). Emotional intelligence and self-efficacy as predictors of occupational stress among academic staff in a Nigerian university. *J organiz learn Leadersh*, 7(2), 1-14.
- Agervold, M., & Mikkelsen, E. G. (2004). Relationships between bullying, psychosocial work environment and individual stress reactions. *Work & Stress*, 18(4), 336-351.
- Ahmad, A., & Rainyee, R. A. (2014). Which is the better predictor of employee turnover intentions: Job satisfaction or organizational commitment? A literature review. *Business and Management*, 6(1), 74-81.
- Archer, D. (1999). Exploring “bullying” culture in the para-military organisation. *International*

*Journal of Manpower*, 20 (1/2), 94-105.

- Aremu, A. O., & Adeyoju, C. A. (2003). Job commitment, job satisfaction and gender as predictors of mentoring in the Nigeria Police. *Policing: An International Journal of Police Strategies & Management*, 26(3), 377-385.
- Argyle, M., & Beit-Hallahmi, B. (2014). The psychology of religious behaviour, belief and experience. Routledge.
- Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *The Leadership Quarterly*, 16(3), 315-338.
- Avolio, B. J., Gardner, W. L., Walumbwa, F. O., Luthans, F., & May, D. R. (2004). Unlocking the mask: A look at the process by which authentic leader's impact follower attitudes and behaviors. *The Leadership Quarterly*, 15(6), 801-823.
- Avolio, B. J., Walumbwa, F. O., & Weber, T. J. (2009). Leadership: Current theories, research, and future directions. *Annual Review of Psychology*, 60, 421-449. In Ireland. *Qualitative Research in Organizations and Management: An International Journal*, 13(1), 79-97
- Baillien, E., & De Witte, H. (2009). Why is organizational change related to workplace bullying? Role conflict and job insecurity as mediators. *Economic and Industrial Democracy*, 30(3), 348-371
- Baillien, E., Neyens, I., De Witte, H., & De Cuyper, N. (2009). A qualitative study on the development of workplace bullying: Towards a three-way model. *Journal of Community & Applied Social Psychology*, 19(1), 1-16.
- Bakker, A. B., & Schaufeli, W. B. (2008). Positive organizational behavior: Engaged employees in flourishing organizations. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 29(2), 147-154.
- Bamidele, J. O., Adebimpe, W. O., & Oladele, E. A. (2009). Knowledge, attitude and use of alternative medical therapy amongst urban residents of Osun State, southwestern Nigeria. *African Journal of Traditional, Complementary and Alternative Medicines*, 6(3), 281-288.
- Banjoko, S. (1996). Human Resource Management in Nigeria: An Expository Approach, Lagos.
- Björkqvist, K., Österman, K., & Hjelt-Bäck, M. (1994). Aggression among university employees. *Aggressive Behavior*, 20(3), 173-184.
- Bothma, C. F., & Roodt, G. (2013). The validation of the turnover intention scale. *SA Journal of Human Resource Management*, 11(1), 1-12.

- Bowling, N. A., & Beehr, T. A. (2006). Workplace harassment from the victim's perspective: a theoretical model and meta-analysis. *Journal of Applied Psychology*, 91(5), 998-112.
- Brodsky, C. M. (1976). *The Harassed Worker*. DC Heath & Co.
- Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263-296.
- Chang, W. J. A., Wang, Y. S., & Huang, T. C. (2013). Work design-related antecedents of turnover intention: A multilevel approach. *Human Resource Management*, 52(1), 1-26.
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, 64(1), 89-136.
- Cleveland, J. N., & Kerst, M. E. (1993). Sexual harassment and perceptions of power: An under-articulated relationship. *Journal of Vocational Behavior*, 42(1), 49-67.
- Di Martino, V., H. Hoel and C. L. Cooper (2003). Preventing Violence and Harassment in the Workplace. European Foundation for the Improvement of Living and Working Conditions, Luxembourg: Office for Official Publications of the European Community.
- Dick, G. P. (2008). The influence of managerial factors on bullying in the police. *Kent Business School Working Paper Series No. 179*.
- Diddams, M., & Chang, G. C. (2012). Only human: Exploring the nature of weakness in authentic leadership. *The Leadership Quarterly*, 23(3), 593-603.
- Duffield, C., Roche, M., O'Brien-Pallas, L., Catling-Paull, C., & King, M. (2009). Staff satisfaction and retention and the role of the nursing unit manager. *Collegian*, 16(1), 11-17.
- Einarsen, S. (2000). Harassment and bullying at work: A review of the Scandinavian approach. *Aggression and Violent Behavior*, 5(4), 379-401.
- Einarsen, S., & Mikkelsen, E. G. (2002). Individual effects of exposure to bullying at work. In *Bullying and emotional abuse in the workplace* (145-162). CRC Press.
- Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (2005). Workplace Bullying: individual pathology or organizational culture. *Workplace Violence*, 229-247.
- Einarsen, S., Matthiesen, S., & Skogstad, A. (1998). Bullying, burnout and well-being among assistant nurses. *Journal of Occupational Health and Safety Australia and New Zealand*, 14(1), 563-568.

- Einarsen, S., Raknes, B. R. I., & Matthiesen, S. B. (1994). Bullying and harassment at work and their relationships to work environment quality: An exploratory study. *European Journal of Work and Organizational Psychology*, 4(4), 381-401.
- Farr-Wharton, B., Shacklock, K., Brunetto, Y., Teo, S. T., & Farr-Wharton, R. (2017). Workplace bullying, workplace relationships and job outcomes for police officers in Australia. *Public Money & Management*, 37(5), 325-332.
- Force, M. V. (2005). The relationship between effective nurse managers and nursing retention. *JONA: The Journal of Nursing Administration*, 35(7), 336-341.
- Fox, S., & Stallworth, L. E. (2005). Racial/ethnic bullying: Exploring links between bullying and racism in the US workplace. *Journal of Vocational Behavior*, 66(3), 438-456.
- Gardner, W. L., Avolio, B. J., Luthans, F., May, D. R., & Walumbwa, F. (2005). "Can you see the real me?" A self-based model of authentic leader and follower development. *The Leadership Quarterly*, 16(3), 343-372.
- Giallonardo, L. M., Wong, C. A., & Iwasiw, C. L. (2010). Authentic leadership of preceptors: predictor of new graduate nurses' work engagement and job satisfaction. *Journal of Nursing Management*, 18(8), 993-1003.
- Giorgi, G., & Majer, V. (2008). Not only performance: The link of emotional intelligence with organizational climate, workplace bullying, organizational context and socialization processes. *International Journal of Psychology*, 43(3-4), 241-270.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 60(2), 159-173.
- Hassan, A., & Ahmed, F. (2011). Authentic leadership, trust and work engagement. *International Journal of Human and Social Sciences*, 6(3), 164-170.
- Hauge, L. J., Einarsen, S., Knardahl, S., Lau, B., Notelaers, G., & Skogstad, A. (2011). Leadership and role stressors as departmental level predictors of workplace bullying. *International Journal of Stress Management*, 18(4), 305-332.
- Henderson, G. (1994). Cultural diversity in the workplace: Issues and strategies. Praeger Publishers.
- Hmieleski, K. M., Cole, M. S., & Baron, R. A. (2012). Shared authentic leadership and new venture performance. *Journal of Management*, 38(5), 1476-1499.
- Hoel, H., & Cooper, C. L. (2000). Destructive conflict and bullying at work. Manchester: Manchester School of Management, UMIST.

- Hoel, H., & Cooper, C. L. (2001). Origins of bullying. Building a culture of respect: Managing bullying at work, 3.
- Jensen, S. M., & Luthans, F. (2006). Relationship between entrepreneurs' psychological capital and their authentic leadership. *Journal of Managerial Issues*, 18 (2), 254-273.
- Johan Hauge, L., Skogstad, A., & Einarsen, S. (2007). Relationships between stressful work environments and bullying: Results of a large representative study. *Work & Stress*, 21(3), 220-242.
- Kelloway, E. K., Gottlieb, B. H., & Barham, L. (1999). The source, nature, and direction of work and family conflict: A longitudinal investigation. *Journal of Occupational Health Psychology*, 4(4), 337-353.
- Khan, S. N. (2010). Impact of authentic leaders on organization performance. *International Journal of Business and Management*, 5(12), 167-185.
- Khatri, N., Fern, C. T., & Budhwar, P. (2001). Explaining employee turnover in an Asian context. *Human Resource Management Journal*, 11(1), 54-74.
- Korunka, C., Kubicek, B., Schaufeli, W. B., & Hoonakker, P. (2009). Work engagement and burnout: Testing the robustness of the Job Demands-Resources model. *The Journal of Positive Psychology*, 4(3), 243-255.
- Laschinger, H. K. S., Wong, C. A., Cummings, G. G., & Grau, A. L. (2014). Resonant leadership and workplace empowerment: The value of positive organizational cultures in reducing workplace incivility. *Nursing Economics*, 32(1), 5-26.
- Leiter, M. P., & Maslach, C. (2009). Nurse turnover: the mediating role of burnout. *Journal of Nursing Management*, 17(3), 331-339.
- Leiter, M. P., Harvie, P., & Frizzell, C. (1998). The correspondence of patient satisfaction and nurse burnout. *Social Science & Medicine*, 47(10), 1611-1617.
- Leka, S., Jain, A., Zwetsloot, G., & Cox, T. (2010). Policy-level interventions and work-related psychosocial risk management in the European Union. *Work & Stress*, 24(3), 298-307.
- Liefooghe, A. P., & Mac Davey, K. (2001). Accounts of workplace bullying: The role of the organization. *European Journal of Work and Organizational Psychology*, 10(4), 375-392.
- Lynch, J. (2002). Workplace Bullying: Implications for Police organizations. Marden, SA: Australasian center for policing research.

- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99-113.
- Maslach, C., & Leiter, M. P. (2006). Burnout. *Stress and Quality of Working Life: Current Perspectives in Occupational Health*, 37(2), 42-49.
- McNamara, P., Fitzpatrick, K., & Mac Curtain, S. (2017). Workplace bullying and redress procedures: Experiences of teachers in Ireland. *Journal of Research in Organisations and Management*, 13(1), 79-97.
- Miniutaitė, A., & Bučiūnienė, I. (2013). Explaining authentic leadership work outcomes from the perspective of self-determination theory. *Organizacijų Vadyba: Sisteminiai Tyrimai*, 65(1), 63-75.
- Niedl, K. (1995). Mobbing/Bullying am Arbeitsplatz. Eine empirische Analyse zum Phänomen sowie zu personalwirtschaftlich relevanten Effekten von systematischen Feindseligkeiten. *Zeitschrift für Personalforschung/German Journal of Research in Human Resource Management*, 9(H. 3), 297-300.
- Nielsen, M. B., Matthiesen, S. B., & Einarsen, S. (2005). Leadership and interpersonal conflicts: Symptoms of posttraumatic stress among targets of bullying from supervisors. *Nordisk Psykologi*, 57(4), 391-415.
- Nielsen, M. B., Skogstad, A., Matthiesen, S. B., Glasø, L., Aasland, M. S., Notelaers, G., & Einarsen, S. (2009). Prevalence of workplace bullying in Norway: Comparisons across time and estimation methods. *European Journal of Work and Organizational Psychology*, 18(1), 81-101.
- O'Moore, M., Seigne, E., McGuire, L., & Smith, M. (1998). Victims of workplace bullying in Ireland. *The Irish Journal of Psychology*, 19(2-3), 345-357.
- O'Moore, M. (2000). Critical issues for teacher training to counter bullying and victimisation in Ireland. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, 26(1), 99-111.
- O'Moore, M., & Lynch, J. (2007). Leadership, Working Environment and Workplace Bullying. *International Journal of Organization Theory & Behavior*, 10(1), 95-117.
- Opatokun, K. A., Hasim, C. N., & Hassan, S. S. S. (2013). Authentic leadership in higher learning institution: A case study of International Islamic University Malaysia (IIUM). *International Journal of Leadership Studies*, 8(1), 49-66.

- Owusu Bempah, J., Addison, R., & Fairweather, J. R. (2011). Does follower subjectivity matter in defining authentic leadership?. A call for qualitative research.
- Peterson, S. J., Walumbwa, F. O., Avolio, B. J., & Hannah, S. T. (2012). RETRACTED: The relationship between authentic leadership and follower job performance: The mediating role of follower positivity in extreme contexts.
- Peus, C., Wesche, J. S., Streicher, B., Braun, S., & Frey, D. (2012). Authentic leadership: An empirical test of its antecedents, consequences, and mediating mechanisms. *Journal of Business Ethics*, 107(3), 331-348.
- Puls, T. R., Ludden, L. L., & Freemyer, J. (2014). Authentic leadership and its relationship to ministerial effectiveness. *Journal of Applied Christian Leadership*, 8(1), 55-75.
- Rahman, A., Naqvi, S. M. M. R., & Ramay, M. I. (2008). Measuring turnover intention: A study of it professionals in Pakistan. *International Review of Business Research Papers*, 4(3), 45-55.
- Rayner, K., Foorman, B. R., Perfetti, C. A., Pesetsky, D., & Seidenberg, M. S. (2002). How should reading be taught?. *Scientific American*, 286(3), 84-91.
- Richelson, J. T. (1980). Running off empty: run-off point systems. *Public Choice*, 35(4), 457-468.
- Roche, S. (2010). From youth bulge to conflict: the case of Tajikistan. *Central Asian Survey*, 29(4), 405-419.
- Salin, D. (2003). Ways of explaining workplace bullying: A review of enabling, motivating and precipitating structures and processes in the work environment. *Human Relations*, 56(10), 1213-1232.
- Sarminah, S. (2006). The differential effects of creative organizational climate and organizational commitment on learning organization.
- Schaufeli, W. B., Dierendonck, D. V., & Gorp, K. V. (1996). Burnout and reciprocity: Towards a dual-level social exchange model. *Work & Stress*, 10(3), 225-237.
- Seigne, E., Coyne, I., Randall, P., & Parker, J. (2007). Personality traits of bullies as a contributory factor in workplace bullying: An exploratory study. *International Journal of Organization Theory and Behavior*, 10(1), 118-134.
- Skogstad, A., Torsheim, T., Einarsen, S., & Hauge, L. J. (2011). Testing the work environment hypothesis of bullying on a group level of analysis: Psychosocial factors as precursors of observed workplace bullying. *Applied Psychology*, 60(3), 475-495.

- Tomey, A. M. (2009). Nursing management and leadership. Missouri: Elsevier.
- Tonkin, T. H. (2013). Authentic versus transformational leadership: Assessing their effectiveness on organizational citizenship behavior of followers. *International Journal of Business and Public Administration*, 10(1), 40-61.
- Toor, S. U. R., & Ofori, G. (2009). Authenticity and its influence on psychological well-being and contingent self-esteem of leaders in Singapore construction sector. *Construction Management and Economics*, 27(3), 299-313.
- Tuckey, M. R., Dollard, M. F., Hosking, P. J., & Winefield, A. H. (2009). Workplace bullying: The role of psychosocial work environment factors. *International Journal of Stress Management*, 16(3), 215-233.
- Vartia, M. (2003). Workplace Bullying: A Study on the Work Environment, Well-Being and Health (No. 56). Finnish Institute of Occupational Health, People and Work Research Reports.
- Walumbwa, F. O., Mayer, D. M., Wang, P., Wang, H., Workman, K., & Christensen, A. L. (2011). Linking ethical leadership to employee performance: The roles of leader-member exchange, self-efficacy, and organizational identification. *Organizational Behavior and Human Decision Processes*, 115(2), 204-213.
- Wang, D. S., & Hsieh, C. C. (2013). The effect of authentic leadership on employee trust and employee engagement. *Social Behavior and Personality: An International Journal*, 41(4), 613-624.
- Weberg, D. (2010). Transformational leadership and staff retention: an evidence review with implications for healthcare systems. *Nursing Administration Quarterly*, 34(3), 246-258.
- Webster, A. G. (2016). Partial differential equations of mathematical physics. Courier Dover Publications.
- Wong, C., & Cummings, G. (2009). Authentic leadership: a new theory for nursing or back to basics? *Journal of Health Organization and Management*, 23(5), 522-538.
- Wong, Y. T., & Wong, Y. W. (2013). Workplace guanxi and employee commitment to supervisor in Chinese international joint ventures. *Journal of Chinese Human Resources Management*, 4 (1), 39-57.
- World Health Organization. (2010). World health statistics 2010. Retrieved from [http://www.who.int/whosis/whostat/EN\\_WHS10\\_Full.pdf](http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)
- Zapf, D. (1999). Organisational, work group related and personal causes of mobbing/bullying at work. *International Journal of Manpower*, 20(1/2), 70-85.



- Zapf, D., & Einarsen, S. (2001). Bullying in the workplace: Recent trends in research and practice— an introduction. *European Journal of Work and Organizational Psychology*, 10(4), 369-373.
- Zapf, D., Knorz, C., & Kulla, M. (1996). On the relationship between mobbing factors, and job content, social work environment, and health outcomes. *European Journal of Work and Organizational Psychology*, 5(2), 215-237.

# A Qualitative Study Examining The Impact of Effective HR Practices on Organizational Performance

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## Abstract

*The study has been conducted to find constructive human resource practices using purposive sampling and through fifteen semi-structured interviews from the employees of a banking organization. It contributes to the body of knowledge because targeted research area is highly under researched in the sub-continent and scant studies have been found to explore the impact of HR practices (i.e. training and development, culture, performance appraisal, and competencies) on organizational performance in a banking organization. The findings of the present study can help the managers to answer how to enhance an organization's performance using green HR practices. The study explores the various important aspects of HRM practices that would help the banking organization to perform efficiently and effectively. Qualitative data have been obtained using fifteen semi-structured interviews from the employees of Muslim Commercial banks (MCBs) of Pakistan. The findings of this study suggest that MCBs can endure and compete the future challenges if they develop their human capital that must have proficiency and capabilities for specialized banking such as treasury functions, control on operation tasks and online banking. There is a dire need to develop a mechanism for the banking sector to foster competencies and skills and gain competitive advantage in uncertain environment.*

**Keywords:** Human resource practices, Organizational performance, Organizational culture, Competency level, Training and development, Performance appraisal.

**JEL Classification:** M540

## 1. Introduction

Human Resource (HR) manager used different organizational parameters to support human capital management in organizations (Chen, 2016; Rasool et al., 2015). Human resource practices are focused on strategic actions and functions that can support to select and retain employees by giving attractive packages and also develop their capabilities and career by providing development programs (Kehoe & Wright, 2013). In the modern world, it is not possible to consider that the success of organization scans be possible without these effective human resource management practices:

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recruitment and selection, labor law, human resource development, compensation and benefits (Aslam et al., 2018a; Budhwar & Debrah, 2013; Rasool et al., 2015). However, it is not easy to foster effective human resource practices that can enhance the organizational performance and employees' performance at large (Budhwar & Debrah, 2013; Chang et al., 2016).

The rationale for the current study is based on previous shortcoming of different studies that is derived from the extensive literature review. A major gap is based on the previous studies to investigate HR practices (Boswell, 2006; Budhwar & Debrah, 2013; Chen et al., 2016; Muqadas et al., 2017a; Aslam et al., 2018b; Kraaijenbrink, Spender, & Groen, 2010) and its role to enhance the organizational performance in the context of a developing country. The reasons to conduct study on banking sector because it has significant transformation since 90s to the first decade of the 21st century. This transformation has led to bring significant changes in the HR practices and also become the reason to conduct this study. The fast growth of the sector has occurred after privatization and deregulation when new banks came into existence, competition and uncontrollable factors forced the banks to undertake major reforms. The major element of the reforms was to reform the HR departments within the banks which brought changes within the activities, structure and practices of the HR system. Organizations are continuously adopting the globally accepted and recognized HR practices to deal with diversified employees (Briscoe & Schuler, 2004; Chen et al., 2016; Pinnington, 2011; Muqadas et al., 2017b; Aslam et al., 2018b; Schuler, Jackson, & Tarique, 2007; Sparrow, 2010). Warner (2011) suggested that HR practices must have sufficient practical implications in order to enhance performance. In Pakistan, many organizations and their employees are not following the HR practices properly even after the recognition of HR policies and procedures that can enhance the employees as well as organizational performance in the workplace. HR practices and policies yet has to be implemented properly in numerous business sectors especially in the context of a developing country. The private local companies and banking sectors have HR department but not properly functioning therefore most of the times employees are performing overlapping tasks.

The purpose of this study is to examine the relationship between HR practices (i.e. training and development, culture, performance appraisal, and competencies) and organizational performance in the context of the banking sector of Pakistan. It contributes to the body of knowledge because the targeted research area is highly under researched in the sub-continent and scant studies have been found to explore the impact of HR practices (i.e. training and development, culture, performance appraisal, and competencies) on organizational performance in the banking organizations of a developing country. Moreover, the study explores the various important aspects of HRM practices that would help the bank managers to perform successfully according to the culture of a developing country. The study has conducted to address two major objectives: what are the critical HR issues in the bank and how HR practices can address those issues; how these HR practices can positively influence the culture to enhance organizational performance.

## **2. Literature Review**

### ***2.1 HR Practices and Strategy Function***

Human resource management strategy is divided into four sections to enhance the performance of the organization such as employment proficiencies, perceived organization support, performance measurement, job enforcement and marketplace business (Sheppeck & Militello, 2000). Guest (1997) suggests that human resource strategy is classified into three divisions: quality of service, cost reduction and distinguished by creativity. Moreover, Lee and Lee (2007) conducted research on effect of HRM practices on organizational performance and they highlighted that HR practices are training and learning, compensation and benefit, work in team, job security, and performance appraisal. These practices have significant effect on the organizational performance but also increased the employees' productivity, business flexibility, and service quality of a firm (Budhwar & Debrah, 2013; Chang et al., 2016). Guthrie (2001) propose that for grooming and succeeding, the HR department of an organization should carry out and implemented the best HR universal practices approach that maintain the employees enforcement to become self-indoctrination and self-managing. MacDuffie (1995) illustrates that it's obligatory for an organization to invest on its human capital which enhance the future productivity as well as reduce the cost expense.

### ***2.2 Islamic Culture Influence on the HR Practices***

Manager adopts norm and values under the light of Islam that leads the principles by which human resource management are managed. Values like honesty, responsibilities, authenticity, obedience, devotion, commitment, attentiveness, cleanliness, teamwork, good behavior appreciation, and self-control these all values are supported by from the Holy Quran and the Sunnah of the Last Prophet Hazrat Muhammad (PBUH). Some of the ideology of Islamic management system having the association with the HR practices is as follows.

#### ***2.2.1 Intention (Nya)***

The Prophet Hazrat Muhammad (PBUH) said: '*Actions are recorded according to intention and a person will be rewarded or punished accordingly*'. This principal of Intention taken in HR practices as the remuneration or punishment should be given to the employees for their intended objectives, ideas and employees are punished for making unintentional mistakes.

#### ***2.2.2 Kindness and care (IHSAN)***

Ihsan meaning is forgiveness, excellence and amelioration, doing good activities, helping others, fullness of faith. In order to taking the God satisfaction, worshiping the God by praying

Namaz, helping the people etc. Ihsan leads to the key ethical spirit or faith in Allah. El-Ashker (1987) suggested that those expertise and professionals who having the attribute of Ihsan they provide training and development to their employees and also motivate and give appreciation for the work performance and participate in them in decision making.

### **2.2.3 Trust (Amana)**

*The Holy Quran states: 'O you that believes! Betray not the trust of God and the Apostle norm is appropriate knowingly things entrusted to you'* (Chapter 8, verse 27). In HR practices any behavior is conducted as misuse or mismanagement is taken as violation of trust. Gibb (1964) propose that trust is a mechanism which boosts the social interaction among the employees and sustain the social system in the organization. Those organization having lack of trust among the employees having dysfunctional result, for example, low inspiration, negligible commitment, lack of self-confidence (Kanter & Mirvis, 1989; Carmeale & Wechsler, 1992).

## **2.3 Organizational Culture**

Organizational culture refers to the common beliefs and principles of the firm that makes the behavior pattern of the workers (Chen et al, 2016; Guest, 2011; Kraaijenbrink, Spender & Grown, 2010). Gordon and Tomaso (1992) illustrated that culture of the firm represents the efforts and contributions of the employees and reveals the holistic picture of employees success concerning the organizational goals and objectives as well as makes understanding that how organizational goals and employees interest about their career professional are interrelated. Hofstede et al. (1990) propose that organizational culture mains' purpose is to aligning the employees toward the organizational objectives that each employee and group having their different perceptions and ideas so by making shared ideas pattern organizational culture makes the sustains infrastructure of the firm. Deal and Kennedy (1982) conducted a research on the linkage between organizational culture and organizational performance the results reveals that culture values and human resource development practices having a strong association with the strategies polices of the organizational performance it is hard to say that without human resources practices and organizational culture the firm can achieve its strategic goals. Schein (1990) demonstrate that exceptional human resources practices basically represents the remarkable organizational culture values, natural setting, rite and ritual, ethics such as performance management, labor law, training and learning, career development, recruitment and hiring etc.

## **2.4 HR Practices and Competencies**

Yeung and Tung (1996) demonstrate that HR expertise of the firm build up and enlarge new knowledge, skills and abilities of the employee to complete the obligations and responsibilities which ultimately enhance and maintain the transformation of HR function. Becker et al. (2001) recommend that for improvement and successive performance of the employee the HR professional

must view from different dimension about the HR practices so that the HR department avail the best deliberate performance management approach. For this it's mandatory for the HR professional to understand the core aspect of competency, understand the ideology, relationship, tools, techniques of high-quality measurement, communicating, participate in decision making and having shared view with the senior line managers. Organization can acquire the competitive advantage as well as its HR expertise if it is able to show exceptional client value intention, financial outcome and HR best practices through stronger competency strategic performance management system (Muqadas et al., 2016; Muqadas et al., 2017a). Kumari and Sita (2010) illustrated that Indian organization are now realizing that employees are the competitive assets of their firm and these companies are using competency approach in order to enhancing their human capital knowledge, skills and abilities in every departments, segments and groups through human resource practices like giving them training and development programs, result oriented which ultimately develop and build trust, job satisfaction, employee engagement to organization and productivity.

## ***2.5 Training and Development***

Bandyopadhyay et al. (1977) suggested that in the banking sector the aim of development and training is to provide professional information and education to the employees and enhance particulars technical skills both on the job and off the job training. Agrawal (1978) examine that government, educationists and banking sector may made banking academy where employees jointly avail the framework of training and development programs. Glaveli and Kufidu (2005) conducted research on training policy in two commercial banks via State Bank of India and Jammu Kashmir and the author found a significant relationship between the training and banking sector. The main objective of this research is to find different aspect and dimension of training including the behaviors and actions of management toward training, training contribution, quality of training section and practical to perform the training on the job. Additionally, training and development is the practice where the employees enhance their capabilities, skills, acquaintance, knowledge, information and abilities both theoretically and practically to accomplish the organization ambitions and goals (Mathis & Jackson, 2004).

## ***2.6 Performance Appraisal***

Peter (1994) deliberate that the main purpose of the effective performance appraisal is to asses and measure the quality and productivity of the employees work and give them evaluation score sheet of their work performance to perform well and encourage them about their achievements. Now a day's various organization use different mixture of performance appraisal assessments techniques and methods via employees response, organizational recognition and employee satisfaction from practical deliberation, cognitive facets, psychometric determinants (Murphy & Cleveland, 1991; Tziner & Murphy, 2001). Cardy and Dobbins (1994) propose that its necessary for the organization to use effective and technical performance appraisal that should support the employees acceptance

otherwise abandon, oppose and strike appraisal downsized the performance and productivity of the employees and organization. Additionally, Johnson and Holladay (2009) state that it is imperative to take employees idea, thought, and perception about his/her performance appraisal which lead to the fairness of performance evaluation because organization gain effective outcome results of employees assessment. In banking sector, performance appraisal is an opportunity for the individual to direct approach to line manager for their supports and quires performance appraisal is not a top down procedure, everyone should be free to share and exchange their view (Bhatia , 2010).

### **3. Methodology**

#### ***3.1 Research Approach, Paradigm and Design***

The determination of suitable research method and worldview is reliant on the setting of research and the survey questions (Hair, 2010). According to the quantitative type of survey, the interpretivist model is dispensed and the inductive methodological position is endorsed, in order to consider the role of effective HR practices for enhancing the organizational performance among employees of banking organization. That is considered to be a proper strategy for picking up inside and out bits of knowledge in explicit settings and contexts (Creswell, 2003; Muqadas et al., 2016). Semi-structure interview instrument is used for taking reliable and comparable qualitative data. Open ended questions are asked from the participants in interview in which they provided the detail and related information. The research questions of current study are constructed after analyzing the extensive literature (Boswell, 2006; Budhwar & Debrah, 2013; Guest, 2011; Huselid, 1995; Kraaijenbrink, Spender, & Groen, 2010; Paauwe, 2009; Muqadas et al., 2017b). The questions were developed under the direction of therapeutic experts that were not think about members and appropriately adjusted from the professional opinion according to the proposals of Turner (2010). Moreover, this methodology decreased that issues of self-created legitimacy related with the utilization of organized shut finished polls to examine wonders that is novel to a respondent (Jarvenpaa & Todd, 1996).

#### ***3.2 Population and Sample***

The study is focused on banking organization due to the high need of new HR practices to deal with diversified workforce, volatile competition, work engagement, organizational performance, turnover of employees, and career development opportunities. At present, the banking sector is focusing on bringing upgraded technology and professional who can deal with these technologies for enhancing the performance. Approximately fourteen commercial banks that have approximately 3323 branches operating in Pakistan. From December 1973, 74 branches of commercial banks of Pakistan are operating in overseas countries. Our population area is a banking organization such as MCB. MCB having large number of network over 1116 branches is arrogantly operating all over Pakistan. However, we focused on Lahore region to collect data from the branches of MCB.

As the survey was exploratory in nature purposive inspecting technique was chosen to choose twenty HRM experts of MCBs because of imperatives of time, cost and accessibility that is a worthy strategy under subjective examination (Creswell, 2013; Muqadas et al., 2017a). The members were chosen according to the strict criteria (1) they should be HR directors (2) have at any rate ten years' involvement with HR offices. It was set up that a sample of fifteen participants (cases) was suitable to get satisfactory important outcomes in quantitative study in accordance with comparable past research led in similar settings (Auffermann, 2010; Stankovic-Rice, 2011). The assessments of members were acquired with respect to the green HR rehearses in banking sector and its suggestions to improve the performance of organization.

### 3.3 Data Analysis and Strategy

In the present analysis, every HR expert is considered as a unit of investigation and viewed as a case. The reactions of the respondents were recorded on sound gadgets and spared as a repository that was utilized for creating transcriptions. In accordance with the steps and methods of qualitative analysis as proposed by Braun and Clarke (2006) consistent analogous thematic analysis was utilized. Above all else the dialogues were transcribed, in the second step the coding plan was created to catch the pertinent content with respect to utilization of web media applications, the way wherein it is embraced for individual and expert use and the manner in which it is helpful. In light of the codes significant topics were created and they were re-checked to guarantee coherency and named later bringing about a thematic structure of related thoughts. Themes that are characterized have been labeled as "HR practices and policies," "Culture", Competency Level", and "HR practices and Strategy". These themes are viewed as necessary in formatting the understanding of all participants by doing clear and concise data coding.

## 4. Results

### 4.1 Demographic Features

Table 1  
*Demographic Profile of Respondents*

Sr. No.	Age	Material Status	Muslim Commercial Bank	Education	Experience Years	Designation
1	42	Married	Sagiya Pull Lahore	MBA marketing	16	Branch Manager (BM)
2	44	Married	Iqbal town Lahore	MBA finance	14	HR Manager
3	47	Unmarried	BarkiDiyara Lahore	MBA Marketing	13	HR Manager
4	46	Unmarried	YateemKhana Lahore	MBA Marketing	11	BM
5	43	Married	Johar town Lahore	MBA finance	10	HR Manager
6	49	Married	Dorogwala Lahore	MBA finance	11	HR Manager

(Table Continued...)



7	40	Married	Dharampura Lahore	B.A Economics	14	BM
8	41	Married	Yad Gar Lahore	MBA in Banking and Finance	10	HR Manager
9	48	Single	Jody Pull Lahore	MBA in Marketing	13	BM
10	45	Married	Gulberg II	Graduation	15	BM
11	40	Married	ThokarNaiazBaig Lahore	MBA in HRM	14	HR Manager
12	48	Single	ThokarNaiazBaig Lahore	Master in HRM	13	HR Manager
13	42	Married	Shiekupura	Graduation	11	HR Manager
14	44	Single	Lahore	MBA marketing	12	HR Manager
15	43	Single	Lahore	MBA finance	10	HR Manager

The above table provides the information regarding the demographic background of the respondents for this study. There are some prominent features of the respondents of this study such as most of respondents having the degree of MBA and serving as a HR manager in different main branches of MCB.

#### 4.2 Data Analysis and Coding

Table 2  
*Overview of Research Findings*

Research Question	Themes	Category	Sub-category	Theoretical lens	Substantial Contribution
What are the critical management issues and how HR strategy can improve the work place environment?	Concept of HR Strategy	Work disengagement Work place environment Cash shortage Line manager bridge b/w employee and HR Employee absenteeism Fast and advance computer application	-		
How does culture (organizational and Islamic perspective) influences the HR practices and organizational performance?	HR practices and Culture Interaction	Islamic Culture and HR interaction  HR and Culture Interaction	-  Sports activities and entertainment	Contemporary and behavior configuration theory	Theoretical lens of contemporary and configuration theory helps to fill the gaps in the literature in the context of developing countries, especially Pakistan. Unique interplay of HR practices context in MCB banking performance of Pakistan.

(Table Continued...)

How do HR professionals/ expertise and employees define HR practices?	Competency Level of HR Professional	Monitoring and Motivation Leadership Skills Employee career development Knowledge, skills, abilities Conflict management	-
How can HR practices and policies contribute to the understanding of organizational performance?	Implementation of HR policies and practices	Political effects Performance Appraisal Economic effects Social security effects Recruitment and Selection Training & development	-

The above table provides the suggestions and recommendations of HR professionals regarding numerous HR practices and its implications to enhance the performance of employees. Findings reveal the suggestions regarding critical management issue such as work disengagement, work place environment, and influence of culture, impacts of HR practices and policies on organizational performance of MCBs.

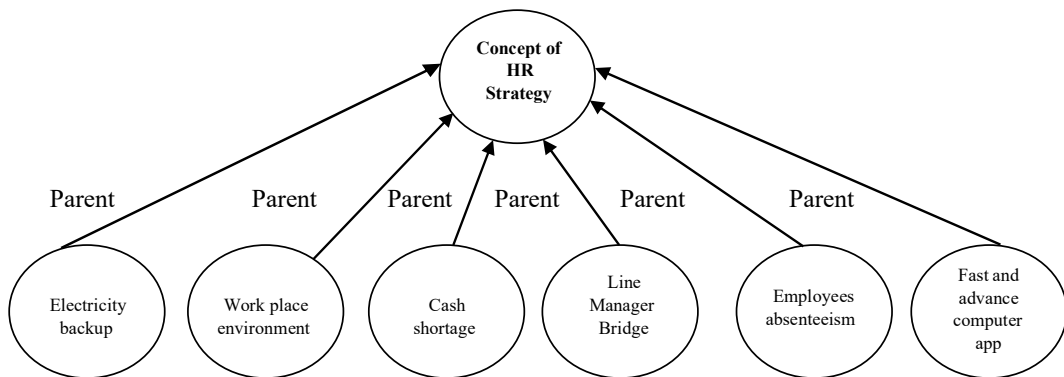
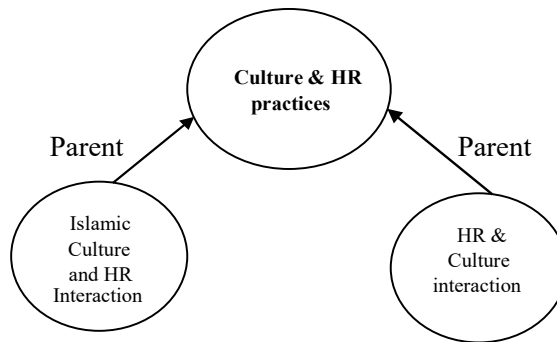


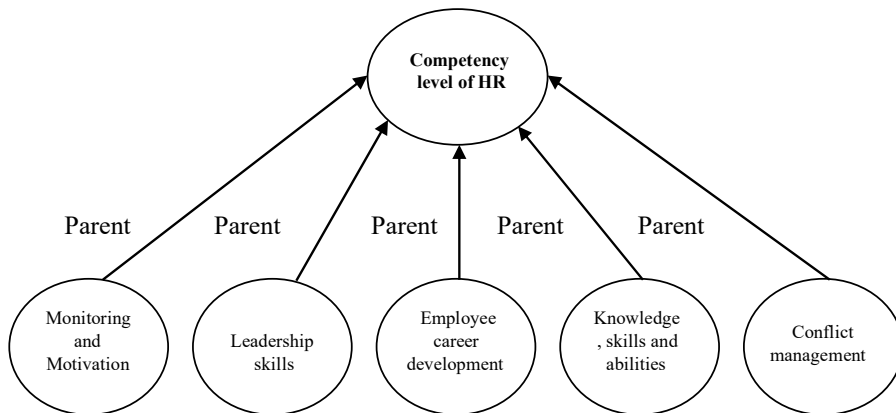
Figure 1: Concept of HR Strategy

The above figure shows that concept of HR operations is focused on electricity backup, work place environment, cash shortage, line manager bridge between employee and HR professionals, employee absenteeism, fast and advance computer application system.



*Figure 2: HR practices and Culture Interaction*

The above figure is depicting that culture and HR practices are covered by two dimensions: Islamic culture & HR interaction and HR & culture interaction.



*Figure 3: Competency Level of HR Professional*

The above figure highlights that the competency level of human resource covered using five dimensions: monitoring and motivation, leadership skills, employee career development, knowledge, skills and abilities and conflict management.

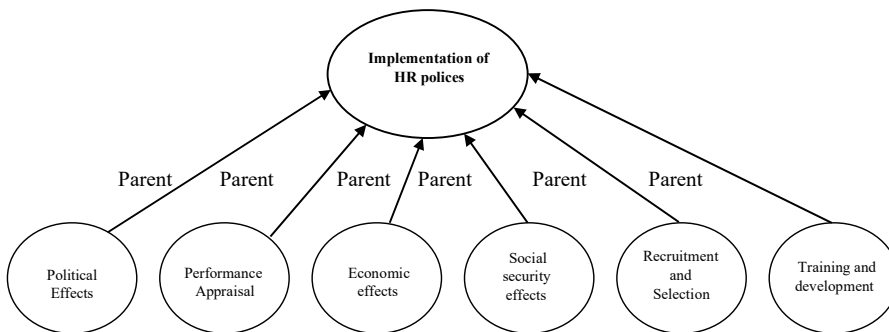


Figure 4: Implementation of HR policies and practices

The above figure represents that implementation of HR policies covered using six dimensions such as political effects, performance appraisal, economical effects, social security effects, recruitment and selection, training and development.

## 5. Conclusion

The participants were asked about the concept of HR practices and strategy (management) issues in their branches. In modern era, the banks are moved towards online banking that reduces the working load of the employee as well as the accuracy of work has been raised. HR professional should ensure the resources for each employee so that their individual performance can bring about an increase in organizational performance. The flow of work is only stable if a branch focused on electricity backup, excessive cash at branch, and fast online bank application software. These issues can impact negatively on customer, employee performance, or organizational performance. HR professional and line managers should abolish these bottle necks for better work place environment. Due to the slow system the customer rush may be increased which can increase the pressure of work and chances of mistakes. HR manager should ensure the customer and employee suggestions regarding how their issues can be addressed at first priority. Manager is the representative of the branch performance, so employees are heavily dependent upon the manager behavior and action while submitting and meeting the deadline of projects and assignment required by the HR expertise.

The participants were asked about the culture of the bank (i.e. values, beliefs, and norms as per Islamic settings) and HR functions. Different activities conducted by the HR professional like events like parties, seminars, webinars, trainings, and cricket matches between banks in which employees freely participate. MCB adopted Islamic banking which can influence the bank performance because some customers are focused to save and invest money according to Islamic principles. The HR carry out different activities and campaign in which not only employees but the customers also participate like family campaign in which customer family member participate and employee telling

them about extra benefit and policies like car loan, account benefits, insurance policy. In Islamic branches, Islamic values are also somewhat followed like dress code for men, women employee can wear abbaya. Human resource practices of different activities represent good organizational culture through this employee can indulge more in their task and strongly attached with other employees that can increase the trust worthiness. Equally distribution of incentives, Eid bonuses has raised the Islamic culture in organization. As Islamic values lead to trustworthiness, honesty, intention, justice so the HR professional carry out these practices in the light of incentives, bonus, remuneration. HR managers focused on trust so that employees contribute more and show strong engagement with work at workplace.

Do you feel that managers having specialized skills, competencies, qualification and experience to perform the HR practices in all branches? HR should remove gaps between manager and employees through effective communication. HR manager should try to improve employee skills, knowledge and abilities which can increase their work engagement and performance at workplace. Competency level practicing is the hub of organizational performance through which the performance of both employee and organization will be in track of goal. HR specialist and manager perform these practices in shape of resolving the daily bases' issue by coordination, appreciation, stimulate induce and understanding the feeling and emotion of the coordinators. HR professional conduct recruitment and selection through proper channel like conducting interview, psychometric test etc. The main approach, that our managers adopt of these practices is that in morning on daily bases before the start of the work the entire staff have meeting in which everyone gives his suggestion regarding to resolve the problem, technology problem, maintenance issue etc which lead to employee participation, team work coordination among the employees. The HR trained makes job rotation of the employees according to their experiences and competency level. In the branch the main approach of competency level that the HR trained and managers have to adopt is the internal and external locus of control, taking employees in confidence position that he/she admit and appreciated of both the decision of internal and external locus of control. Executive should have a proactive approach that they see the solution instead of the problem.

The participants were asked about factors affecting the designing of HR policies, practices (Social, political, economic, and technological), approaches of performance appraisal, training and development on organizational performance. MCB moved towards online banking system which leads to accuracy of work, reduced the employee work load, time save etc. Customer stop their payment of depositing the car leasing monthly because of increase of Government tax than HR pressurize the employee for their recovery it's ultimately effect the performance appraisal result of the employees. Business man stops their import and export due to political disturbance. HR experts should construct policies that each customer have their account online ID. In which they can see their account detail, transaction and bank statement. Government tax influence the banking sector personal loan credit, ready cash, mark up rate all these indicator increases.

Social, political, economic factor disturb the work flow, stock exchange due to his manager have to remake the polices standard and work distribution to the employees, as Pakistan economy inflation is not stable variation in stock exchange are on weekly bases. In rural areas people take loan from the bank to start small business as the Government tax increases people not deposit delaying or stop their monthly payment so HR pressurize the employee for their recovery. Due to the political disability absenteeism of employees arise e.g. political Jalsa in Lahore become some in which time branch will be closed be this cause. The HR professional should give the training according to their job task like customer representative officer deal the front foot customer gives patience, tolerance, happy mood, and training. Most of the time customers are disturbed because of tax on car loan and currency inflation e.g dollar rate increases so in this condition retaining the customer is very crucial for the employees. Training of this software will give to individual employee to see his/her performance, role, and score contribution of work.

The research explored and discussed the HR practices and its impact on organizational performance of a developing country. The study indicates that how effective HR practices can generate effective performance in a banking organization. Findings demonstrate that HR practices must meet bank business, cooperate, employees, customers', economic, social, legislative and technological needs of a banking organization. It is also found that positive organizational culture promotes trustworthiness, effective communication, idea sharing, work engagement, equal career opportunities and these are also positive predictors to enhance the organizational performance. A balance in HR practices (i.e. fair recruitment and selection, equal chances of training and development, fair performance appraisal, obey of labor law, equal opportunities to take compensation and benefit) leads to develop a positive organizational culture which can enhance the employees as well as organizational performance. The HR team can analyze the competency level of the employees and provide a positive mentoring to prepare the employees for training and development. The findings of the current study are equally helpful for the employees of other banks as well as service sector of a developing country where organizational culture somewhat resembled.

### ***5.1 Recommendations and Implications***

Based on the findings of current study, we gave few recommendations and implications to improve the HR practices:

- Individual employees must have direct access to HR professional for face to face meeting, proposals, and suggestions for enhancing the employees and organizational performance.
- Bank should support their competent employee to participate in different constructive activities such as workshops, international conferences, bank seminars and sports activities.
- HR managers ensure to foster standard techniques for employee's job assessment, performance appraisal system. Their tasks and responsibilities should be redesigned and

updated on the basis of the courses, trainings, skills, and competency level.

- Bank managers should ensure the resources timely available at workplace so routine tasks should not be disturbed like deficiency of cash and obstacles of online banking.
- Bank should provide training to their employees according to their job relevant tasks and gives them direction towards career advancement path.
- HR Manager should try to provide working environment where skilled worker should transfer their competencies/skills and also gives them appreciation and recognition and involves in decision making process.

## References

- Agarwal, B. (1983). Diffusion of rural innovations: some analytical issues and the case of wood-burning stoves. *World Development*, 11(4), 359-376.
- Aslam, U., Muqadas, F., Imran, M. K., & Rahman, U. U. (2018a). Investigating the antecedents of work disengagement in the workplace. *Journal of Management Development*, 37(2), 149-164.
- Aslam, U., Muqadas, F., & Imran, M. K. (2018b). Exploring the sources and role of knowledge sharing to overcome the challenges of organizational change implementation. *International Journal of Organizational Analysis*, 26(3), 567-581.
- Auffermann, Kyra (2010). Achieving success with social media, *Public Relations Tactics*, 17(7),14-31.
- Bandyopadhyay, R., Sampat, P. S., Vaghul, N., & Varde, S. D. (1977). Post-entry education system for banks. *Prajnan*, 6(4), 403-454.
- Becker, B. E., Huselid, M. A., Huselid, M. A., & Ulrich, D. (2001). The HR scorecard: Linking people, strategy, and performance. Harvard Business Press.
- Bhatia Ekta (2010). Performance Appraisal in banking sector. Retrieved from [www.scribd.com](http://www.scribd.com)
- Boswell, W. (2006). Aligning employees with the organization's strategic objectives: Out of 'line of sight', out of mind. *The International Journal of Human Resource Management*, 17(9), 1489-1511.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Briscoe, D. R., & Schuler, R. S. (2004). International human resource management: Policy and

practice for the global enterprise (Vol. 5). Psychology Press.

- Budhwar, P. S., & Debrah, Y. A. (Eds.). (2013). Human resource management in developing countries. Routledge.
- Cardy, R. L., & Dobbins, G. H. (1994). Performance appraisal: The influence of liking on cognition. *Advances in Managerial Cognition and Organizational Information Processing*, 5 (1), 115-140.
- Carnevale, D.G. and Wechsler, B. (1992) 'Trust in the Public Sector: Individual and Organizational Determinants', *Administration & Society*, 23(4), 471-94
- Chen, L., Zheng, W., Yang, B., & Bai, S. (2016). Transformational leadership, social capital and organizational innovation. *Leadership & Organization Development Journal*, 37(7),843-899.
- Creswell, J. W. (2003). A framework for design. Research design: Qualitative, quantitative, and mixed methods approaches, 9-11.
- Creswell, J. W. (2013). Steps in conducting a scholarly mixed methods study. DBER Speaker series. University of Nebraska Discipline-Based Education Research Group (Online). Retrieved from: [http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1047 & context=dberspeakers](http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1047&context=dberspeakers)).
- Deal, T. E., & Kennedy, A. A. (1982). Corporate cultures: The rites and rituals of organizational life. *Reading/T. Deal, A. Kennedy. -Mass: Addison-Wesley*, 2(1), 98-103.
- El-Ashker, A. A. (1987). The Islamic Business Enterprise, London: Croom Helm.
- Gibb, J. (1964). Climate for Trust Formation. In Bradford, L., Gibb, J. and Benne, K. (eds) T-group Therapy and Laboratory Method, New York: Wiley.
- Glaveli, N., & Kufidu, S. (2005). The old, the young and the restless. *European Business Review*, 17 (5), 441-459.
- Gordon, G.G., & Di Tomaso, N. (1992). Predicting Corporate Performance from Organizational Culture. *Journal of Management Studies*, 29 (1), 83-798
- Guest, D. E. (2011). Human resource management and performance: still searching for some answers. *Human Resource Management Journal*, 21(1), 3-13.
- Guthrie, J. (2001). The management, measurement and the reporting of intellectual capital. *Journal of Intellectual Capital*, 2(1), 27-41.



- Hair, J. F., Celsi, M., Ortinau, D. J., & Bush, R. P. (2010). Essentials of marketing research (Vol. 2). New York, NY: McGraw-Hill/Irwin.
- Hofstede, G., Neuijen, B., Ohayv, D. D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative Science Quarterly*, 35(1), 286-316.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), 635-672.
- Jarvenpaa, S. L., & Todd, P. A. (1996). Consumer reactions to electronic shopping on the World Wide Web. *International Journal of Electronic Commerce*, 1(2), 59-88.
- Johnson, S. K., Holladay, C. L., & Quinones, M. A. (2009). Organizational citizenship behavior in performance evaluations: distributive justice or injustice?. *Journal of Business and Psychology*, 24(4), 409-422.
- Kanter, D. L., & Mirvis, P. H. (1989). The cynical Americans: Living and working in an age of discontent and disillusion. Jossey-Bass.
- Kehoe, R. R., & Wright, P. M. (2013). The impact of high-performance human resource practices on employees' attitudes and behaviors. *Journal of Management*, 39(2), 366-391.
- Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The resource-based view: a review and assessment of its critiques. *Journal of Management*, 36(1), 349-372.
- Kumari, A., & Sita, V. (2010). Role of Competencies in Human Resource Management: A study in Indian Organizations. *OIDA International Journal of Sustainable Development*, 2(3), 29-34.
- Lee, F. H., & Lee, F. Z. (2007, November). The relationships between HRM practices, Leadership style, competitive strategy and business performance in Taiwanese steel industry. In *Proceedings of the 13th Asia Pacific Management Conference, Melbourne, Australia* (953-971).
- Mathis, R. L., & Jackson, J. H. (2004). Human Resource Management, Singapore. Thomson Asia Pte. Ltd.
- MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48(2), 197-221.
- Murphy, K. R., & Cleveland, J. N. (1991). Performance appraisal: An organizational perspective. Allyn & Bacon.

- Muqadas, F., Rehman, M., Aslam, U., & Ur-Rahman, U. (2017a). Exploring the challenges, trends and issues for knowledge sharing: A study on employees in public sector universities. *VINE Journal of Information and Knowledge Management Systems*, 47(1), 2-15.
- Muqadas, F., Rehman, C. A., & Aslam, U. (2017b). Organizational justice and employee's job dissatisfaction: a moderating role of psychological empowerment. *Pakistan Business Review*, 18(4), 848-864.
- Muqadas, F., Ilyas, M., & Aslam, U. (2016). Antecedents of knowledge sharing and its impact on employees' creativity and work performance. *Pakistan Business Review*, 18(3), 655-674.
- Paauwe, J. (2009). HRM and performance: Achievements, methodological issues and prospects. *Journal of Management Studies*, 46(1), 129-142.
- Pinnington, A. (2011). Strategic management and IHRM. International Human Resource Management. Sage Publications.
- Rasool, H. F., Arfeen, I. U., Mothi, W., & Aslam, U. (2015). Leadership styles and its impact on employee's performance in health sector of Pakistan. *City University Research Journal*, 5(1), 97-109.
- Schein, E. H. (1990). Organizational culture. *American Psychologist*, 45 (2), 19-39.
- Schuler, R. S., Jackson, S. E., & Tarique, I. (2011). Global talent management and global talent challenges: Strategic opportunities for IHRM. *Journal of World Business*, 46(4), 506-516.
- Sheppeck, M. A., & Militello, J. (2000). Strategic HR configurations and organizational performance. *Human Resource Management*, 39(1), 5-16.
- Sparrow, P. (2010). Handbook of international human resource management: Integrating people, process, and context (Vol. 9). John Wiley & Sons.
- Stankovic-Rice, B. L. (2011). Social media strategies to advance organizational change. Pepperdine University.
- Turner III, D. W. (2010). Qualitative interview design: A practical guide for novice investigators. *The Qualitative Report*, 15(3), 754-778.
- Tziner, A., Murphy, K. R., Cleveland, J. N., & Roberts-Thompson, G. P. (2001). Relationships between attitudes toward organizations and performance appraisal systems and rating behavior. *International Journal of Selection and Assessment*, 9(3), 226-239.
- Warner, S., Newland, B. L., & Green, B. C. (2011). More than motivation: Reconsidering volunteer

management tools. *Journal of Sport Management*, 25(5), 391-407.

Yeung, I. Y., & Tung, R. L. (1996). Achieving business success in Confucian societies: The importance of guanxi (connections). *Organizational Dynamics*, 25(2), 54-66.

# Unfolding the Issues and Prospects of Women Entrepreneurs: Evidence from the Context of Islamic Country

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## Abstract

*Nowadays, entrepreneurship has gotten increasing importance in a modern competitive economy and its contribution is recognized worldwide. The study unfolded and highlighted the issues and prospects of women entrepreneurs in the context of Islamic country. Women entrepreneurship work-life issues and prospects are important aspects in the context of social structure of Pakistan. The study is important because it tries to attempt what real problems have been faced by women entrepreneurs due to education, religion, societal customs, and cultural differences in Pakistan compared to the Western culture. Moreover, the study conducted to unfold issues in the light of socio-cultural norms and sub cultural differences in Pakistan. Scant research studies have been conducted to investigate the issues of women entrepreneurs using quantitative data collection and analyses methods. The research data have been collected from 153 women entrepreneurs using structured questionnaires and purposive sampling technique. The findings reveal that women entrepreneurs have lack of access to business premises, capital, training/skills, information technology, shame, honor, and veil that impact negatively on women professional career. Finally, the prospects of women entrepreneurs are also discussed in this study.*

**Keywords:** Entrepreneurs, Business premises, Capital, Training / Skills, Information technology.

**JEL Classification:** Z000

## 1. Introduction

Support and encouragement of women can motivate them to participate in the economic development (Roomi & Parrott, 2008; Khalid, Muqadas, & Rehman, 2017). Over the period, in the world, women entrepreneurship is important phenomena due to the issues regarding managing the personal life and professional career (Jennings, Hughes, & Jennings, 2010; Rouse & Kitching, 2006; Shelton, 2006). Nevertheless, other societies such as Pakistan, women have more issues and limited

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prospects as compared to men (Goheer, 2003; Khalid et al., 2017; Roomi & Parrott, 2008). Moreover, influences of family, religious, cultural differences, societal customs have become obstacles in women's career choices in Pakistan (Shah, 2002; Muqadas et al., 2017). Compared to the Western culture and Western studies, women entrepreneurs' challenges vary from country to country. Islamic societies have some limitations such as family culture, religious restrictions, societal customs, limited freedom, and cultural differences (Tambunan, 2009; Mian, Karadeniz, & Sarfaraz, 2014; Muqadas et al., 2017; Rehman et al., 2016; Khalid et al., 2017).

Pakistan has a population of 193.02 million as a country, ranked 9th with respect to labor force however still only 28% women are contributing in economic activities (Worldbank, 2012). In this panic situation, the government of Pakistan is taking steps to encourage women participation, i.e. SMEDA, women chamber of commerce, as well small and medium enterprise limited. According to Worldbank (2012), because of the initiatives by the government of Pakistan, women are highly encouraging and their participation in economic activities here also increased. However, there are still problems for women to start their career due to political, religious, rapid societal and family changes in Pakistan. There is still limited knowledge available regarding contextual reasons (Muqadas et al., 2017; García & Welter, 2013; Jayawarna, Rouse, & Kitching, 2013), women's career choice (Krueger & Brazeal, 1994), hurdles in women's career to become entrepreneurs (Ahl, 2006; Thornton et al., 2011). In developing nations like Pakistan, women have multifaceted difficulties such as social insecurity, low level of education, limited social benefits, sexual harassment, family restrictions, religious restrictions, wretched working condition, part time employment or no employment (Amin, 2016; Makhijani et al., 2015; Mian et al., 2014).

There are tons of studies that have been conducted on entrepreneurship and some of them are also focused on women entrepreneurship (Roomi & Parrott, 2008; Sarfaraz, Faghih, & Majd, 2014; Mian et al., 2014). Nevertheless, most of the literature is available in the Western context which is different as compared to the Asian culture in terms of education, opportunities, gender discrimination, freedom, religion, societal customs, and traditions (Amin, 2016; Makhijani et al., 2015; Mian et al., 2014). Furthermore, most of the studies on women entrepreneurship have been used qualitative methods which are biased, and results cannot generalize to larger population. Therefore, the study unfolds the previous gaps and explores more knowledge regarding women entrepreneurs in the context of Islamic country. This study represents an important contribution to entrepreneurial activity knowledge in subjects and areas that current literature has not yet addressed thoroughly. Raising the knowledge on women's entrepreneurs' issues and prospects, in Pakistan in particular, can guide to understand the phenomenon and foster the implementation of support programs that can bring the creation of enterprises by women and develop a favorable environment for entrepreneurial activity.

## 2. Literature Review

In the past, entrepreneurship has become a growing field and also gotten considerable attention of researchers and other scholars in both developed and developing nations (Weeks & Seiler, 2001). Nevertheless, most of the studies are gender specific such as they are mainly focused on men rather than female entrepreneurs (Hisrich & Brush, 1986; Brush & Bird, 2002; Hisrich & Brush, 1984). Most of the researchers focused that it is not fair to assume that there is no different between the men and women entrepreneurs' findings, because women are highly influenced by external and internal factors such as religious, family, education, skills, and political support (Brush & Bird, 2002; Carter & Cannon, 1992; Minniti et al., 2005; Mitchell, 2004; Weeks & Seiler, 2001; Zapalska, 1997).

Besides, most of the knowledge on entrepreneurial activity in general, and especially on women, mainly comes from developed countries, while in Pakistan little is known about women and their enterprises. Also, most of the studies found on the literature that have explored women entrepreneur's possible motivations suggest a wide range of reasons, but such reasons have not yet been integrated as per the culture of Islamic country. There are tons of studies that have been conducted on entrepreneurship and some of them are also focused on women entrepreneurship (Roomi & Parrott, 2008; Sarfaraz, Faghih, & Majd, 2014; Mian et al., 2014). Nevertheless, most of the literature is available in the Western context which is different as compared to Asian culture in terms of education, opportunities, gender discrimination, freedom, religion, societal customs, and traditions (Amin, 2016; Makhijani et al., 2015; Mian et al., 2014). Furthermore, most of the studies on women entrepreneurship have been used qualitative methods which are biased, and results cannot generalize to larger population.

Pakistani society have features of patriarchal and various cultural impact i.e. Indian influence, British inheritance and American as well (Khilji, 2003). Therefore, women's work-life choices are suffered because of shame and honor and on the other hand, cultural aspects also favors male superiority and are considered as "breadwinner" (Essers & Benschop, 2009; Jamali, 2009). However, Islam did not make a distinction between female and male and give them equal rights (Sajid et al., 2011).

According to the Quran, "Whoever work righteous, man or woman, and has faith, verily to him will we give a new life that is good and pure, and we will bestow on such their rewards according to their actions" (Qur'an, 16:97 see also 4:124).

According to the Quran, "Men and women are created from a single soul. One person does not come before the other, one is not superior to the other, and one is not the derivative of the other. A woman is not created for the purpose of a man. Rather, they are both created for mutual benefit of each other" (Qur'an, 30:21).

There is extensive literature on women entrepreneurs regarding work-life choices, however, most of the studies have been conducted in the Western that is different from Asia with respect to culture, knowledge, education, family, decision making, social etc (Brush, Greene, & Hart, 2001; Eddleston & Powell, 2012; Marlow & Patton, 2005). However, Until now, there is still limited knowledge available regarding contextual reasons (García & Welter, 2013; Jayawarna et al., 2013), women's career choice (Krueger & Brazeal, 1994), hurdles in women's career to become entrepreneurs especially in the context of developing country (Ahl, 2006; Thornton, Ribeiro-Soriano, & Urbano, 2011). This study has aimed to explore how women in Pakistan experience problems regarding work-life in the light of life course theory and socio-cultural settings.

### **3. Methodology**

The paradigm and research method is usually depending on proposed research questions and objectives (Rasool et al., 2015; Muqadas et al., 2017). Given the quantitative nature of inquiry, the positivism paradigm is deployed and the deductive methodological stance is followed in order to investigate the issues and prospects of women entrepreneurs in the context of Islamic country. Eriksson and Kovalainen (2008) have highlighted that positivism followers are focused on objective reality and try to explore their perceptions on the bases of specific realities by using deductive approach. Explanatory study is known to be an appropriate method for gaining in-depth insights in specific contexts and settings (Creswell, 2003). The present study followed the guidelines of positivism which usually derive the hypotheses based on deductive reasoning approach. It also assumes that there is already extensive literature available which can be contradictory. The study intends to investigate cause and effect connection using explanatory research design and questionnaire method.

Structured questionnaire is used to get reliable and comparable data. Brief questions are asked from the participants and they provided the detail and related information. The research questions of the current study are constructed after analyzing the extensive literature (Brush Greene, & Hart, 2001; Eddleston & Powell, 2012; Marlow & Patton, 2005; Aslam, Muqadas, & Imran, 2018a; Aslam et al., 2018b; Jayawarna, Rouse, & Kitching, 2013). The questions were modified under the guidance of academic professionals that were not study participants and duly calibrated from the expert opinion as per the suggestions of Turner (2010).

#### **3.1 Population and Sample**

Zikmund (2003) defined sampling as "The process of using a small number of items or parts of a larger population to make conclusions about the whole population". To select sample size, researchers have given minimum standards to conduct quantities sample within 100 to 150 sample (Bryman, 2012; Creswell, 2013). Data for this study were collected from women entrepreneurs of the Punjab, Pakistan. The study is explanatory in nature so purposive sampling method is adopted to select 200 entrepreneurs' due to find reasonable answers of research questions, constraints of time,

cost and availability (Aslam, Muqadas, & Imran, 2018a; Creswell, 2013). The participants were selected as per the criteria: they must be entrepreneurs' and have at least two years' experience in this profession. This study has a sample of 200 women from several urban cities i.e. Lahore, Faisalabad, Rawalpindi, Multan. Approximately forty women entrepreneurs were selected from each city. The selected women are ready to share their experiences in the boundaries of socio-cultural norms, work life-choices, family issues, religious and society traditions.

For the purpose of sampling, purposive sampling used on the bases of women entrepreneurs knowledge and their willingness to share their experiences (Aslam et al., 2018b; Bryman, 2012; Huberman & Miles, 1994). Creswell (2013) has argued that the main objective to select purposive sampling is to choose right information cases that are ready to share their experiences.

### **3.2 Measures**

The questionnaire method is very famous especially in quantitative studies. Many famous researchers and well-known studies have used this method. The questionnaire which is used in this study is a rating to describe that what problems and prospects are highly rated. The measuring instrument i.e. questionnaire consisted of two sections. Section A was designed to ask about the demographic information from the respondents. Demographic information included age, gender, marital status, education level, income and professional experience. Section B was designed to measure the issues and prospects of women entrepreneurs. To measure the issues and prospects of women entrepreneurs', we adopted and adapted the already used scale of Roomi and Parrott (2008). The reliability of the scale is measured with the help of cronbach alpha values which are above .70 as per the acceptable standard of Hair, Black, and Babin (2010).

## **4. Results**

The multivariate statistics was used to analyze the data, which was collected through questionnaire. Reliability of the data collected in this research study was measured by using Cronbach's Alpha. Following the Reliability analysis of the data, descriptive statistics (Frequency) was used to gain insight about the data. Furthermore, descriptive statistics is used to find which issue is rated as most superior among 200 entrepreneurs. These issues and prospects are highlighted as per the rating of the respondents with the help of descriptive statistics.



Table 1  
*Demographic Profile of Respondents*

Description	Number	Percentage	Mean
Specialization in university subjects:management, economics, etc.	59	38.6	
Education level: Bachelor	35	22.9	
Education level: Master	118	77.1	
Previously served on managerial position	56	36.60	
Prior experience in industry	66	43.14	
Prior entrepreneurial experience	23	15	
Married	123	80.39	
Number of children			2
Involvement in the start-up	141	92.16	
Membership in women's association	57	37.25	
Mean Age of women entrepreneur			33
Father and/or husband involvement	109		

Data collected from 153 women, out of 153, 83 women fall within 20 to 30 years, 42 women have age of 30 to 40 years, and 28 women have age of 40 to 50 years. Furthermore, 35 women hold bachelor's degree, while majority of women (118) hold masters level degree. Also, 21 women have 2.5 years' experience; others 132 women have more than three years' experience in entrepreneurial background. 123 women are married, 4 women reported 10 children, 16 women belong to joint family, and 113 women working in services sectors.

Table 2  
*Women Entrepreneurs' Challenges*

Problems / Challenges	First challenge (%)	Second challenge (%)	Third challenge (%)
Access to business premises	21	19	17
Access to Finance	20	21	25
Business management skills	16	11	14
Access to information technology	15	14	15
Shame	13	17	11
Honor	11	8	9
Veil	10	6	8

Most of the women have not fixed asset such as business premises and they are also hesitant to approach banks due to not having any collateral, so it is difficult for them to devise and build up

a profitable business plan. One of the challenge is the set of social values and Islamic education which is not permitting them to interact with male bankers or loan officers. Therefore, most of the women entrepreneurs in Islamic country have to arrange the majority of operational finances from personal savings, family resources and other financial support from friends. Because of the risk of limited earnings in the start-up phase, many women entrepreneurs find it difficult to get capital for commencement of business. Furthermore, they have not enough capital to invest in the latest information technology and some of them also have the issues such as shame, honor, and veil which are the features of Islamic society and includes in the social structure of Islamic society. In table 2, all the issues are highlighted as per the ratings and preferences of women entrepreneurs.

Table 3

*Women Entrepreneurs' Prospects*

Prospects	Ratings for Prospects
Government support	28
Low lease for business premises	22
Low markup loans	19
Seminars and Formal training opportunities	18
Access to information technology	13

In table 3, we have given the extracted results from data collected of women entrepreneurs. There are several prospects which are given as per the preference of women entrepreneurs' such as government support is rated high by 28 percent women. Also, these women are demanding that government or other supporting organizations should provide the low lease business premises so that they cannot face any difficulty to grow our business. It is a challenge by Government and other support agencies to provide the essential funding that can encourage more female entrepreneurs in this business. A structured provision of improved access to business startup capital would help in some way to alleviate the problem.

## 5. Conclusion

There is extensive literature on women entrepreneurs regarding their issues during professional career, however, most of the studies conducted in the Western that is different from Asia with respect to culture, knowledge, education, family, decision making, social etc (Brush, Greene, & Hart, 2001; Eddleston & Powell, 2012; Marlow & Patton, 2005). Nevertheless, most of the studies on women entrepreneurship have been used qualitative methods which are biased and results cannot be generalized to a larger population. This study has been conducted to investigate multiple issues and prospects of women's entrepreneurship (objective knowledge that cannot bias) by using quantitative data collection and analysis methods. Structured questionnaire is useful technique to gain rich experiences from the targeted sample (García & Welter, 2013). The key finding is to

through the lens of life and work theory, this study investigated several issues of women entrepreneurs during commencement of business such as business premises, capital, training/skills, information technology, shame, honor, and veil that impact negatively during startup of this business. This study has provided how dynamics of family impact on women entrepreneurs' life and that family dynamics are different from the Western culture. Moreover, this study suggested the several prospects such as government support, low markup capital, low lease building premises that effect the career of women entrepreneurship. Also, this study found that women are influenced due to their social networks and social relations. The policy maker of government can also take benefits and design useful strategies that can uplift the self-owned business and remove hurdles and encourage women to participate in economic activities.

Over the period, in world, women entrepreneurship is an important phenomenon due to the issues regarding managing the personal life and professional career. The study has been conducted to unfold the issues and prospects of women entrepreneurs in the light of life course theory and in the context of socio-cultural norms and sub cultural differences in Pakistan. The study is important because it tries to attempt what real problems have been faced by women entrepreneurs due to education, religion, societal customs, and cultural differences in Pakistan compared to the Western culture. There are mixed views that have been received that can remove the barriers to become women entrepreneurs. Most of the respondents have faced the issues such as business premises, capital, training/skills, information technology, shame, honor, and veil that impact negatively on women professional career. The study has determined and explored the prospects of success to manage work issues. These prospects are support from government, low lease business premises, low markup rate for access to capital, seminars and formal training programs, and access to latest informational technology, multi-tasking, goal setting, and delegating.

### **5.1 Limitations and Recommendations**

Although the findings and implications of this study are viable for researchers, entrepreneurs', and service sector. However, the study has limitations and recommendations as well. The study has been conducted in only one province of Pakistan so findings cannot be generalized to other provinces of Pakistan. Therefore, it is suggested to gather data from all the provinces of Pakistan so that results can become widely acceptable. Furthermore, the responses are only 153 which is not huge in number, so it is recommend to expand the sample size in future studies. Also, it is suggested to conduct longitudinal studies to overcome the issues of common method variance and self-reported data.

### **References**

- Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory and Practice*, 30(5), 595-621.

- Amin, N. B. (2016). *Women entrepreneurship: A cross country comparative study (Bangladesh, Pakistan and India)* [Unpublished doctoral dissertation]. University of Dhaka.
- Aslam, U., Muqadas, F., & Imran, M. K. (2018a). Exploring the sources and role of knowledge sharing to overcome the challenges of organizational change implementation. *International Journal of Organizational Analysis*, 26(3), 567-581.
- Aslam, U., Muqadas, F., Imran, M. K., & Rahman, U. U. (2018b). Investigating the antecedents of work disengagement in the workplace. *Journal of Management Development*, 37(2), 149-164.
- Bird, B., & Brush, C. (2002). A gendered perspective on organizational creation. *Entrepreneurship Theory and Practice*, 26(3), 41-65.
- Brush, C. G., Greene, P. G., & Hart, M. M. (2001). From initial idea to unique advantage: The entrepreneurial challenge of constructing a resource base. *Academy of Management Perspectives*, 15(1), 64-78.
- Bryman, A. (2012). *Social research methods*: Oxford university press.
- Carter, S., & Cannon, T. (1992). *Women as entrepreneurs: A study of female business owners, their motivations, experiences and strategies for success*. London: Academic Press.
- Creswell, J. W. (2003). *A framework for design. Research design: Qualitative, quantitative, and mixed methods approaches*, Thousand Oaks, Sage, 9-11.
- Creswell, J. W. (2013). Steps in conducting a scholarly mixed methods study. DBER Speaker series. University of Nebraska Discipline-Based Education Research Group (Online) Retrieved from: <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1047&context=dberspeakers>.
- Eddleston, K. A., & Powell, G. N. (2012). Nurturing entrepreneurs' work-family balance: A gendered perspective. *Entrepreneurship Theory and Practice*, 36(3), 513-541.
- Eriksson, P., & Kovalainen, A. (2008). Eriksson, P., & Kovalainen, A. (2015). *Qualitative methods in business research: A practical guide to social research*. London: Sage.
- Essers, C., & Benschop, Y. (2009). Muslim businesswomen doing boundary work: The negotiation of Islam, gender and ethnicity within entrepreneurial contexts. *Human Relations*, 62(3), 403-423.
- García, M.C.D., & Welter, F. (2013). Gender identities and practices: Interpreting women entrepreneurs' narratives. *International Small Business Journal*, 31(4), 384-404.

- Goheer, N. (2003). Women entrepreneurs in Pakistan: how to improve their bargaining power. InFocus Programme on Boosting Employment Through Small Enterprise Development. Geneva: International Labour Office. Retrieved from <http://www.microfinancegateway.org/sites/default/files/mfg-en-paper-women-entrepreneurs-in-pakistan-2003.pdf>
- Hair, J. F., Black, W. C., & Babin, B. J. (2010). RE Anderson Multivariate data analysis: A global perspective. (Vol. 7): Pearson Upper Saddle River. NJ
- Hisrich, R. D., & Brush, C. (1986). Characteristics of the minority entrepreneur. *Journal of Small Business Management*, 24(1), 1-21.
- Hisrich, R., & Brush, C. (1984). The woman entrepreneur: Management skills and business problems. *Journal of Small Business Management*, 22(1), 30-37.
- Huberman, A. M., & Miles, M. B. (1994). Data management and analysis methods. In: Denzin N, Lincoln Y, editors. Handbook of qualitative research. Thousand Oaks: Sage Publications.
- Jamali, D. (2009). Constraints and opportunities facing women entrepreneurs in developing countries: A relational perspective. *Gender in Management: An International Journal*, 24(4), 232-251.
- Jayawarna, D., Rouse, J., & Kitching, J. (2013). Entrepreneur motivations and life course. *International Small Business Journal*, 31(1), 34-56.
- Jennings, J. E., Hughes, K., & Jennings, P. D. (2010). The work–family interface strategies of male and female entrepreneurs: Are there any differences. *Women Entrepreneurs and the Global Environment for Growth*, 163-186.
- Khalid, S., Muqadas, F., & Rehman, S. (2017). Women leadership and Its mentoring role towards career development. *Pakistan Business Review*, 19(3), 649-667.
- Khilji, S. E. (2003). To Adapt or Not to Adapt' Exploring the Role of National Culture in HRM-A Study of Pakistan. *International Journal of Cross Cultural Management*, 3(1), 109-132.
- Krueger Jr, N.F., & Brazeal, D.V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*, 18(3), 91-104.
- Makhijani, H. B., Kumbhar, M. I., Mughal, S., & Talpur, U. (2015). Women Entrepreneurship: Problems Faced by Rural Women Entrepreneurs in Sindh Province of Pakistan. *Journal of Basic and Applied Sciences*, 11(1), 274-277.
- Marlow, S., & Patton, D. (2005). All credit to men? Entrepreneurship, finance, and gender. *Entrepreneurship Theory and Practice*, 29(6), 717-735.

- Mian, S., Karadeniz, E., & Sarfaraz, L. (2014, Oct). Entrepreneurship policy challenges in the Eco Region: gender disparities facing women entrepreneurs in Iran, Pakistan and Turkey. Pakistan and Turkey, *ICSB-GWU*, Washington, DC.
- Minniti, M. (2005). Entrepreneurship and network externalities. *Journal of Economic Behavior & Organization*, 57(1), 1-27.
- Muqadas, F., Rehman, M., Aslam, U., & Ur-Rahman, U. (2017). Exploring the challenges, trends and issues for knowledge sharing: A study on employees in public sector universities. *VINE Journal of Information and Knowledge Management Systems*, 47(1), 2-15.
- Rasool, H. F., Arfeen, I. U., Mothi, W., & Aslam, U. (2015). Leadership styles and its impact on employee's performance in health sector of Pakistan. *City University Research Journal*, 5(1), 97-109.
- Rehman, U. U., Ilyas, M., Aslam, U., & Imran, M. K. (2016). Service quality dimensions and its impact on customer's behavioral intentions. *Pakistan Business Review*, 18(1), 120-139.
- Roomi, M. A., & Parrott, G. (2008). Barriers to development and progression of women entrepreneurs in Pakistan. *The Journal of Entrepreneurship*, 17(1), 59-72.
- Rouse, J., & Kitching, J. (2006). Do enterprise support programmes leave women holding the baby?. *Environment and Planning C: Government and Policy*, 24(1), 5-19.
- Sajid, M. R., Maqsood, S., Maqsood, F., & Afzal, I. (2011). Determinants of labor force participation of married women: a case study of district Gujrat. *Academic Research International*, 1(3), 254-273.
- Sarfaraz, L., Faghih, N., & Majd, A. A. (2014). The relationship between women entrepreneurship and gender equality. *Journal of Global Entrepreneurship Research*, 4(1), 6-21.
- Shah, N. A. (2002). Changing role of women in Pakistan: A study of social and economic activities of women entrepreneurs (Doctoral dissertation), University of Karachi, Karachi, Pakistan.
- Shelton, L. M. (2006). Female entrepreneurs, work-family conflict, and venture performance: New insights into the work-family interface. *Journal of Small Business Management*, 44(2), 285-297.
- Tambunan, T. (2009). Women entrepreneurship in Asian developing countries: Their development and main constraints. *Journal of Development and Agricultural Economics*, 1(2), 27-40.
- Thornton, P. H., Ribeiro-Soriano, D., & Urbano, D. (2011). Socio-cultural factors and entrepreneurial activity: An overview. *International Small Business Journal*, 29(2), 105-118.

- Turner, J. C. (1985). Social categorization and the self-concept: A social cognitive theory of group behaviour. In E. J. Lawler (Ed.). *Advances in group process: Theory and research*, (Vol. 2, pp. 77–122). Greenwich, CT: JAI Press.
- Worldbank (2012). *World Development Report 2012 : Gender Equality and Development*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/4391>
- Weeks, JR, & Seiler, D. (2001). *Women's Entrepreneurship in Latin America*. New York, Main Stop publication.
- Zapalska, A. (1997). A profile of woman entrepreneurs and enterprises in Poland. *Journal of Small Business Management*, 35(4), 76-98.
- Zikmund, V. (2003). Health, well-being, and the quality of life: Some psychosomatic reflections. *Neuroendocrinology Letters*, 24(6), 401-403.

# CPMS and Overall Performance of Manufacturing Firms: A Mediating Role of Market-Focused Learning and Entrepreneurial Orientation

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## Abstract

*The study has aimed to investigate the role of comprehensive performance measurement system (CPMS) on overall performance with the mediation of market-focused learning and entrepreneurial orientation in the manufacturing sector of Pakistan. The study focused on survey research strategy and deductive approach while collected 172 sample responses of marketing and human resource professionals using purposive sampling technique. The study has employed partial least square structural equation modeling (PLS-SEM) for data analysis using SmartPLS version 3.2.8. The results have shown that CPMS has significant impact on overall performance directly and with the parallel mediation of market-focused learning and entrepreneurial orientation. In addition, market-focused learning and entrepreneurial orientation have been found statistically significant and positively related to overall performance. Thereby, the study concluded that CPMS has critical importance in the manufacturing firms to improve their overall performance and gain competitiveness. For their sustainability, various practical implications and imperatives have been suggested to the manufacturing firms of Pakistan.*

**Keywords:** Comprehensive performance measurement system, Market-Focused learning, Entrepreneurial orientation, Manufacturing firms.

**JEL Classification:** Z000

## 1. Introduction

Substantial resources are devoted for measuring performance as directed by requirements for the assessment of competitive business environment and the market (Taheri et al., 2019a). A Firm's performance is influenced by enriching and evaluating organizational learning, risk indicators, innovation, and constructing performance measurement systems (Cordina et al., 2017). The relationship between entrepreneurial orientation, market-focused learning, performance measurement, and organizational performance is not acknowledged significantly whereas the significance of

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knowledge-use and performance measurement is studied in developed markets (Martinez et al., 2018). The process through which information is assessed, investigated, and collected is represented as performance measurement (Oktavio, Kaihatu, & Kartika, 2019). The prime objective of performance measurement is organizational learning in which its pillars lie in organizational learning theory. A well-established performance management system can encourage entrepreneurial orientation, accelerate firm performance, and enhance learning outcomes in which employees are engaged on the conversations and communications associated with firm performance (Na et al., 2019). Firms became more responsive throughout turbulent markets through market-focused learning and entrepreneurial orientation in order to respond effectively to customer requirements whereas to acquire cost reductions (Liang & Frösén, 2019). In contrast, a more nuanced approach has been demanded by the frequently intangible services (Hussain et al., 2018). Information about cause-and-effect associations are yielded and reflected by providing a specific extent to construct an entire performance measurement as well as illustrating a comprehensive portrayal into firm performance (Hernández-Linares, Kellermanns, & Fernández, 2018; Homaid, Minai, & Ansi, 2018).

There is no single measure that can evaluate the performance of an organization to be good or average or below average (Liang et al., 2018). The reason for it is that there are so many different outlooks by so many researchers concerning the actions of the firm and if the outcomes of those actions were found to be attractive. Also it is due to the fact that the purposes and theories of the studies are characterizing the performance. Moreover, many researches are found to be astonishing as they could not differentiate between the indicators of performance from the performance measures, as noted by Cameron (1986). What is more concerning in many studies by many researchers is that the overall performance of the organization was evaluated with the help of variables that, in time, were not found to be as strongly correlated as they were thought to be (Carton, 2004).

There are many studies measuring the impact of performance measurement systems, entrepreneurial orientation and market-focused learning on firm performance (Mamun et al., 2018), however, the results are varying with some showing strong and positive relation to some showing no relationship among the variables (Hussain et al., 2018). Slevin and Terjesen (2011) proposes that researches should be carried out by connecting studies through different cultural comparisons. Moreover, this study used case approach, proposes that larger sample sizes should be adopted for future researches (Piirala, 2012). Furthermore, these variables are found to have effects on the overall performance of the organization, there is still very little amount of studies that were carried out in the developing countries (Taheri et al., 2019a). What is more surprising, that even though there are many studies related to trainings and performance measurement systems in the developed countries (Na et al., 2019), there is still a rarity of studies that can be found to be related to these variables in the developing world (Nassazi, 2013).

This study is significant for manufacturing firms as they are not immune to the requirement for entrepreneurial innovation where the need to provide distinctive services and products supersede

traditional destination-focused characteristics for flourishing in the market. Therefore, the study significantly reacts to examine performance measurement in manufacturing firms in order to consider factors that contribute to the performance of firms. Performance measurement usually focuses on financial performance with fixed criterion on the profitability of firms.

## 2. Literature Review

Customer satisfaction, current anticipated profitability, and market effectiveness are comprised within the overall firm performance (Liang & Frösén, 2020). The anticipated profitability is the most apparent one, which is associated with the estimated financial performance of the firm. Over a set period of time, this involves the entire profitability of the business unit, the performance of the firm achieved through predetermined financial objectives, and the return on investment accomplished by shareholders (Mathew & Javalgi, 2018). Within the market, market effectiveness is associated with the organization's place; however, it potentially makes impact on the organizational financial performance (Homaid, Minai, & Ansi, 2018). The growth of organization comparative to competitors is considered in this dimension of entire firm performance, whether the degree to which sales increase to existing customers, and the degree and extent of customer acquisition increase due to the existing customers. Therefore, customer satisfaction is centrally focused on the overall firm performance. In this regard, there is a significant insight on sustained positive customer feedback, actualization of a defined value proposition, and customer retention.

An information system perspective defines the concept of performance management system. Performance management system provides information to managers through formal system design (Al Mamun et al., 2018). Several important features of performance management system have been identified by previous studies (Liang & Frösén, 2020; Oktavio, Kaihatu, & Kartika, 2019). For instance, previous studies have focused on the coverage of performance measures associated to different parts of the organization, association with value consequences, and the integration of measures with strategy in the context of a diverse and comprehensive set of performance measures (Ahmed et al., 2018; Ratnawati et al., 2018). The comprehensive association ascertained between organization's strategy and performance measures is identified from a unique attribute of strategic performance management system (Joensuu-Salo et al., 2018). The performance management system is particularly described as a system that possess distinctive aspects, which include the offerings of metrics, targets, action plans, goals sequence for each perspective; the integration of lasting operational and strategy goals; and the offerings of performance measures in the context of assorted perspectives (Martinez et al., 2018).

*H1: Comprehensive performance management system has significant effect on market-focused learning.*

*H2: Comprehensive performance management system has significant effect on entrepreneurial orientation.*

*H3: Comprehensive performance management system has significant effect on overall performance.*

According to Hernández-Linares et al. (2018), the question is whether how organizations learn as well as how they modify what they have learned through their own competencies into a competitive advantage in the organizational behavior literature. It has been revealed that there are similarities between market orientation and learning orientation. On the other hand, researchers have not concluded which variables become the cause and effect to other variables. In contrast, Hussain et al. (2018) has stated that learning orientation and market orientation fundamentally deliver similar values and norms as their foundations. Thereby, they should be investigated comprehensively (Arunachalam et al., 2018). In addition, organizations should develop learning orientation and market-oriented perspective as an individual learning process and; therefore, should be considered in the process of interpretation, use of information, and creation (Liang et al., 2018). At the same time, organizations should identify the necessities to continue to learn as well as the need to learn from the market along with individuals. The performance of companies is enhanced effectively through learning orientation and market orientation (Iyer et al., 2019).

*H4: Market-focused learning has significant effect on overall performance.*

One of the leading pioneers to discuss philosophy; Porter (1990) has conceptualized entrepreneurial orientation in the context of business administration and; therefore, asserted that there are two fundamental functions, which include innovation and market orientation. Entrepreneurial orientation is tended to the market orientation and innovation integration in this context (Hussain et al., 2018). Moreover, strategic orientation is associated with two fundamental concepts, which include innovation and market orientation. It has been highlighted that these two concepts should be considered as innovation in consequently revamping the organizational strategies (Martinez et al., 2018). Innovative measures are required under market orientation with consumer expectations and market conditions in this context. Thereby, the innovativeness of market orientation is observed in the context of marketing for meeting the demands of customers in order to reduce as well as to achieve the creation of new goods and services through innovative practices (Mamun et al., 2018).

*H5: Entrepreneurial orientation has significant effect on overall performance.*

In marketing literature, both marketing and innovation are discussed specifically in the context of product innovation. A study conducted by Mathew and Javalgi (2018) has revealed insignificant association between product innovation and marketing innovation approach. On the other hand, a statistically and significant association between both variables has been examined product innovation and market orientation (Rezaei & Ortt, 2018). Previous other studies have reported that entrepreneurial orientation shows a positive and significant influence on firm performance. These studies have shown entrepreneurial orientation as a one-dimensional construct (Abushaiba & Zainuddin, 2012; Cordina et al., 2017). They show that entrepreneurial orientation possesses a similar impact in widely different contexts in different markets, types of firms, and countries on firm performance (Pardi et al., 2014). The impact of entrepreneurial orientation on performance is observed in diverse markets, which include manufacturing industries, hotel market, service organizations, small firms, new or established firms, and manufacturing organizations. A meta-analysis conducted by Imam and Zainul (2014) shows a

moderate and positive impact of entrepreneurial orientation on the performance of firms.

*H6:* Comprehensive performance management system has significant effect on overall performance with the mediating effect of entrepreneurial orientation.

Market focused learning is an important aspect for enhancing firm performance in competitive environments as well as to understand ways, the market, and competitors in order to expand market share (Joensuu-Salo et al., 2018). In this regard, innovativeness is important and is usually considered as the missing association between firm performance and market focused learning (Martinez et al., 2018). Previous literature has suggested that there is a significant and positive association between firm performance and entrepreneurial orientation (Na, Kang, & Jeong, 2019; Oktavio, Kaihatu, & Kartika, 2019). On the other hand, due to variations in the sectors and size of the companies investigated, the degree of this association differs. For instance, the association between entrepreneurial orientation and firm performance is observed strongly among micro-enterprises (Ratnawati et al., 2018). In addition, high-tech firms reveal weaker associations between these two aspects as compared to non-high tech firms. It is conceivable that firms might perform better through comprehensive performance management system as the entire firm performance consists of a number of financial and non-financial characteristics (Taheri et al., 2019a). It has been suggested that firms might benefit less from comprehensive performance management system with a lower market complexity, operating throughout stagnant markets, and with a lower extent of differentiation (Iyer et al., 2018). By using conventional accounting performance measures, performance can be achieved from a customer perspective and an employee perspective in order to maintain market effectiveness.

*H7:* Comprehensive performance management system has significant effect on overall performance with the mediating effect of market-focused learning.

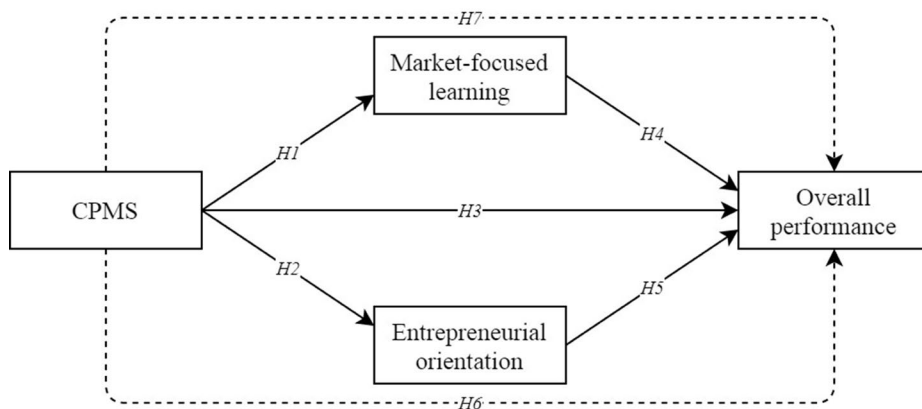


Figure 1: Research Model

### **3. Methodology**

#### **3.1 Study Design**

Positivism is the belief that all of the queries related philosophy has to be following the techniques of natural science. In philosophical positivism, only scientific facts are considered knowledge with authenticity (Compte, 1854). The positivistic approach was used as it is comprehending the using actual knowledge and facts that are essential for this study. In deductive research, hypothesizes are developed out of theories that already exists and testing those hypothesis afterwards. The deductive research tests the patterns with observations while the inductive research deals with observing and finding patterns afterwards (Hughes & Sharrock, 2016). Since this study is testing the hypothesis already developed, it adopts the deductive approach. Moreover, the study adopts the quantitative research approach. The quantitative research deals with numerical data and extracts conclusive findings from that numerical data in order to validate or invalidate a hypothesis. In quantitative research, data is collected through surveys and questionnaires with closed ended questions and the data is quantifiable (Saunders et al., 2009). Since the study is testing the relationship between variables in order to confirm the hypothesis, the quantitative approach is applied. The study also uses the correlational research method. The correlational research is the non-experimental research type where two or more variables are evaluated in order to evaluate the relationship between them (Dörnyei, 2007). Since the dependency and association amongst the variables is measured in this study, the correlational research design is adopted.

#### **3.2 Measures**

A survey questionnaire has been developed in order to collect the data. Five-point Likert scale was used for the study wherein 1 denoted as strongly disagree and 5 denoted as strongly agree. Measures for higher-order construct of CPMS was adapted from Homburg, Artz, and Wieseke (2012); measures for market-focused learning was adapted from O'Cass and Weerawardena (2010); measures for higher-order construct of entrepreneurial orientation was adapted from Martin and Javalgi (2016) and measures for overall performance was adapted from Taheri et al. (2019a).

#### **3.3 Sample and Population**

This study has applied purposive sampling technique and gathered a number of 172 sample responses using N10 formula from marketing and HR professionals of Karachi, Pakistan. The instrument for the survey was given to each respondent personally. However, the study has distributed 230 questionnaires to study population, whereas 196 questionnaires were completed with the response rate of 85.22 percent and remaining 34 questionnaires were not filled accurately or incomplete. Using recommended thresholds by; 17 univariate outliers and 7 multivariate outliers were detected and deleted from the data; henceforth, final data for analysis remained of 172 valid responses.

### ***3.4 Pre-Testing and Reliability***

The pre-testing is essential as it provides an overview of the research. It provides details prior to conducting the full-scale study, in order to enable the research to modify the method or make changes in the instrument or questionnaires (Carmines & Zeller, 1979). The study used Cronbach's alpha to test the number of 50 responses that has been gathered from the target population for pilot study. On the recommended thresholds of 70 percent (Nunnally & Bernstein, 1994), the study has achieved considerable internal consistency of the instrument.

### ***3.5 Common Variance Method (CMV) Assessment***

The data has been analyzed to examine common method variance by using Harman's one-factor test and on the other hand the total variance of 22.16 percent has been extracted. Moreover, the variance found in the data only consists less than 50 percent (Podsakoff & Organ, 1986) and it suggests that there is no strong evidence of the presence of common method variance in the data (Fuller et al., 2016).

### ***3.6 Data Analysis Technique***

The purpose to understand the reason behind using PLS-SEM in behavioral science is important as it is on the basis of various rationales which includes a small quantity of the sample size (Hair et al., 2014), testing the model exploratory, reducing the error terms and also the increase in the predictive relevance of endogenous latent constructs (Astrachan, Patel, & Wanzenried, 2014), it also test the concepts related to theories rather just confirming the theories (Hair et al., 2016) 2016, most important is examining the discriminant validity by using Fornell and Larcker (1981) criterion and also by using the Heterotrait-Monotrait (HTMT) (Henseler, Hubona, & Ray, 2016; Henseler, Ringle, & Sarstedt, 2015). Hence, the current study has also applied PLS-SEM with the inclusion of blindfolding, algorithm and bootstrapping techniques by using the Smart PLS version 3.2.8.

## **4. Results**

### ***4.1 Measurement Model***

It is recommended by (Hair et al., 2016; Hair, Ringle, & Sarstedt, 2011), that the factor loadings should be greater than 0.70 in order to absolutely retain them. The factor loadings with values between 0.40 and 0.70 can also be retained based on the convergent validity. Factor loadings values below 0.40 should be removed.

Table 1  
*Measurement Model Estimates*

Constructs	Indicator	Loading	Alpha	CR	AVE
Anticipated profitability	Profit1	0.657	0.790	0.866	0.619
	Profit2	0.802			
	Profit3	0.811			
	Profit4	0.863			
Cause-and-effect relationships	CER1	0.919	0.712	0.840	0.642
	CER2	0.829			
	CER3	0.627			
	CS1	0.859			
Customer satisfaction	CS2	0.934	0.897	0.927	0.762
	CS3	0.786			
	CS4	0.904			
	DIV1	0.521			
Diversity	DIV2	0.574	0.719	0.800	0.512
	DIV3	0.843			
	DIV4	0.858			
	Inno2	0.899			
Innovativeness	Inno3	0.907	0.773	0.898	0.815
	ME1	0.688			
	ME2	0.676			
Market effectiveness	ME3	0.800	0.683	0.804	0.507
	ME4	0.678			
	MFL2	0.776			
	MFL3	0.727			
Market-Focused Learning	MFL5	0.781	0.795	0.856	0.544
	MFL6	0.735			
	MFL7	0.664			
	Proact1	0.854			
Proactiveness	Proact2	0.911	0.721	0.876	0.780
	Risk1	0.926			
Riskiness	Risk2	0.872	0.888	0.930	0.817
	Risk3	0.912			
	FIT1	0.876			
Strategy-fit	FIT2	0.743	0.649	0.811	0.592
	FIT3	0.675			

As the table above showed, all indicators have factor loadings greater than 0.5, therefore, construct validity is achieved. The composite reliability of all the constructs are above 0.70 recommended threshold, moreover, the AVE values are also achieving the 0.50 recommended thresholds. Therefore, convergent validity has been achieved.

As table 3 showed, based on the Fornell and Larcker (1981) criteria, all the bold values present diagonally are the square-root of their AVE coefficients, have values greater compared to the values of other constructs present horizontally and vertically; therefore, discriminant validity has been achieved using Fornell and Larcker.

As table 4 showed, the latent constructs have HTMT ratio coefficients below the threshold value of 0.90. Therefore, as recommended by (Henseler et al., 2016; Henseler et al., 2015), discriminant validity has been achieved using HTMT ratio.

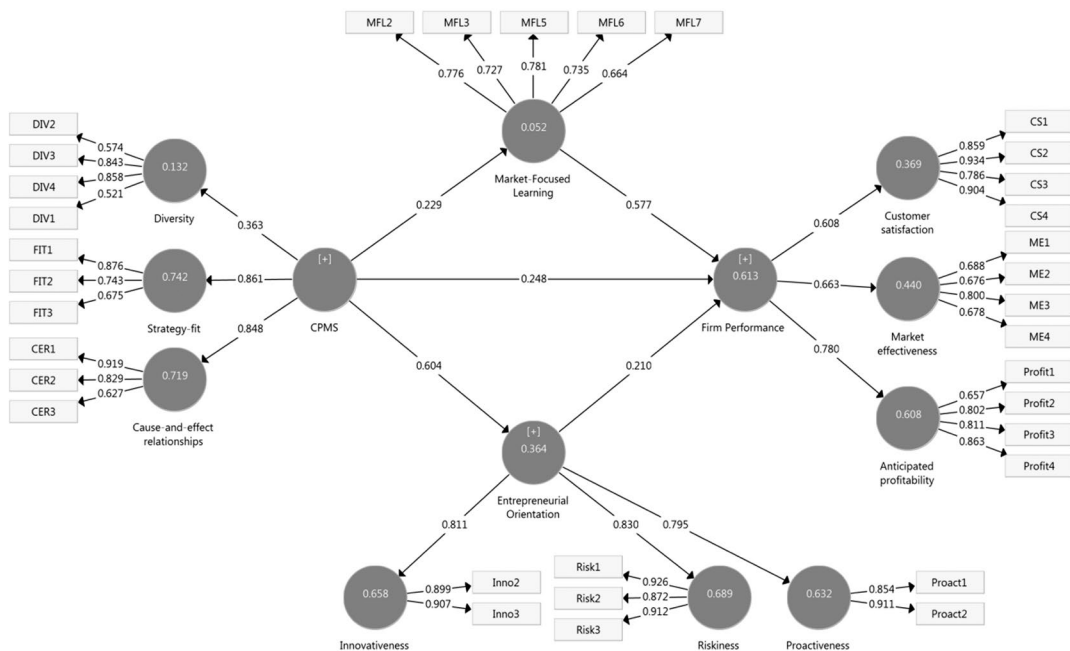


Figure 2: PLS Algorithm using SmartPLS v3.2.8



Table 2

*Discriminant Validity using Fornell and Larcker (1981) Criterion*

Constructs	AP	CER	CS	DIV	INNO	ME	MFL	PRO	RISK	FIT
Anticipated profitability	0.787									
Cause-and-effect relationships	0.039	0.801								
Customer satisfaction	0.128	0.574	0.873							
Diversity	0.408	0.044	-0.024	0.715						
Innovativeness	-0.026	0.412	0.341	0.131	0.903					
Market effectiveness	0.388	0.122	0.107	0.406	-0.093	0.712				
Market-Focused Learning	0.720	0.049	0.152	0.500	0.026	0.479	0.738			
Proactiveness	0.076	0.539	0.514	-0.022	0.675	0.101	0.084	0.883		
Riskiness	0.299	0.372	0.708	0.222	0.434	0.150	0.279	0.408	0.904	
Strategy-fit	0.080	0.583	0.697	0.125	0.407	-0.065	0.107	0.281	0.535	0.769

Table 3

*Discriminant Validity using Heterotrait-Monotrait (HTMT) Ratio*

Constructs	AP	CER	CS	DIV	INNO	ME	MFL	PRO	RISK	FIT
Anticipated profitability										
Cause-and-effect relationships	0.195									
Customer satisfaction	0.226	0.731								
Diversity	0.722	0.213	0.150							
Innovativeness	0.059	0.565	0.441	0.327						
Market effectiveness	0.489	0.432	0.188	0.630	0.195					
Market-Focused Learning	0.886	0.287	0.214	0.701	0.193	0.611				
Proactiveness	0.161	0.757	0.699	0.254	0.875	0.292	0.165			
Riskiness	0.361	0.471	0.789	0.331	0.520	0.197	0.327	0.500		
Strategy-fit	0.306	0.858	0.895	0.400	0.567	0.324	0.302	0.431	0.671	

## 4.2 Structural Model

In current paper, diversity (0.363,  $p < 0.10$ ), strategy fit (0.861,  $p < 0.10$ ) and cause and effect relationships (0.848,  $p < 0.10$ ) were all significantly explained by the comprehensive performance measurement system. In addition, innovativeness (0.811,  $p < 0.10$ ), riskiness (0.830,  $p < 0.10$ ) and proactiveness (0.795,  $p < 0.10$ ) were all significantly explained by the entrepreneurial orientation. Moreover, customer satisfaction (0.608,  $p < 0.10$ ), market effectiveness (0.664,  $p < 0.10$ ) and anticipated

profitability (0.780,  $p < 0.10$ ) were all significantly explained by the firm performance.

Table 4  
*Direct Effect*

Constructs	Estimates	P Values
CPMS → Entrepreneurial Orientation	0.604	0.000
CPMS → Firm Performance	0.248	0.121
CPMS → Market-Focused Learning	0.229	0.224
Entrepreneurial Orientation → Firm Performance	0.210	0.067
Market-Focused Learning → Firm Performance	0.577	0.000

As the table above showed, entrepreneurial orientation (0.604,  $p < 0.10$ ) was significantly explained by the CPMS, however, market-focus learning (0.229,  $p > 0.10$ ) and firm performance (0.248,  $p > 0.10$ ) were insignificant to CPMS. Moreover, market-focus learning (0.577,  $p < 0.10$ ) and entrepreneurial orientation (0.210,  $p < 0.10$ ) were found to be significantly explaining the firm performance.

Table 5  
*Specific-Indirect Effect*

Constructs	Estimates	P Values
CPMS → Entrepreneurial Orientation → Firm Performance	0.127	0.074
CPMS → Market-Focused Learning → Firm Performance	0.132	0.219

As the table above showed, CPMS was significantly explaining firm performance (0.074,  $p < 0.10$ ) with the mediating effect of entrepreneurial orientation, however, CPMS was insignificant to firm performance (0.132,  $p > 0.10$ ) with the mediating effect of market-focused learning.

Table 6  
*Predictive Relevance*

Constructs	R Square	Adj. R Square	Q- Square
Entrepreneurial Orientation	0.364	0.361	0.181
Firm Performance	0.613	0.606	0.164
Market-Focused Learning	0.052	0.047	0.019

As the table above showed, the Q-square value of all the variables was found to be higher than

absolute zero. Moreover, the independent constructs are explaining the dependent variables including the anticipated profitability 60.8%, cause and effect relationships 71.9%, customer satisfaction 36.9%, diversity 13.2%, innovativeness 65.8%, market effectiveness 44.0%, market-focused learning 5.2%, proactiveness 63.2%, riskiness 68.9% and strategy fit 74.2% respectively, as denoted by their R-square values.

## 5. Conclusions

The comprehensive performance measurement system was significantly explaining entrepreneurial orientation as supported by Martin and Javalgi (2016) meaning that the organizations with effective CPMS likely understand their competitive capabilities as it provides them with higher orientation in relation to entrepreneurial abilities. The comprehensive performance measurement system was insignificant to firm performance as supported by Ying (2012) meaning that for organizations, high levels of CPMS can help better understand their overall performance but measuring the performance alone cannot improve the overall firm performance. CPMS were insignificant to market focused learning as supported by Homburg, Artz, and Wieseke (2012) so by being diverse, strategy fit and cause-and-effect relationships do not help increase the overall learning of the organization but can help with better knowledge based training. Entrepreneurial orientation was significantly explaining firm performance as supported by Homburg et al.(2012) because adopting and implementing entrepreneurial orientation strategy affects the organizational performance of operating in organizations as it helps improved quality service to all the stakeholders in contrast to the competition. Market-focused learning was insignificant to firm performance as supported by Taheri et al. (2019a) as providing the employees with market focused-learning alone is not sufficient but also the employees should be provided with better information and knowledge in regards to what they are training for.

CPMS were significantly explaining firm performance with the mediating effect of entrepreneurial orientation as supported by Hall (2008) meaning that organizations should keep on working on their innovativeness, riskiness and proactiveness leadership strategies as it increases the firms overall performance. CPMS was insignificant to firm performance with the mediating effect of market-focused learning as supported by Aragón, Jiménez, and Valle (2014) suggesting that the firms need to review their strategies related to innovativeness, riskiness and proactiveness while also enhance and new learning system with better understanding of the market in order to achieve greater firm performance.

### 5.1 Recommendations

The study has aimed to investigate the role of comprehensive performance measurement system (CPMS) on overall performance with the mediation of market-focused learning and entrepreneurial orientation in the manufacturing sector of Pakistan. The collected 172 sample

responses of marketing and human resource professionals and employed partial least square structural equation modeling (PLS-SEM) for data analysis. The outcomes of the study suggested that CPMS has an ability to improve the overall performance of manufacturing organizations. Secondly it is noted that market-focused learning tends to enhance the all in all firm performance. Thirdly, the presence of entrepreneurial orientation within an organization helps to improve the firm performance. Even though, the integration of market-focused learning and entrepreneurial orientation with CPMS enhances the overall firm performance because the mediation of both mediating factors is positive and significant. Thus, the outcomes proved that not only CPMS, but market-focused learning and entrepreneurial orientation are likewise the most essential elements to improve the firm performance of manufacturing industries in Pakistan.

Practically, this study provides several vital implications for the managers of manufacturing firms. To achieve the smooth and enhanced firm performance; it is suggested to identify the underperforming services, reduce the point of friction, include the technological aspects, recognize the important services to meet performance standard, identify those services that tends to improve the performance with minimal cost and efforts, and try to take corrective measures regularly. Secondly, it is recommended to recognize the actual need of the consumers, try to fulfill those needs, adjust price level, deliver value to the consumers, regularly promote the product and continuously work on product innovation, in order to focus upon the market dynamics. Thirdly, the aspect of entrepreneurial orientation proved to be important for the betterment of firm performance. Thus, the study recommends that managers need to support the employees who possess enthusiastic nature and always try to come up with new ideas. Similarly, by encouraging the employees, who are ready to integrate with major players of the organization, seek routes to meet the required resources, innovate the product with novel thoughts and satisfy the demands of market by pro-activeness. In this manner, managers should be able to integrate both the aspects of marketing and human resource to achieve the high firm performance in Pakistan.

In continuation, this study likewise proposes some future research recommendations on the basis of limitations. Primarily, overall considered sample frame is limited to 172, which is enough to meet the objective of the study but not sufficient to generalize the outcomes. Therefore, increase in sample size may provide better insights about the manufacturing firms and likewise assists to generalize the findings. Secondly, this study examined the mediation of market-focused learning and entrepreneurial orientation; but both the aspects cannot be promoted without the support of the organization. Hence, it is suggested to include the moderation of organizational support or supervisor support between the relationship of market-focused learning with firm performance, and entrepreneurial orientation with firm performance.

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## References

- Abushaiba, I.A., & Zainuddin, Y. (2012). Performance measurement system design, competitive capability, and performance consequences-a conceptual like. *International Journal of Business and Social Science*, 3(11),551-573.
- Ahmed, F., Kitchlew, N., Bajwa, S.U., & Shahzad, K. (2018). Congruence of market orientation and organizational learning: Performance perspective. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 12(1), 309-329.
- Al Mamun, A., Mohiuddin, M., Fazal, S. A., & Ahmad, G. B. (2018). Effect of entrepreneurial and market orientation on consumer engagement and performance of manufacturing SMEs. *Management Research Review*, 41(1), 133-147.
- Aragón, M.I.B., Jiménez, D.J., & Valle, R.S. (2014). Training and performance: The mediating role of organizational learning. *BRQ Business Research Quarterly*, 17(3), 161-173.
- Arunachalam, S., Ramaswami, S.N., Herrmann, P., & Walker, D. (2018). Innovation pathway to profitability: The role of entrepreneurial orientation and marketing capabilities. *Journal of the Academy of Marketing Science*, 46(4), 744-766.
- Astrachan, C.B., Patel, V.K., & Wanzenried, G. (2014). A comparative study of cb-sem and pls-sem for theory development in family firm research. *Journal of Family Business Strategy*, 5(1), 116-128.
- Cameron, K.S. (1986). Effectiveness as paradox: Consensus and conflict in conceptions of organizational effectiveness. *Management Science*, 32(5), 539-553.
- Carmines, E.G., & Zeller, R.A. (1979). Reliability and validity assessment: Quantitative applications in the social sciences. Sage University, Beverly Hills, London.
- Carton, R. B. (2004). *Measuring organizational performance: An exploratory study* [Unpublished doctoral dissertation]. University of Georgia.
- Compte, A. (1854). *The positive philosophy of auguste compte*: London, UK: Chapman.
- Cordina, R., Taheri, B., Bititci, U., Gannon, M., & McFarlane, J. (2017, September). Performance measurement systems: Does market focused learning and entrepreneurial orientation improve travel agency performance?. In *7th Advances in Tourism Marketing (ATMC) Conference*, Casablanca, Morocco.
- Dörnyei, Z. (2007). Creating a motivating classroom environment. In *International handbook of*

*English language teaching* (719-731). Springer, Boston, MA.

- Fornell, C., & Larcker, D.F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382-388.
- Fuller, C. M., Simmering, M. J., Atinc, G., Atinc, Y., & Babin, B. J. (2016). Common methods variance detection in business research. *Journal of Business Research*, 69(8), 3192-3198.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM). Sage publications.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed, a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hair, J.F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V.G. (2014). Partial least squares structural equation modeling (pls-sem) an emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Hall, M. (2008). The effect of comprehensive performance measurement systems on role clarity, psychological empowerment and managerial performance. *Accounting, Organizations and Society*, 33(2-3), 141-163.
- Henseler, J., Hubona, G., & Ray, P.A. (2016). Using pls path modeling in new technology research: Updated guidelines. *Industrial Management & Data Systems*, 116(1), 2-20.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135.
- Hernández-Linares, R., Kellermanns, F. W., & López-Fernández, M. C. (2018). A note on the relationships between learning, market, and entrepreneurial orientations in family and nonfamily firms. *Journal of Family Business Strategy*, 9(3), 192-204.
- Homaid, A. A., Minai, M. S., & Al-Ansi, A. A. (2018). The effect of market and entrepreneurial orientation on the performance of microfinance institutions: The mediating role of learning orientation in the context of Yemen. *Journal of Business and Retail Management Research*, 12(3), 117-130.
- Homburg, C., Artz, M., & Wieseke, J. (2012). Marketing performance measurement systems: does comprehensiveness really improve performance? *Journal of Marketing*, 76(3), 56-77.
- Hughes, J. A., & Sharrock, W. W. (2016). The philosophy of social research. Routledge.

- Hussain, J., Shah, F. A., Rehman, W., & Khan, Y. (2018). Learning orientation and performance: The interaction effect of entrepreneurial orientation. *Pakistan Business Review*, 19(4), 960-977.
- Imam, S. & Zainul, A. (2014). The effect of market orientation and entrepreneurial orientation toward learning orientation, innovation. *Competitive Advantages and Marketing Performance*, 6(21), 69-81.
- Joensuu-Salo, S., Sorama, K., Viljamaa, A., & Varamäki, E. (2018). Firm performance among internationalized SMEs: The interplay of market orientation, marketing capability and digitalization. *Administrative Sciences*, 8(3), 31-47.
- Liang, X., Gao, Y., & Ding, Q. S. (2018). What you measure is what you will get? Exploring the effectiveness of marketing performance measurement practices. *Cogent Business & Management*, 5(1), 150-171.
- Liang, X., & Frösén, J. (2020). Examining the link between marketing controls and firm performance: The mediating effect of market-focused learning capability. *Journal of Business Research*, 109(1), 545-556.
- Iyer, P., Davari, A., Zolfagharian, M., & Paswan, A. (2019). Market orientation, positioning strategy and brand performance. *Industrial Marketing Management*, 81(1), 16-29
- Martin, S. L., & Javalgi, R. R. G. (2016). Entrepreneurial orientation, marketing capabilities and performance: the moderating role of competitive intensity on Latin American International new ventures. *Journal of Business Research*, 69(6), 2040-2051.
- Martinez, E. V., Serna, M. D. C. M., & Guzman, G. M. (2018). The Relationship Between Market Orientation, Entrepreneurial Orientation and Learning Orientation on Innovation and its Effect on Performance in Mexican SMEs. *International Business Management*, 12(2), 132-144.
- Mathew, N., & Javalgi, R. (2018). Conceptualizing the relationships among the strategic orientations, cultural intelligence, international diversification and performance of firms. *KnE Social Sciences*, 3(10), 100-121.
- Na, Y.K., Kang, S., & Jeong, H.Y. (2019). The effect of market orientation on performance of sharing economy business: Focusing on marketing innovation and sustainable competitive advantage. *Sustainability*, 11(3), 729-745.
- Nassazi, A. (2013). Effects of Training On Employee Performance: Evidence from Uganda.
- Nunnally, J.C., & Bernstein, I.H. (1994). Psychometric theory (Vol. 3). New York: McGraw-Hill.

- O'Cass, A., & Weerawardena, J. (2010). The effects of perceived industry competitive intensity and marketing-related capabilities: Drivers of superior brand performance. *Industrial Marketing Management*, 39(4), 571-581.
- Oktavio, A., Kaihatu, T.S., & Kartika, E.W. (2019). Learning orientation, entrepreneurial orientation, innovation and their impacts on new hotel performance: Evidence from Surabaya. *Jurnal Aplikasi Manajemen*, 17(1), 8-19.
- Pardi, S., Imam, S., & Zainul, A. (2014). The effect of market orientation and entrepreneurial orientation toward learning orientation, innovation, competitive advantages and marketing performance. *European Journal of Business and Management*, 6(21), 69-80.
- Piirala, P. (2012). The Impact of Entrepreneurial Orientation on Firm Performance: A Comparative Study of Finnish and German SMEs. SME Business Management, Master Thesis. Aalto University. Runebergsgation, Finland.
- Podsakoff, P.M., & Organ, D.W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531-544.
- Porter, M. E. (1990). The competitive advantage of nations. *Harvard Business Review*, 68(2), 73-93.
- Ratnawati, Soetjipto, B. E., Murwani, F. D., & Wahyono, H. (2018). The role of SMEs' innovation and learning orientation in mediating the effect of CSR programme on SMEs' performance and competitive advantage. *Global Business Review*, 19(3), S21-S38. Retrieved from <https://doi.org/10.1177/0972150918757842>
- Rezaei, J., & Ortt, R. (2018). Entrepreneurial orientation and firm performance: The mediating role of functional performances. *Management Research Review*, 41(7), 878-900.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students: Pearson education.
- Slevin, D.P., & Terjesen, S.A. (2011). Entrepreneurial orientation: Reviewing three papers and implications for further theoretical and methodological development. *Entrepreneurship Theory and Practice*, 35(5), 973-987.
- Taheri, B., Bititci, U., Gannon, M.J., & Cordina, R. (2019a). Investigating the influence of performance measurement on learning, entrepreneurial orientation and performance in turbulent markets. *International Journal of Contemporary Hospitality Management*, 31(3), 1224-1246.
- Ying, Z.Y. (2012). *The impact of performance management system on employee performance*. [Unpublished Master Degree Thesis]. University Twente, Netherlands.



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