Volume 8 Number 2 July 2020
Online ISSN 2307-7921
Print ISSN 2070-0296

JINNAH BUSINESS REVIEW

http://www.jbrc.pk

ISSN 2070-0296

JINNAH BUSINESS REVIEW

VOLUME: 8 NUMBER: 2

JULY 2020

JINNAH BUSINESS RESEARCH CENTER

ISLAMABAD, PAKISTAN

Composed & Designed By: KHAWERI

Jinnah Business Review
July 2020, Vol. **8**, No. 2,

Table of Contents

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 1-14

What leads to Employee Engagement in Pharmaceutical Sector of Pakistan?

Shiraz Ahmed[1] & Junaid Ansari*[2]

[1,2]*Institute Of Business Management, Karachi, Pakistan*

Abstract. Managers and HR professionals are always concerned with the engagement of employees at workplace. Using attitude theory this study aims to examine the connection between employee engagement with job fit, psychological climate, leadership style and affective commitment. A sample of 284 employees out of 365 participants was chosen from two pharmaceutical companies based in Karachi. SPSS was used to analyze the data and different statistical tool were applied. The results of the study showed that the independent variables, i.e. job fit, psychological climate, leadership style and affective commitment have a significant and positive influence on employee engagement. All the hypotheses were failed to reject. This study can help HR professionals in designing the strategy for retention and engagement. The results which are presented in this study can help organizations to identify the potential reasons for engagement which leads to high productivity and profitability.

Key words: Job fit, affective commitment, psychological climate, employee engagement, leadership style.

1 Introduction

Employee engagement is a vital and crucial factor to increase productivity and profitability. These days it has got considerable importance by the organization to lower the turnover rate (Lockwood, 2007); though, it has been discussed by the some researchers but there is still very shortage on the study of engagement, i.e. the drivers of engagement (Macey and Schneider, 2008). Actually, it is the obligation of HR practitioners to search the factors related to engagement which can be included in the strategy for retention and strategic planning. These days Employee engagement has become an issue at the CEO level (Saks and Gruman, 2011).

The research conducted by the Buckingham (1999) and Cartwright and Holmes (2006) showed that only 30% employees are engaged and the rest are not engaged and disengaged. The engaged employees were found to be more associated with the organization at cognitive and physical level (Crabtree, 2004). These employees usually didnt get absent from the work (Wagner and Harter, 2007) as compared to their colleagues, thus these employees save the profitability of the organization up to 86.5 million every year in terms of productivity (Gebauer et al., 2008; Sundaray, 2011). Additionally, involved operatives have been revealed as an important factor for

*Corresponding author.
Email: junaid.ansari@iobm.edu.pk

less accidents when employees are performing work (Wagner and Harter, 2007). This study also highlights that the people who are physically, cognitively and affectionally engaged at the workplace brings more clients and provides customer satisfaction and also shares positive feelings and emotions with their colleagues. Earlier researches show that there is a gap on how to create employee engagement and its antecedents variable. This gap has guided this research to work in this area.

1.1 Objectives

Employee engagement is a vital and crucial factor to increase productivity and profitability. Additionally, employee engagement has been revealed as an important factor for less accidents when employees are performing work (Wagner and Harter, 2007). This discussion leads to formulate the following objectives on the research questions.

1. To determine influence of job fit on employee engagement
2. To determine influence of affective commitment on employee engagement
3. To determine influence of Leadership Style on employee engagement
4. To determine influence of Psychological climate on employee engagement

1.2 Gaps and Contribution

One of the elementary problems with these studies is the subject and the context. The previous researches were conducted in different countries, therefore generalizing their results is difficult. This research study was focused on the antecedents of employee engagement in the two pharmaceutical organizations located in Karachi only. Therefore the results cannot be generalized to whole of the country. The factors related to respondents social environment and backgrounds are not considered for this study.

2 Literature Review

Macey and Schneider (2008) investigated four specific variables, which include the classification of fit measure, its means of calculation, dimensions and its use as a benchmark for established measure of personorganization fit. The strongest relationship were found between fit and job criteria, which is subjective in nature. The study also indicated that value congruency and personality negatively affects employee work engagement. Recent study by Gallup indicated that Singaporean employers lose $30 billion dollars and USA economy 3 trillion dollars every year. The study also highlighted that only less than 20% employees are engaged and the rest are not engaged and disengaged. The engaged employees out perform disengaged employees to 3:1, which means they are three times more profitable to disengaged ones. The cost of high disengagement is a serious concern for managers and organizations.

Zigarmi (2008) discussed the role of job attitude in measuring employee engagement. They critically examine the link between the job attitudes namely organizational commitment, job involvement, job satisfaction with employee engagement. Hypotheses based on the theoretical model were developed to illustrate the relationship among the variables discussed in the research.

Numerous researchers instituted the empirical facts on whether employee engagement influences the level of change and creativity inside workplace (Chaudhary and Akhouri, 2019; Elwyn et al., 2017). The aftermath magnifies the act of operative employee involvement on creativity and change in the workplace. The aftermath counsel that involved operative is exhilarated in their obligations and tasks that make them to contemplate creatively and to go supplementary mile. The researchers, moreover discovered that a trustful work nature, job empowerment and a little sense of autonomy are not merely relevant in enhancing operative assurance but are additionally momentous in reassuring creativity and innovation.

2.1 Employee Engagement

Employee engagement is a vital and crucial factor to increase productivity and profitability. These days it has got considerable importance by the organization to lower the turnover rate (Huang et al., 2016); though, it has been discussed by the some researchers but there is still very shortage on the study of engagement, i.e. the drivers of engagement (Barik and Kochar, 2017).

2.2 Job Fit

Job fit characterized by Bui et al. (2017) demonstrated a connection of employee state of mind and conduct which is powerfully identified with employee engagement and duty. Those employees who feel strongly that they have great job fit result as experience professional comparing with their organization. The job fit gives energy to employees to set up a feeling of employee engagement at their work (Chen et al., 2014).

2.3 Affective Commitment

The affective commitment of employee is considered as an enthusiastic bond with organization and has been viewed as a huge determinant of duty and commitment. Those workers who are affectively dedicated tend to build their support in the organizations exercises (Rhoades et al., 2001). Affectively dedicated employees get a feeling of seriousness in their work (Kahn, 1990) and feel expressively and mentally secure to interface with work (Rhoades et al., 2001).

2.4 Psychological Climate

Harter et al. (2010) set up that these variables significantly identify with the understanding of employee's learning of work and affect the advancement of employee engagement. As per Kataria et al. (2019) a familiarity with security and openness with work got advanced in psychological climate and offer certainty to people in accomplishment of seriousness in their work parts Kahn (1990). The variables which influence an employee's attitude at work include job challenge or supportive manager results in positive employee engagement (Czarnowsky, 2008; Wagner and Harter, 2006).

2.5 Leadership Style

Leadership style refers to the moves a pioneer makes to propel subordinates and fulfill authoritative objectives through others. Leadership style is represented by the accompanying sorts of leadership practices: contingent reward, management by exception (passive and active), and

laissez-faire. Contingent reward portrays the trading of resources that happens between a leader and his employee. The important aspect of transactional leadership style, sometimes portrayed as "non-leadership" is the laissez-faire style. This arrangement of practices alludes to the avoidance of leadership tasks, for example, setting objectives, observing performance, and coaching which contributes towards employee engagement (Breevaart et al., 2016).

2.6 Job Fit and Employee Engagement

Several Studies were conducted to understand relationship between job fit and employee engagement (Bui et al., 2017). One of the studies was conducted by Saks and Gruman (2011) suggested that job fit encourages the employees to be more involved in their jobs and have high employee engagement ultimately resulting in polishing the behaviors related to work. Employee engagement is the state of connection of an employee where he is engaged on a long term to an organization regardless of additional benefits. It is a state where employee is satisfied with job and is actually engaged on the work cognitively, physically and affectionally (Wagner and Harter, 2007). The people who are physically, emotionally and cognitively engaged come to work daily and their absenteeism is low as compared to others (Magee et al., 2017), they are consistently associated with the work at all levels.

H_1: *Job fit positively influences Employee engagement*

2.7 Affective Commitment and Employee Engagement

Affective commitment has been defined and explained by various researchers for example Albrecht and Marty (2020) believe there is a strong relationship between affective commitment and employee engagement. Another study was conducted by Rhoades et al. (2001) and they have found it that an affective bond that employees have with their organization leads to certain important factors such as employee engagement, dedication, loyalty, and satisfaction. Furthermore, affective commitment focused on emotional connection employees have with their work and level of emotive qualities of engagement.

According to Rhoades et al. (2001), there are certain antecedents which are necessary for determining connection between affective commitment and employee engagement. These factors include support from supervisor, empowerment, rewards and justice with consideration. Similarly, Rhoades et al. (2001) argued that certain outcome variables for example absenteeism, performance, and turnover also depict level of affective commitment. These qualities show how deeply committed the employees are towards their tasks dedicated to achieve organizational goals (Harter et al., 2003).

H_2: *Affective commitment positively influences Employee engagement*

2.8 Psychological Climate and Employee Engagement

There are a number of researches that explore the meaning of psychological climate and its significance to employee engagement (Paek et al., 2015). Psychological climate has been operationalized into several components. Brown and Leigh (1996) were inspired by Kahn (1990) original theory of engagement and believed that there is a strong link of psychological climate that an employee is in and the level of engagement he shows at work. O'Neill and Arendt (2008) tried to explain psychological climate through the eyes of employees, he elaborates that it

is important to understand through the eyes of employees for example how he perceives meaningful work and psychological representations of structures, processes and events that occur in organization. In short Psychological climate helps in determining a framework to a particular organizations culture and research.

On the bases of the above literature review, following hypotheses was created:

H_3: Psychological climate positively influences Employee engagement

2.9 Leadership style and Employee Engagement

Numerous studies found the relationship of leadership with employee engagement (Busse and Regenberg, 2019). A research was conducted by Christian et al. (2011) argued that there is a relationship between Transformational Leadership and Employee Engagement. There is a medium size correlation between employee engagement and Transformational Leadership. Another research was conducted by three of the famous authors (Purvanova et al., 2006). They have elaborated on this link which clearly shows that employee perceptions on employee engagement and job importance is the one of the mediating factor between Employee Engagement and Transformational Leadership. Macey and Schneider (2008) have jointly worked and discussed on multi-dimensional nature of employee engagement. According to them, they say that Transformational Leadership has an impact on Employee Engagement.

Employee engagement is the state of connection of an employee where he is engaged on a long term to an organization regardless of additional benefits. It is a state where employee is satisfied with job and is actually engaged on the work cognitively, physically and affectionally (Wagner and Harter, 2007). The people who are physically, emotionally and cognitively engaged come to work daily and their absenteeism is low as compared to others (Magee et al., 2017), they are consistently associated with the work at all levels.

A research was conducted by Bernthal and Wellins (2006). They have extended the work of Judge et al. (2002) by doing analysis and explored their ideas that a leaders personality relates to transactional and transformational leadership and how that results in Employee engagement. The concept of extraversion has emerged as a significant predictor of all major factors of transformational leadership (idealized influence and inspirational motivation are all combined from a charismatic leadership component).

H_4: Leadership style positively influences Employee engagement

2.10 Conceptual Framework

On the premise of the above writing dialog, employee engagement has been found as a dependent variable and job fit, affective commitment, leadership style and psychological climate as an autonomous variable. On the backing of these variables, taking after reasonable edge work has been made and examination is done underneath.

In particular, if one species a broad behavioral criterion that describes the overlap among job performance, organizational citizenship behavior, and withdrawal (that is, lateness, absence, and turnover), then, accord- ing to attitude theory, a broad job attitude should predict this criterion very strongly.

In particular, if one species a broad behavioral criterion that describes the overlap among job performance, organizational citizenship behavior, and withdrawal (that is, lateness, absence, and turnover), then, accord- ing to attitude theory, a broad job attitude should predict this criterion very strongly In particular, if one postulates a behavioral criterion that describes employee

engagement then, under the umbrella of attitude theory, employee engagement should predict by job attitudes.

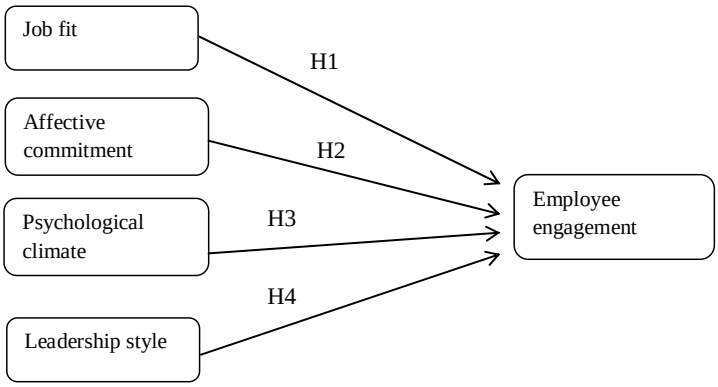

Figure 1: Conceptual Framework

3 Methodology

The research design is based on Quantitative approach. SPSS 18 was used to evaluate the hypotheses. Questionnaire was used to collect the responses. Different statistical tests were conducted to analyze the data. These statistical tests include reliability (Cronbachs Alpha), Exploratory Factor Analysis (EFA), Validity (Convergent & Discriminant), correlation (Karl Pearson Bivariate Correlation), and regression analysis.

3.1 Population and Sample

Employees of pharmaceutical companies were selected as the population for this study and the total of this population was approximately more than 7000 employees. The sample size calculated through Raosoft (2004) for this study which was 365 participants. The total number of received questionnaire was 383. All the respondents participated in this research were on voluntary basis. The response rate was 78%. The sampling technique employed for this study is Convenience sampling (non-probability). It is simple, fair and reasonable to collect the data, select a sample, accomplish the result and generalize the results through this sampling technique. If arbitrary selection is done properly, the sample is therefore representative of the entire population Lund (2012). Three modified scales which were originally developed by May et al. (2004) are used to measure an individuals grade of employee engagement at work. This is a 17-item scale. The reliability of this scale in this study is $\alpha = .89$.

3.2 Measurement & Scale

The Person-Organization Fit Scale Kasemsap (2013) is a 5-item scale where participants were evaluated on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Coefficient

alpha for the Person-Organization Fit Scale in the present study was α = .92. The instrument used for measuring Affective commitment was developed by Allen and Meyer (1996) and Meyer et al. (1990). The original Affective commitment scale is a 6-item scale. The reliability estimates between .74 and .88.

4 Results

This section describes the demographic profiles and the statistical analysis conducted on the basis of the data collected from the respondents.

4.1 Respondents Profile

Demographics of the respondents selected for this study are discussed in Table 1 which includes the information regarding their age, income and education. It was noticed that majority of the respondents were male, and marital status of most of the respondents were single. It was also noticed that young employees were majority in numbers i.e. 44%. The income of the majority people were found between 31 to 40 thousand PKR.

4.2 Descriptive Statistics

The normality of the data was ascertained through descriptive statistics which is summarized in Table 2. Results contain the mean, standard deviation, skewness, and kurtosis values. The acceptable range of Skewness and Kurtosis for satisfying the conditions of univariate normality is $\pm$ 3.5 (Harlow, 2014)

Table 2 shows the descriptive statistics results. It can be seen that the values of lowest and highest skewenss are referred to Leadership Style (Mean = 4.799, SD= 1.066, SK= -0.270), and Employee Engagement (Mean = 4.757, SD = 0.873, SK= -0.676) respectively. The Kurtosis for Psychological climate is positive while all the other items have a negative kurtosis. The values of lowest and the highest kurtosis are referred to Affective Commitment (Mean = 4.800, SD = 0.9446, KT= -.125) and Employee Engagement (Mean = 4.757, SD = 0.873, KT= -0.568) respectively.

4.3 Reliability of the Constructs

The reliability of the variables for engagement were already measured by Buchanan and Bryman (2007), therefore validities were already proven. For this study please refer to Table 3 for results:

Table 3 shows the results of reliability analysis and items retained after conducting the reliability analysis tests. The reliability of employee engagement is at the highest i.e. α =.81 (M=4.75, SD=0.87), while the reliability for leadership style is at the lowest i.e. α =.60 (M=4.79, SD=1.06). Results show that all of the Cronbachs Alpha values of the constructs were found greater than 0.6 which lies under the acceptable range of Cronbachs Alpha values, which shows that items within the constructs have internal consistency as Leech and Onwuegbuzie (2008) suggests these values.

Table 4.1: Profile of Respondents

Variable		Number	Percentage
Gender	Male	245	64
	Female	138	36
Age	21-30 yrs	168	44
	31-40 yrs	128	33
	41-50 yrs	69	18
	Greater than 50 yrs	18	5
Income	Till 20K	40	11
	21K-30K	130	34
	31K-40K	170	44
	41K & above	43	11
Marital Status	Single	234	61
	Married	149	39
Education	10 Yrs (Matric)	58	15
	12 Yrs (Inter)	178	47
	16 Yrs (Grad)	105	27
	18 Yrs (Post Grad)	38	9
	22 Yrs (PhD)	4	1

Table 4.2: Descriptive Analysis

	Mean	Std. Dev.	Skewness	Kurtosis
Job Fit	4.6396	1.29006	-.613	-.089
Affective Commitment	4.8004	.94463	-.402	-.125
Psychological climate	4.9060	.85622	-.556	.087
Leadership Style	4.7998	1.06652	-.270	-.940
Employee engagement	4.7571	.87389	-.676	-.568

4.4 Exploratory Factor Analysis (EFA)

Exploratory factor analysis is used to determine the relationships with the constructs. It classifies the underlying associations among measured variables. CFA is not used as to construct the model it only uses the factor loading not ignore cross loading.

Table 4.3: Reliability of the Constructs

Constructs	Cronbach's Alpha	Cronbach's Alpha on Standardized item.	No. of items	Mean	Std. Dev.
Job Fit	0.78	0.78	5	4.63	1.29
Affective Commitment	0.68	0.68	6	4.80	.94
Psychological climate	0.67	0.67	5	4.90	.85
Leadership Style	0.61	0.66	5	4.79	1.06
Employee engagement	0.81	0.81	14	4.75	.87

Please refer to table 4 for the obtained results.

Table 4.4: EFA for the Constructs

Constructs	Original Items	KMO	Bartlette's Test of Sphericity	Item Retained	Cumulative Factor Loading
Job Fit	5	0.78	966	5	70%
Affective Commitment	6	0.68	447	5	64%
Psychological climate	5	0.67	236	5	65%
Leadership Style	5	0.60	157	4	72%
Employee engagement	10	0.81	602	7	67%

The Kaiser-Meyer-Olkin (KMO) is used to examine whether the variable have linear relationships or not. Hair et al. (2006) suggests that the acceptable value for KMO is greater than 0.6. The Bartletts Test of Sphericity for all the constructs was found to be significant at $P < .05$.

4.5 Correlation Analysis

To examine the connection among the variables and find out the effect of multicollinearity, it is necessary to pass the test of correlation (Lund, 2012). Bell and Bryman (2007) suggested that the value of correlation coefficient must exist between 0.20-0.90. Please refer to Table 5 for correlation results.

4.6 Construct Validity

Construct validity is important to determine whether the used variables are applicable to given context or not Fowler Jr and Cosenza (2009).

Table 4.5: Summarized Correlation Results

Constructs	**EE**	**JF**	**AC**	**PC**	**LS**
Employee engagement	1.00				
Job Fit	0.68	1.00			
Affective Commitment	0.57	0.70	1.00		
Psychological Climate	0.51	0.45	0.51	1.00	
Leadership Style	0.42	0.31	0.41	0.40	1.00

Table 4.6: Discriminant Validity

	EE	**JF**	**AC**	**PC**	**LS**
Employee engagement	0.82				
Job Fit	0.47	0.84			
Affective Commitment	0.32	0.50	0.80		
Psychological Climate	0.26	0.20	0.26	0.81	
Leadership Style	0.18	0.17	0.17	0.16	0.85

4.7 Overall Model Regression Test

Table 11 shows the overall model of regression analysis. The summarized results are presented in Table 11 below:

Table 4.7: Regression Results for Overall Model

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	0.471	0.301		1.565	0.119
	JF_T	0.431	0.048	0.521	9.034	0
	AC_T	0.039	0.069	0.034	0.558	0.577
	PC_T	0.235	0.061	0.189	3.84	0
	LS_T	0.208	0.056	0.171	3.716	0

Dependent Variable: Employee Engagement, R^2*= .178, Adj.* R^2 *= .544, F(4,278)=82.6, p* < 0.05

The regression results shows that the overall model indicates that the predictors Job fit, Psychological climate, and Leadership style are significant as $p<.05$, whereas the predictor affective

commitment is insignificant.

5 Discussion and Conclusion

5.1 Discussion

All the four hypotheses failed to be rejected. It was found that job fit was the strongest predictor for the dependent variable employee engagement followed by affective commitment, psychological climate and leadership style. For H1 related to the positive influence of job fit on employee engagement, the result is consistent to earlier studies i.e. When employees found right degree of job fit in their jobs they are found to be more engaged at the workplace Bakker (2011).

For H2 related to the influence of affective commitment on employee engagement, the result is consistent to earlier studies i.e. When the employees found support from their colleagues, a strong sense of belonging from organization which results in high level of engagement Cartwright and Holmes (2006).

For H3 related to the influence of Psychological climate on employee engagement, the result is consistent to earlier studies i.e. when the supervisors are open to suggestions and new ideas, it motivates employees which ultimately results in high level of engagement (Zigarmi, 2008).

For H4 related to the influence of Leadership style on employee engagement, the results are consistent to earlier studies. When immediate supervisor tell their employees about organizations vision and future plans, their role in this regard and opportunities they can get to grow, it ultimately motivates employees and leads to high level of engagement May et al. (2004).

5.2 Conclusion

The research present sufficient evidence that the instrument is applicable to local context and culture in contrast to the studies conducted in other context and culture. This specifies that sound multicultural and psychometric measures can be used in assessing the employee engagement. The research also shows relationships amid leadership style, affective commitment, employee engagement, job fit and psychological climate. This consistency suggests that workers in developing and developed countries are relatively similar in reference to the factors that engage these individuals to stay in their organizations. Consequently, it points out to the generalizability of the theories of leadership style, affective commitment, employee engagement, job fit and psychological climate that were developed and tested in Western culture and applied in Pakistani culture.

5.3 Implication for Managers

This study can help HR professionals in designing the strategy for turnover retention. The results which are presented in this study can help organizations to identify the potential reasons for engagement which leads to high productivity and profitability. It can also help Managers to engage employees without increasing the budget by just focusing on the organizational climate. Managers are responsible to build the conducive environment of the organization by having a supportive attitude, providing positive feedback, giving empowerment, telling the truth and leading them to future. These actions not only make organizational climate positive but also leads employees to affective commitment.

This study can help managers in designing a suitable strategy for compensation and benefits. This research breaks some of the myths that high salary engage employees, whereas this study proves that suitable job role, positive climate are related to high level of engagement (Arakawa and Greenberg, 2007; Wagner and Harter, 2007).

5.4 Limitations and Future Research

The first limitation of this study was the use of a convenience sample. The samples used in this study are the employees of two pharmaceutical companies operating in the metropolitan city of Pakistan, which is Karachi. The generalizability of the findings are restricted across or other similar industries. There are several limitations with this study, which are as follows:

1. This research study collected data on all measures through self- reported questionnaire. The only source was the employees through which data was collected to test the hypotheses. As a consequence, the observed relationships might be susceptible (Buchanan and Bryman, 2007).
2. Longitudinal data should be established to evaluate the consistency and strength of the relationships being investigated.
3. It is also important to fully understand the influence of national culture on employee engagement to include and assess statistically the relationship between national culture and employee engagement.

References

Albrecht, S. L. and Marty, A. (2020). Personality, self-efficacy and job resources and their associations with employee engagement, affective commitment and turnover intentions. *The International Journal of Human Resource Management*, 31(5):657–681.

Allen, N. J. and Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. *Journal of vocational behavior*, 49(3):252–276.

Arakawa, D. and Greenberg, M. (2007). Optimistic managers and their influence on productivity and employee engagement in a technology organisation: Implications for coaching psychologists. *International Coaching Psychology Review*, 2(1):78–89.

Bakker, A. B. (2011). An evidence-based model of work engagement. *Current directions in psychological science*, 20(4):265–269.

Barik, S. and Kochar, A. (2017). Antecedents and consequences of employee engagement: A literature review. *International Journal of Latest Technology in Engineering, Management & Applied Science*.

Bell, E. and Bryman, A. (2007). The ethics of management research: an exploratory content analysis. *British journal of management*, 18(1):63–77.

Bernthal, P. and Wellins, R. (2006). Trends in leader development and succession. *People and Strategy*, 29(2):31.

Breevaart, K., Bakker, A. B., Demerouti, E., and Derks, D. (2016). Who takes the lead? a multi-source diary study on leadership, work engagement, and job performance. *Journal of Organizational Behavior*, 37(3):309–325.

Brown, S. P. and Leigh, T. W. (1996). A new look at psychological climate and its relationship to job involvement, effort, and performance. *Journal of applied psychology*, 81(4):358.

Buchanan, D. A. and Bryman, A. (2007). Contextualizing methods choice in organizational research. *Organizational research methods*, 10(3):483–501.

Buckingham, M. (1999). coffman, c.(1999). *First, break all the rules. New York, NY: Simon & Shuster*.

Bui, H. T., Zeng, Y., and Higgs, M. (2017). The role of person-job fit in the relationship between transformational leadership and job engagement. *Journal of Managerial Psychology*.

Busse, R. and Regenberg, S. (2019). Revisiting the authoritarian versus participative leadership style legacy: A new model of the impact of leadership inclusiveness on employee engagement. *Journal of Leadership & Organizational Studies*, 26(4):510–525.

Cartwright, S. and Holmes, N. (2006). The meaning of work: The challenge of regaining employee engagement and reducing cynicism. *Human resource management review*, 16(2):199–208.

Chaudhary, R. and Akhouri, A. (2019). Csr perceptions and employee creativity: examining serial mediation effects of meaningfulness and work engagement. *Social Responsibility Journal*.

Chen, C.-Y., Yen, C.-H., and Tsai, F. C. (2014). Job crafting and job engagement: The mediating role of person-job fit. *International Journal of Hospitality Management*, 37:21–28.

Christian, M. S., Garza, A. S., and 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.

Crabtree, S. (2004). Getting personal in the workplace: Are negative relationships squelching productivity in your company. *Gallup Management Journal*, 10(1):208.

Czarnowsky, M. (2008). Learnings role in employee engagement: An astd research study. *Alexandria, VA: American Society for Training and Development*.

Elwyn, L. J., Esaki, N., and Smith, C. A. (2017). Importance of leadership and employee engagement in trauma-informed organizational change at a girls juvenile justice facility. *Human Service Organizations: Management, Leadership & Governance*, 41(2):106–118.

Fowler Jr, F. J. and Cosenza, C. (2009). Design and evaluation of survey questions. *The SAGE handbook of applied social research methods*, pages 375–412.

Gebauer, J., Lowman, D., and Gordon, J. (2008). *Closing the engagement gap: How great companies unlock employee potential for superior results*. Penguin.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., Tatham, R. L., et al. (2006). Multivariate data analysis (vol. 6).

Harter, J. K., Schmidt, F. L., Asplund, J. W., Killham, E. A., and Agrawal, S. (2010). Causal impact of employee work perceptions on the bottom line of organizations. *Perspectives on Psychological Science*, 5(4):378–389.

Harter, J. K., Schmidt, F. L., and Keyes, C. L. (2003). Well-being in the workplace and its relationship to business outcomes: A review of the gallup studies.

Huang, Y.-H., Lee, J., McFadden, A. C., Murphy, L. A., Robertson, M. M., Cheung, J. H., and Zohar, D. (2016). Beyond safety outcomes: An investigation of the impact of safety climate on job satisfaction, employee engagement and turnover using social exchange theory as the theoretical framework. *Applied ergonomics*, 55:248–257.

Judge, T. A., Bono, J. E., Ilies, R., and Gerhardt, M. W. (2002). Personality and leadership: a qualitative and quantitative review. *Journal of applied psychology*, 87(4):765.

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4):692–724.

Kasemsap, K. (2013). Systematic framework: Constructing a causal model of job fit, affective commitment, employee engagement, and organizational performance. *International Journal of Accounting Information Science and Leadership*, 6(17):12–23.

Kataria, A., Garg, P., and Rastogi, R. (2019). Do high-performance hr practices augment ocbs? the role of psychological climate and work engagement. *International Journal of Productivity and Performance Management*.

Leech, N. L. and Onwuegbuzie, A. J. (2008). Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond. *School Psychology Quarterly*, 23(4):587.

Lockwood, N. R. (2007). Leveraging employee engagement for competitive advantage. *Society for Human Resource Management Research Quarterly*, 1(1):1–12.

Lund, T. (2012). Combining qualitative and quantitative approaches: Some arguments for mixed methods research. *Scandinavian journal of educational research*, 56(2):155–165.

Macey, W. H. and Schneider, B. (2008). The meaning of employee engagement. *Industrial and organizational Psychology*, 1(1):3–30.

Magee, C., Gordon, R., Robinson, L., Caputi, P., and Oades, L. (2017). Workplace bullying and absenteeism: The mediating roles of poor health and work engagement. *Human Resource Management Journal*, 27(3):319–334.

May, D. R., Gilson, R. L., and Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of occupational and organizational psychology*, 77(1):11–37.

Meyer, J. P., Allen, N. J., and Gellatly, I. R. (1990). Affective and continuance commitment to the organization: Evaluation of measures and analysis of concurrent and time-lagged relations. *Journal of applied psychology*, 75(6):710.

O'Neill, B. S. and Arendt, L. A. (2008). Psychological climate and work attitudes: The importance of telling the right story. *Journal of Leadership & Organizational Studies*, 14(4):353–370.

Paek, S., Schuckert, M., Kim, T. T., and Lee, G. (2015). Why is hospitality employees psychological capital important? the effects of psychological capital on work engagement and employee morale. *International journal of hospitality management*, 50:9–26.

Purvanova, R. K., Bono, J. E., and Dzieweczynski, J. (2006). Transformational leadership, job characteristics, and organizational citizenship performance. *Human performance*, 19(1):1–22.

Raosoft, I. (2004). Sample size calculator. *Available from: www. raosoft com/samplesize*.

Rhoades, L., Eisenberger, R., and Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of applied psychology*, 86(5):825.

Saks, A. M. and Gruman, J. A. (2011). Getting newcomers engaged: The role of socialization tactics. *Journal of Managerial Psychology*.

Sundaray, B. K. (2011). Employee engagement: a driver of organizational effectiveness. *European Journal of Business and Management*, 3(8):53–59.

Wagner, R. and Harter, J. K. (2006). *12: The elements of great managing*, volume 978. Simon and Schuster.

Wagner, R. and Harter, J. K. (2007). When theresa freeloader on your team. *Harvard Management Update*, 12(1):3–5.

Zigarmi, D. (2008). Just leadership: Creating a values-driven community. *Leader to Leader*, 2008(47):33–38.

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 15-32

Is Talent Management A Reality? A Case of Multinational Corporation in the Context of Karachi

Anam Qamar*[1], Shifa Haroon[2], Namra Anjum[3], Ayesha Saleem[4] & Aiman Khan[5]

[1,2,3,4,5]*Jinnah University for Women, Karachi, Pakistan*

Abstract. Talent management is the recruitment, selection, and retainment of the most talented workforce which indicates that it is an advanced field of human resource management (HRM). The prosperity of an organization depends upon its talent force. In todays dynamic and competitive world, talent management is one of the main stumbling issues that organizations face. This research study examines the reality of talent management in Pakistan; besides, the challenges in the implementation of talent management have also been investigated. This research study is qualitative; in-depth semi-structured interviews have been conducted to collect the primary data from a Pakistani public based multinational corporation. Using content analysis, the key themes were identified. The findings reveal that talent management practices lack in Pakistan, but the renowned multinational corporations follow proper procedures and policies related to talent management. Furthermore, the findings further discover that there are three major types of challenges which are being faced today by the organizations; the managerial behavioral challenges are the most important, employee behavioral challenges are the least important and the structural challenges are also essential to overcome, for the implementation of talent management. The findings from this research can be used by the management or the policymakers of different organizations to execute talent management effectively and efficiently.

Key words: Talent management, Structural challenges, Employee Behavioral challenges, Managerial behavioral challenges

1 Introduction

In the 21st century, talent management is one of the key emerging and strategic issues that organizations face (Boudreau and Ramstad, 2007; Cappelli, 2008; Collings and Mellahi, 2009; Ready and Conger, 2007). The varied reasons behind the implementation of talent management in renowned organizations had regarded as ambiguous in the past literature (Khdour, 2016). The term is ambiguous Talent Management that has urged the researchers to define this evolving term (Dhanabhakyam and Kokilambal, 2014). Researchers have conducted various studies on talent management in the previous tenure. Yet, the scholarly peer-reviewed literature is less sufficient in harmony with the principles of the analytical HRM approach (Thunnissen, 2016).

*Corresponding author.
Email: anam.qamar@ymail.com

According to (Hughes and Rog, 2008), the term Talent Management has been searched in Google about 5,750,000 times approximately, but despite this fact, the concept and definition of talent management are still elusive. It seems that whatever business leader or author wants to mean talent it becomes the definition of talent management; while the most common criticism that authors faced is that they mixed the concept of talent management to the typical HR activities (Cappelli and Keller, 2014).

The term talent management is a combination of two words, talent which means knowledge, ability or skills, and management which refers to the process of managing or controlling people (Armstrong, 2012; James Sunday Kehinde PhD, 2012). Talent Management is also defined as the strategic approach towards organizational success, it believes in improving the performance of people the talent that has the potential to make a valuable contribution to the organization (Ashton and Morton, 2005). Moreover, talent management is about fitting the right individuals at the right time in the right position with the right skills (Sharma et al., 2012). Talent Management provides a sustainable competitive advantage to organizations if those strategies aligned with the components of the HR system and link with the business strategies (Dubey, 2016). To get a clearer phenomenon, talent management is further categorized into three main components: the acquisition of talent, the development of talent, and the retention of those individuals who perform with greater capabilities. Talent management emphasizes making a strategic investment in the employees that have the potential to make a valuable contribution to the fulfillment of business objectives (McDonnell, 2011).

The economic growth of any country depends upon the quality of their human resources (HR) (Aftab, 2007). HRM strategies along with talent management have a long-term impact on the organizational success (Ashton and Morton, 2005). Prior researches have proven that the talent management strategy has a significant impact on organization and employees' productivity (Hanif and Yunfei, 2013). The talent management system is an important element behind the success of organizations (Abazeed et al., 2018). The 2007 Report of the Boston Consultancy group stated that talent management is the main challenge that the Human Resources (HR) confront in the economy of Europe. In this global era of competition, companies are facing substantial challenges in the execution of talent management (Njeri, 2014). There are a shortage and scarcity of talent in Pakistan (Rahimi et al., 2016). Moreover, to survive in this competitive world, organizations must implement talent management to effectively manage their talent force (Beechler and Woodward, 2009). Therefore, this research study aims to explore the factors that hinder the effective implementation of talent management. Furthermore, this research study will attempt to provide recommendations for overcoming these challenges.

To attain competitiveness in todays globalization era is difficult for organizations. Correspondingly, to sustain that competitiveness is more difficult as to do so organizations mainly use their workforce as their strategic tools. To achieve that, organizations attract and retain a proficient and talented workforce. To deal with this matter, human resource managers need to be familiar with the significance of talent management. As it is essential to be understood and effectively implemented in organizations. But unfortunately in Pakistan, this practice is not so common because of some challenges or to some extent talent management is blend with traditional HR practices. So, to deal with this subject current study using a qualitative approach will help to explore the challenges confronted by organizations in implementing talent management and also will address how to overcome those challenges. This research efforts to answer the given questions i.e. Do organizations implement effective talent management strategies? What are the challenges that are being faced in the implementation of talent management? and How these challenges can be overcome?.

In todays world, getting the right talent and retaining it is one of the prevalent challenges for organizations. As the right talent is the asset of any organization hence wrong hiring and placement will affect the organization and its HR activities (Jadhav, 2013). The goal of HR is to retain top talent with the organization for a long tenure and by using talent management companies can attain this goal. Talent management perceives as a primary and powerful driver for organizational success (Oladapo, 2014). Therefore, it is necessary to understand the barriers that arise in the course of executing talent management. This study will be helpful to the organizations of Pakistan to understand the challenges associated with the successful implementation of a talent management system. The study highlights the weakness accompanied by the effective execution of talent management systems in the context of Pakistan; it also facilitates the organizations by providing ways that how these challenges can be overcome. This study has been affiliated with a small number of limitations that can be considered for future researches. Primarily, the case study is being done on multinational companies existing in the private sector; future researches can be centered on investigating the execution of talent management in Public Sector Company while a comparative study can also be done in the same perspective. Secondly, due to the limited spell, the number of respondents approached for the interview is just solitary in this research study. So, in contrast with this limitation, this study does not deliver generalize results.

2 Literature Review

Iles et al. (2010) endeavor to explore that how talent and talent management is defined in the MNCS of China, how TM is different from HRM, and what factors have led MNCs to adopt talent management. The data were collected through structured interviews that were taken by employees of MNCs in Beijing city of China. The study illustrates three similarities between talent management and human resource management these are: HRM and talent management both are integrated with business strategy, TM and HRM both familiar with the significance of proper allocation of peoples, and both covers the same functional areas of HRM whereas the four differences such as Human resource management has a broader scope than talent management, HRM emphasize equality whereas TM highlights segmentation, TM focuses on the retention of talents, and the main difference is TM emphasizes on key people while HRM focuses on function. Iqbal et al. (2013) carried out an empirical investigation to explore how the concept of talent management differs from human resource management (HRM). The impact of talent management on organizational performance was also inspected. To evaluate the research questions, structured questionnaires were distributed in twenty-five (25) organizations in Pakistan and a total number of 150 responses were collected from the HR officers. The statistical technique of regression analysis was applied which proved that talent management has a positive influence on organizational performance. The conclusion also stated that talent management is not a practice, rather its a mindset. Those organizations where top executive considers talent as critically important, they perform finer in talent management. Thus, for the effective implementation of talent management: proper time investment in employee development, accountability procedures, and efficient compensation benefits are required.

Denner (2013) in his doctoral dissertation investigated that is talent management is a successful tool to fight the talent war and in creating the commitment of employees with their organizations in German Multinational Enterprises. The type of research is qualitative; in particular, multiple case study method was adopted in which six semi-structured interviews were

conducted with the HR managers of six companies. The conclusion stated that the implementation of talent management has a positive influence on increasing the satisfaction, motivation, and commitment of employees with the organization. But for the success of talent management, transparency is mandatory. Transparency in all the processes of talent management creates a perception of fairness among all employees as well as motivates the talent pool as they feel appreciated. The paper also presented the view that talent management only increases the commitment of employees with the organization, if it is properly designed and communicated. Sharma et al. (2012) tried to find the curves and shifts that influence Talent Management in the context of Indian talent settings, also explores that why Talent Management is necessary and identify that how and why it is necessary to measure Talent Management strategies effectiveness. It was concluded that Talent Management strategies are essential for organizations because it improves the financial position of organizations and gives a sense of empowerment and motivation to talents. Some conduct like the engagement of top leaders, assigning a supervisor to continuously check talent management strategies, and involvement of Talent Management in organizational strategic planning to identify the future needs of talents were also discussed in the study.

Chordia et al. (2001) conducted a study that highlighted the talent management strategies that facilitate an organization in sustainable development. To justify the study, researchers used secondary data. The researchers suggest some actions that must consider in hiring and retaining talent and to become competitive in this business world such as: appoint the right people, provide a good quality working environment, keep the promises, recognition of merit, providing learning opportunities, protecting from high work pressure. Bethke-Langenegger et al. (2011) investigated the impact of four types of talent management strategies on organizational performance. The strategies included: corporate strategy, succession planning, attract and retain talent, and develop talent on organizational performance. Prior researches argue that those organizations that have cleared talent management strategy achieved higher financial performance as compared to their competitors. The data was collected from HR, personal managers, executives, and supervisors of 317 companies. The study found that corporate strategy has a higher impact on organizational outcomes. Furthermore, retaining and developing talent has also a positive effect on HR outcomes such as motivation, trust in leaders, job satisfaction, and commitment.

Hanif and Yunfei (2013) drew attention towards the importance of talent retention and explored the impact of talent management and HR strategies on organizational performance. To prove the hypothesis, both quantitative and qualitative techniques were used. The data was collected from the leading MNCs, private, and public sector organizations through interviews, discussions and the structured questionnaire were also distributed to the 200 HR Managers. The results stated that employee retention generates significant organizational outcomes and its related to talent management. The results of the study also proved that the talent management strategy has a significant impact on organization and employees productivity and concluded that talent management system is an important component of HR generic strategies. Oladapo (2014) conducted a study that is exploratory and descriptive. It identified how talent management effects on employee retention. The quantitative research approach was used by the researcher. Approximately 200 emails were sent to the human resource managers, generalists, and directors of the different organizations for collecting the data. The results of the study showed that the talent management system is an important element behind the success of organizations and to retain talented workers is essential to the profitability of organizations. Marjani and Safaee (2016) conducted a descriptive study and the aim was to find factors that affect talent management. To gather the data library method and questionnaire is being used. The

population of 502 managers of Pars Online Companies in Tehran/ Iran is approached, which reduced into 218 managers by using the sampling formula. Further talent management is measured through five extents that are: talent retention, talent attraction, talent selection, talent development, and talent utilization. Further, he explored that a pool of activities that are related to selecting, retaining, developing, and attracting the finest and productive employees in the deliberate roles. Talented employee's demand is high in todays competitive era as they are the individuals who will take the organizations on the height of achievements. Irrespective of boundaries there are many challenges in implementing talent management.

Hughes and Rog (2008) clarifies the meaning of Talent Management and its importance and also finds the factor that influences on Talent Management effective implementation. For this purpose literature-based research was conducted. Three conceptions of talent management were also identified, first is that talent management is the compilation of typical HR practices, the second conception is that talent management aims to forecast the flow of HR practices throughout out the firm, this concept is somehow similar to HRM. The third concept was to source, develop, and reward the potential high performing employees. Afterward, all three of these concepts were criticized. In short, talent management has many dimensions which are promoted by HR practices, stimulated by talent war, and develop based on strategic HRM. External factors such as economy, global expansion, and merger or acquisition influence the implementation of talent management. Internal factors also influenced by which the most important is the definition of talent management itself whether it is similar to HR practices or not. Other most crucial internal factors are the commitment of top-level management towards talent management. Another big challenge is to align talent management with organizationals goals. Jadhav (2013) conducted a descriptive study that aimed to explore the rising trends and challenges talent management in both the private and public banking sector. To attain the objective of the study, a multi-method approach was used. The primary data were gathered questionnaires and the secondary data were collected through books, newspapers, journals, magazines, and government reports. The study portrayed some suggestions that: the implementation of the talent management system should be transparent, identification process of talented employees should be unbiased, and retaining those key employees, valuable programs should be conducted and should have more talent management initiatives.

Khdour (2016) conducted a case study at Royal Jordanian airlines using the qualitative research approach to investigate leading influential factors that help in the implementation of talent management. To obtain a clear investigation, ten (10) managers, HR managers, and top executives were called for semi-structured interviews. It was discovered that the managers had different perspectives and an unclear understanding of talent management that what it would achieve in the organization. This research study also set recommendations for the airline company, that the company must work on their employees incentives, develop career programs for them and the company should find out the best ability from their existing employees rather than from outside pool. Njeri (2014) examined the challenges that were influencing the implementation of talent management in Kenyan public sector organizations. It was hypothesized that the organizational culture, career management policies, reward structure, and work environment are the challenges that affect the implementation of talent management. The study selected a descriptive survey research design and the data was collected from Kenya broadcasting corporation through a semi-structured questionnaire which was completed by 61 participants. The qualitative and quantitative inputs were interpreted by applying content and multiple regression analysis. It was found that the organizational culture was the main challenge that affected the talent management implementation. Moreover, career management policies,

reward structure, and work environment were also the factors that affected the implementation of talent management. Thunnissen (2016) in his research, focuses on enlightening what happens in practicing Talent management and also examines the importance of Talent management for organizations and employees. The issues that influence the implementation of Talent management were also discovered. Organizational factors and factors at the individual level commonly influence the implementation of Talent management. Some other issues included a declining financial situation, top-level managers lack of interest in implementing such reforms Data were collected two (2) times to identify practicing Talent management and challenges regarding this. First, in 2009, the interviews were conducted from employees and key persons related to HRM and Talent Management to find the talent management policies and objectives and then in 2013 investigate the effect of those policies and objectives. All the interviews were properly transcribed and recorded. The data was analyzed through open coding. The results illustrate a positive outcome of implementing talent management strategies but also show the discrepancy between the perception of the organization and the employees regarding the Talent Management objectives. Rahimi et al. (2016) conducted a case study to explore the difficulties in hiring, training, developing, and retaining talent in a large financial sector organization of Pakistan. To address the research objective, 45 management interviews were carried out in the informal settings during one year as well as the secondary data was also observed from the case study organizations database. It was concluded that only high salary and compensation are not required for attracting and retaining an employee, instead, the organizations should constantly collect the feedback from the workforce because it will pinpoint the HRM that what strategies are needed to flourish and retain their top talent pool.

Aftab (2007) investigated the role of Human Resource Development (HRD) in the private and public sectors of Pakistan. The study was exploratory, data was collected through questionnaires from 76 senior-level HR executives and the technique of descriptive statistics was applied to observe the results. It was discovered that the human resource development (HRD) is unsatisfactory in the organizations of Pakistan. The challenges that the organizations faced in human resource development (HRD) include: the shortage of financial funds, lack of professional staff in the HRD department and the resistance to move towards change management. The analysis also revealed that the organizations in Pakistan do not provide career mentoring to their employees; the lower-level employees are unaware that what improvements they need to move ahead in their careers. Therefore, this unawareness increases their dis-satisfaction and it also results in an inflated turnover rate. Tafti et al. (2017) identified the challenges and success factors of talent management in Iranian Automotive Industries. The study type was qualitative and the methodology for data collection was semi-structured interviews. The sample size was fifteen (15) managers in the Iranian Automotive Industries. To find out the results, the data was analyzed through the coding method. The results highlighted that structural obstacles, environmental obstacles, behavioral obstacles, and managerial obstacles are the challenges in the implementation of talent management.

McDonnell (2011) attempted to determine the problems that professionals faced in the effective implementation of talent management. By using the methodology of the literature survey, it was concluded that for the effective implementation of talent management, the HR and talent management strategies should be aligned with the organizational strategy. It means that the organizations should identify their key positions that can make a valuable contribution because it will allow them to develop the individuals in these positions so that they bring out the best results. Stefko and Sojka (2014) carried out a study to identify the role of talent management in achieving organizational success. Many types of research portrayed the results that currently

talent management considers as the priority of the organization. It was concluded that companies should align talent management with the organization's human resource strategy, business strategy, and culture, and the involvement of all level managers is required in the implementation of talent management.

Sharma et al. (2012) endorse the concept of Talent Management and challenges faced by Indian industries while implementing it. Five challenges were discussed in the study which is: To attract quality employees, to find and develop best performers, to retain those high performers, to fill top-level positions for the companys growth and last to keep the engagement of employees. Now the day's main issue faced by organizations is that they attract talented employees but failed to retain those talents. If Talent Management implements effectively it will enhance employee recruitment and retention rate and also keep employees engaged in the organization. One of the challenges faced by organizations is that they are failed to align Talent Management under one consistent strategy. Another challenge is top-level managements commitment to Talent Management. Also, management and employees find technology difficult to manage.

2.1 Theoretical Framework

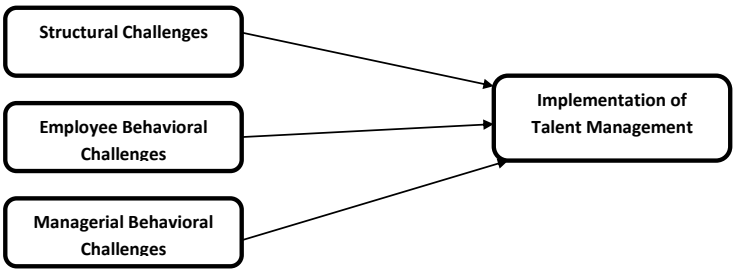

Figure 1: Theoretical Framework

2.2 Structural Challenges

Structural challenges are comprised of all the factors that are present physically in an organization. These are the interdependent elements, also called as the rigid elements of an organization.

2.3 Employee Behavioral Challenges

Behavioral challenges entail the unofficial employee behavior that constitutes the fundamental content of an organization. They are the intangible elements of an organization, also called as the soft organizational factors.

2.4 Managerial Behavioral Challenges

Managerial challenges are those obstacles that emerge from the attitudes and behavior of managers.

3 Methodology

3.1 Research Approach

This research study used the case study approach, which is a method of qualitative research design. Particularly, a single case study analysis has been chosen. A case study is an approach that follows in-depth interviews, analysis particularly focused on individuals, groups of people, or many other cases which are needed to be explored by the researchers. To analyze the data, the content analysis technique has been executed.

3.2 Data Sources

The research study has used both the secondary and primary sources for the analysis. The secondary data comprised of the analysis of newsletters or other publications issued by the selected organization while the primary data have been collected through an in-depth semi-structured interview. The interview comprised of open-ended situational and close-ended questions. There were fifty-four (54) interview questions, in total.

3.3 Case Study Organization

The interviewee was the Compensation and Benefits Officer of a Multinational Corporation, which is located in Karachi.

3.4 Ethical Implications

To conform to the confidentiality of the participant and to meet the ethical standards, a consent form was filled and signed by the participant and the researchers. The interview was also audio-recorded after the permission of the participant. The interview was not stored in the video form as per the restriction of the participant.

4 Data Analysis

4.1 Content Analysis

Structural Challenges

i. Theme: Lack of proper salary and compensation benefits

Features: Question 24: Do capable employees prefer to work in an organization, where they are not provided with proper salary and compensation benefits?

Open Coding: Answer 24: I dont think so why would anyone work. My company does not face the challenge of compensation and benefit because we work on a certain percentile of a market which is relatively high. So, it is paced more than what is offered in the market. So, we dont face this challenge.

Disposition: Positive

Axial Coding: Inappropriate Salary and compensation benefits are a challenge for retaining talented employees

Selective Coding: Structural challenges need to be addressed for effective Talent Management

Features: Question 25: What is your general view, that in other organizations compensation is a little bit challenge in the effective implementation of Talent Management?

Open Coding: Answer 25: Yeah

Disposition: Neutral

Axial Coding: Inappropriate Salary and compensation benefits are a challenge for retaining talented employees

Selective Coding: Structural challenges need to be addressed for effective Talent Management

Features: Question 26: Is salary and compensation can be a challenge?

Open Coding: Answer 26: Of course, it is there it is there, I mean there are some companies who dont provide that sort of compensation and they do lose their employees because you know the other companies are providing better compensation, all of that is there, its the part of the market game.

Disposition: Positive

Axial Coding: Inappropriate Salary and compensation benefits are a challenge for retaining talented employees

Selective Coding: Structural challenges need to be addressed for effective Talent Management

ii. Theme: Lack of transparency in the performance management system

Features: Question 27: Do you think that an organization can identify and retain its talent pool without transparent measures in the performance management system?

Open Coding: Answer 27: I think it has to be transparent to certain extend but not completely transparent.

Disposition: Neutral

Axial Coding: Transparency does not have too much effect on effective talent management but it is good to maintain it

Features: Question 28: It cannot be completely transparent?

Open Coding: Answer 28: I mean in my organization at least its not completely transparent and yeah, I mean they can

Disposition: Negative

Feature: Question 29: Is it difficult for organizations to maintain transparency in all the processes of talent management?

Open Coding: Answer 29: I dont think its necessary to maintain transparency

Disposition: Negative

Feature: Question 30: It doesnt affect talent management?

Open Coding: Answer 30: I mean a certain level of transparency is required but you know complete transparency is not required.

Disposition: Positive

Feature: Question 31: Does it demotivate an employee?

Open Coding: Answer 31: I dont know.

Disposition: Neutral

iii. Theme: Lack of alignment between talent management and the business strategy

Feature: Question 32: Is an effective Talent management strategy need to be aligned with the business strategy?

Open Coding: Answer 32: Of course, it has to be. Everything you want to do have to be aligned with your business strategy, otherwise it will go anyway; you know there is a direction for the company where it is headed

Disposition: Positive

Axial Coding: Alliance between talent management and business strategy is important for the effective implementation of talent management

Feature: Question 33: Does your company face any problem in aligning their talent management strategy with the business strategy?

Open Coding: Answer 33: We do not lack in alignment between talent management and business strategy. That is not there, that was never felt or came out in our any reports and researches or our surveys.

Disposition: Positive

iv. Theme: Lack of professional staff in the HR department

Feature: Question 34: Do you think that the talent management practices lack in Pakistan due to the deficiency of professional staff in the HR departments?

Open Coding: Answer 34: Yes, it is.

Disposition: Positive

Axial Coding: Less consideration on HR department and shortage of HR expertise has hindered the effective implementation of talent management.

Feature: Question 35: Do you think that talent management lacks due to the deficiency of professional staff in the HR departments?

Open Coding: Answer 35: Yeah that challenge is there because of that, because of less attention given to HR practices and there are a number of things that contribute to that.

Disposition: Positive

Feature: Question 36: Does the less attention towards HR departments affects talent management?

Open Coding: Answer 36: Yeah its, in some organization the problem arises with the top management, they dont believe in these practices. Sometimes the challenge lies with the strength of the HR departments they dont have enough people to get out of their operations and do something different. So, I am just saying that a multiple factors you know contribute to that one of them is lack of professional staff

Disposition: Positive

Employee Behavioral Challenges

i. Theme: Resistance to move towards change management

Feature: Question 37: Do you think that the managers in the workplace of environment of Pakistan resist implementing talent management?

Open Coding: Answer 37: I am sure it happens, it happens in other companies.

Disposition: Neutral

Axial Coding: There will be resistance towards change management, if the leader will not con-

vince about its benefits.

Selective Coding: Behavioral challenges have least significance in the effective implementation of talent management

Feature: Question 38: Do sometimes your department resists moving towards any advance practice of Talent management?

Open Coding: Answer 38: We do not face the resistance towards change management. But, there is always being resistance, if you dont explain and prove your point. So, that is always there, but you will also have the employees who are willing to change. You know that all are a part of change management and it depends on under leader of the change, how he manages that.

Disposition: Negative

Feature: Question 39: Do you provide change management related to Talent management?

Open Coding: Answer 39: the thing is, in the text book change management sounds like you know a thing that a person is constantly doing actively doing as change management. In the actual organization change management is something that goes on. It doesnt happen that you actively do change management inside the organization, it doesnt happen. Of course whenever there is goanna be a new process, there goanna be a new policy there will, its change management only but you didnt want deal it as a separate thing its just something that run on. So, we will always be resistant, but there are always be people who are motivated to implement that okay.

Disposition: Positive

Managerial Behavioral Challenges

i. Theme: Lack of understanding about the significance of talent management

Feature: Question 40: Do you think that the rare Talent Management practices in Pakistan are due to the reason that top managers do not acknowledge its significance?

Open Coding: Answer 40: I am telling this because, I didnt see this in my organization, so I can only give you an opinion over this that whats going on in the market, but yes, because I have friends in other HRs and there is resistance towards change, not all top managers are you know, actively looking for new HR practices and there are sometimes that willing to implement them, so this challenge always remains.

Disposition: Negative

Axial Coding: Due to lack of understanding about the significance of talent management, HR managers resist to implement it.

Selective Coding: Managerial Challenges are the most significant to deal with, for the effective implementation of talent management

ii. Theme: Lack of initiatives towards employees career development programs

Feature: Question 41: How important are the career development programs for the effective implementation of the Talent Management?

Open Coding: Answer 41: They are very important; I mean it comes under Talent Management only. So yeah, succession planning and talent review and all of that is there.

Disposition: Positive

Axial Coding: Talent management cannot be implemented without substantial initiatives towards the employees career development programs

Feature: Question 42: Do you think that top management of organizations takes substantial initiatives for career development of employees?

Open Coding: Answer 42: The thing is that in big organizations the responsibility not only lays on top management but it also lies with the HR. So it goes hand in hand and I cannot make a general statement about the whole market, you see, because I have not been in the market so, I dont, because your Questions are very general that this happens or not. I can only tell you that its pertaining to my organization it happens or not otherwise, I cannot tell you that generally this happens or not. In our organization, of course they do otherwise you wouldnt be able to implement it. Again of course these challenges are there in place but it depends upon your manager, your HR manager whether they are able to explain that and communicate what the significance is. Like, if I will take the talent management and sit in isolation then I cant do this. I need explain its benefits overall. So of course, there is a challenge but you can always overcome that.

Disposition: Positive

iii. Theme: Lack of involvement and collaboration among managers implementing the talent management process

Feature: Question 43: Do you involve the managers from all departments in the implementation of Talent management?

Open Coding: Answer 43: Yes, we involve all managers in Talent Management. Because, its a process, its not a new thing. Its a streamline process that works throughout in our organization you know, so its not an option. We do not face like lack of commitment among managers

Disposition: Positive

Axial Coding: Lack of involvement and collaboration among managers implementing the talent management process, is a challenge in the effective implementation of talent management

Feature: Question 44: Is it a challenge to make collaboration among all managers?

Open Coding: Answer 44: Of course, its a challenge because you know its not easy to get all of them on one page so of course its a challenge, its a part of our job. So nothing is easy, so is that.

Disposition: Neutral

iv. Theme: Lack of commitment of top level management towards talent management

Feature: Question 22: Your top management is fully committed towards talent management?

Open Coding: Answer 22: Yeah.

Disposition: Positive

Axial Coding: The commitment of top level management is the most crucial for the implementation of talent management

Feature: Question 45: In your view, what are the most important and the least important challenges in the effective implementation of talent management?

Open Coding: Answer 45: The most important would be, if your top management is not on the same page as you and the least, I dont know its impossible to implement it if your top management is not, you know, yeah so.

Disposition: Positive

Axial Coding: The commitment of top level management is the most crucial for the implementation of talent management

Feature: Question 46: Among the structural, employee behavioral and managerial behavioral challenges, what are the most important challenges?

Open Coding: Answer 46: Managerial behavioral challenges.

Disposition: Neutral

5 Results and Discussion

The content analysis technique has been executed to analyze the data, construct the themes and to code the data, with the help of the content-coding manual, ratified the challenges that are faced in the implementation of talent management. The identified challenges are discussed in the paragraphs below:

5.1 Managerial Behavioral Challenges

Managerial behavioral challenges are the most significant to overcome, for the implementation of talent management. The analysis revealed that without the commitment of top management, talent management cannot be implemented. In the case study organization, talent management is working effectively, because their top management is fully committed towards talent management. But the responsibility also lies on the HR managers to explain the significance of talent management to the top managers and convince them to implement talent management. As recently, talent management is running under HRM, so HR managers are required to take substantial initiatives towards the employee's career development programs and they should bring up all the managers from different departments on one lane for the effective implementation of talent management. The findings of this research are consistent with the findings of Hughes and Rog (2008); Iqbal et al. (2013); Njeri (2014); Stefko and Sojka (2014).

5.2 Employee Behavioral Challenges

Employee behavioral challenges are considered as the least important challenge in the implementation of talent management as they can be easily overcome. Change management is not a new concept. In the implementation of change management resistance must be there, if the leader will not explain and aware of their employees about the benefits of change and not manage them accurately. In many organizations, some people dont want change but its the responsibility of human resource management (HRM), that how they convince them to adopt change. On the other side, organizations also have employees who want change and enthusiastic to adopt it. Its all process is the part of change management and it depends on the leader of change that how he manages the change. The findings of this research study are consistent with the previous findings, according to which resistance for change among employees is a challenge in the implementation of talent management (Aftab, 2007; Marjani and Safaee, 2016). This research further discovered that behavioral challenges are the least significant because the analysis revealed that behavioral challenges can be overcome easily.

5.3 Structural Challenges

The analysis revealed that all structural challenges need to be addressed to implement an effective talent management program. The findings also discovered that transparency is not a challenge, rather its a strategy. Because complete information does not trickle down, some information remains at the top-level. So, transparency needs to be maintained but complete transparency is not required. However, inappropriate salary and compensation benefits are a challenge in implementing effective talent management. As currently, Talent management comes under the department of HRM mostly, therefore expertise of HR professionals is an essential element for the implementation of talent management. Furthermore, for the effective

implementation of talent management, it is mandatory to align talent management and business strategies in the same direction. The findings of this research are consistent with previous findings (Hughes and Rog, 2008; McDonnell, 2011; Sharma et al., 2012), according to the challenges of proper salary and compensation, lack of alignment between Talent management and business strategy and lacking in professional HR staff are hurdles in the effective implementation of Talent management. But the analysis of this research study also contradicted with previous research study (Denner, 2013; Jadhav, 2013), according to the transparency in the system is mandatory to implement talent management effectively. This study reveals that the challenge of lack in transparency is a strategy more than a challenge and it is difficult to maintain cent percent transparency.

6 Conclusion

The findings of this research study discovered that managerial behavioral challenges are the most significant in the implementation of talent management. Whereas the employee behavioral challenges are the least significant in the implementation of talent management, as they can be overcome very easily. Moreover, the structural challenges are required to be addressed for the effective implementation of talent management. The interview participant further divulged that the deficiency of resources and the shortage of time are also the challenges in the implementation of talent management. This finding is also consistent with the previous researches (Aftab, 2007; Iqbal et al., 2013). Hence, these judgments are constructive for an organization, as they assist in the effective implementation of talent management.

The in-depth interview apprised that talent management practices lack in Pakistan, as less attention is given to the HR practices. Due to this, the effectiveness of HR departments has frail. In some companies the problem arises with the top management, they do not believe in HR and talent management practices. While some companies do not provide efficient salary and compensation benefits to their employees and as a result they lose their key employees. In the case study organization, talent management is implemented and the proper procedures and policies regarding talent management are being followed in the organization. Thus, it is concluded that the giant multinational corporations like the case study organization are executing talent management, and they have proper talent management strategies and policies. But the talent management processes can be enhanced further through improvements.

6.1 Recommendations

Based on the research study findings the following strategies have been suggested for the effective implementation of talent management:

a) Provide effective salary and compensation benefits in comparison to other organizations, to retain the top talent.

b) Some companies dont consider HR as an integral part and they do not invest in human capital. This creates hurdles in the implementation of talent management. Therefore, it is required to increase the strength of HR.

c) Provide proper training to HR personnel, to increase their capabilities and abilities.

d) To overcome the gap between talent management and business strategy, management needs to sit down and figure it out that where does a gap lie and what are the reasons and how the gap can be overcome.

e) Resistance towards change can be overcome with good strategy. Every change and resistance is different, so its the job of HR to come over that and explain it over every strategy you try to adopt.

f) To overcome the managerial challenges, good communication skills are required. The HR manager should prove their point to the top management with the help of researches and surveys that why talent management is important for the organization.

g) The HR managers must be able to explain the significance of talent management to the top management, that how it benefits the organization.

h) There must be a strong commitment and collaboration among the managers of different departments that are involved in the process of implementing talent management.

i) To maintain transparency, it is required to have credible systems in the process of talent management.

j) The HR managers should take substantial initiatives towards the employees career development programs.

References

Abazeed, R. A. M. et al. (2018). The impact of talent management on organizational commitment of the employees of telecommunication companies in jordan: the mediating role of employee work engagement. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 8(4):153–162.

Aftab, S. (2007). An exploratory study of human resource development. *International Review of Business Research Papers*, 3(3):36–55.

Armstrong, M. (2012). *Armstrong's handbook of management and leadership: developing effective people skills for better leadership and management*. Kogan Page Publishers.

Ashton, C. and Morton, L. (2005). Managing talent for competitive advantage: Taking a systemic approach to talent management. *Strategic HR review*.

Beechler, S. and Woodward, I. C. (2009). The global war for talent. *Journal of international management*, 15(3):273–285.

Bethke-Langenegger, P., Mahler, P., and Staffelbach, B. (2011). Effectiveness of talent management strategies. *European Journal of International Management*, 5(5):524–539.

Boudreau, J. W. and Ramstad, P. M. (2007). *Beyond HR: The new science of human capital*. Harvard Business Press.

Cappelli, P. (2008). Talent on demand: Managing talent in an uncertain age. *Harvard Business School Press, Boston*.

Cappelli, P. and Keller, J. (2014). Talent management: Conceptual approaches and practical challenges. *Annu. Rev. Organ. Psychol. Organ. Behav.*, 1(1):305–331.

Chordia, T., Roll, R., and Subrahmanyam, A. (2001). Market liquidity and trading activity. *The journal of finance*, 56(2):501–530.

Collings, D. G. and Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human resource management review*, 19(4):304–313.

Denner, C. (2013). *How to fight the war for talent-talent management as a tool for creating a committed workforce in German multinational enterprises*. PhD thesis, Dublin Business School.

Dhanabhakyam, M. and Kokilambal, K. (2014). A study on existing talent management practice and its benefits across industries. *International Journal of Research in Business Management*, 2(7):23–36.

Dubey, R. (2016). *Strategic Management of Sustainable Manufacturing Operations*. IGI Global.

Hanif, M. I. and Yunfei, S. (2013). The role of talent management and hr generic strategies for talent retention. *African Journal of Business Management*, 7(29):2827.

Hughes, J. C. and Rog, E. (2008). Talent management: A strategy for improving employee recruitment, retention and engagement within hospitality organizations. *International Journal of Contemporary Hospitality Management*, 20(7):743–757.

Iles, P., Chuai, X., and Preece, D. (2010). Talent management and hrm in multinational companies in beijing: Definitions, differences and drivers. *Journal of world Business*, 45(2):179–189.

Iqbal, S., Qureshi, T. M., Khan, M. A., and Hijazi, S. T. (2013). Talent management is not an old wine in a new bottle. *African Journal of Business Management*, 7(36):3609.

Jadhav, S. (2013). Indian handicrafts: Growing or depleting. *IOSR Journal of Business and Management*, 2(15):7–13.

James Sunday Kehinde PhD, A. (2012). Talent management: Effect on organizational performance. *Journal of management research*, 4(2):178.

Khdour, N. (2016). The reality of talent management implementation: A case study on royal jordanian airlines. *International Journal of Business and Management*, 11(6):145–158.

Marjani, A. and Safaee, N. (2016). Ranking the driving affecting factors on talent management. *Journal of Administrative Management, Education and Training*, 12(3):300–306.

McDonnell, A. (2011). Still fighting the war for talent? bridging the science versus practice gap. *Journal of Business and Psychology*, 26(2):169–173.

Njeri, K. J. (2014). An empirical study of challenges affecting implementation of talent management in the public sector in kenya: A case of kenya broadcasting corporation.

Oladapo, V. (2014). The impact of talent management on retention. *Journal of business studies quarterly*, 5(3):19.

Rahimi, R., Nadda, V., and Hamid, M. (2016). Hrm practices in banking sector of pakistan: Case of national bank of pakistan. *International Journal of Asian Business and Information Management (IJABIM)*, 7(2):25–50.

Ready, D. A. and Conger, J. A. (2007). Make your company a talent factory. *Harvard business review*, 85(6):68.

Sharma, S., Garg, B., and Singh, K. (2012). Driving forces and emerging challenges in talent management: A pathway to organizational success. *International Journal of Advanced Research in Computer Science and Software Engineering*, 2(6):117–121.

Stefko, R. and Sojka, L. (2014). Position of talent management in context oforganizational functions. *European Scientific Journal*.

Tafti, M. M., Mahmoudsalehi, M., and Amiri, M. (2017). Critical success factors, challenges and obstacles in talent management. *Industrial and Commercial Training*.

Thunnissen, M. (2016). Talent management: For what, how and how well? an empirical exploration of talent management in practice. *Employee Relations*, 38(1):57–72.

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 33-43

Impact of Service Quality and Customer Satisfaction: Evidence from Banking Industry

Jawad Khan*[1] & Amanullah Khan[2]

[1,2]*Institute of Business and Management Sciences, The University of Agriculture Peshawar, Pakistan*

Abstract. This study aims to investigate impact of service quality on customer satisfaction. Information data were collected by questionnaires from two hundred customers of four private sector banks located in Peshawar district using convenience sampling technique. Results indicate that customer service quality has a positive influence on customer satisfaction.

Key words: Customer Service Quality (Tangibility, Reliability, Responsiveness, Assurance, Empathy), Customer Satisfaction.

1 Introduction

The role of customers and consumers is changing in progressive business environment day by day (Prahalad et al., 2000). Quality of service in the changing business environment has become the top priority for organizations. It is important for businesses to emphasize on customer-focused strategy in order to achieve competitive advantage and succeed in today's market (Taylor and Baker, 1994).

It is generally understood that the quality of service is the indicator of how efficiently the services are provided to meet consumer needs (Santos, 2003). Quality in services is the most imperative factor that is directly linked to the success of the company. Cronin Jr and Taylor (1992) found that customer satisfaction is the service quality measure of any organization.

The company's service quality should be in line with customer expectations (Zeithaml et al., 1988). The quality of services and products must be considered as strategic variables to gain efficiency and effectiveness in business transactions or operations (Anderson and Zeithaml, 1984). In providing outstanding service quality, service providers need to balance market competition (Bharati and Berg, 2005; Yoo and Park, 2007).

A list of ten performance measures for customer service (tangibility, reliability, responsiveness, courtesy, ability to communicate, credibility, security, customer access and understanding) was published by Parasuraman et al. (1985). With these ten attributes, the focus group performed their analysis in service oriented firms and customers resulting in further distillation of the SERVQUAL scale into five major customer service quality components, i.e. responsiveness, tangibility, reliability, empathy and security (Parasuraman et al., 1991, 1985).

*Corresponding author.
Email: jawadmarwat1@gmail.com

Quality in service not only enables them to fulfill the current desires but also to foresee the future needs of customers. Afterwards, it reinforces customer satisfaction and loyalty level towards these organizations (Wisniewski, 2001; Zeithaml et al., 1988). Since the essence of the services is intangible, it becomes very difficult for the consumer to recognize and determine the level of customer service they provide (Bitner, 1992; Lovelock and Lovelock, 1996). Several researchers have been intrigued by the association between quality in service and satisfaction level of customer. The availability of good service value precedes satisfaction (Yee et al., 2008). There is meaningful association between quality service and customer satisfaction (Anderson and Sullivan, 1993).

Customer service appears to have a direct impact on customer satisfaction and organizational attachment (Chau and Kao, 2009). Customer satisfaction is now regarded by companies as a major component of corporate strategy (Zahorik and Rust, 1993). The key measure in determining customer satisfaction is the customer's own approach regarding services that have been provided (Zeithaml et al., 1996). The most essential feature of any service organization is customer satisfaction, which is directly proportional to the value of the services provided (Bolton and Drew, 1991). High customer satisfaction results in positive behavioral outcomes like commitment, retention and generation of mutually beneficial association (bond) among the service offered and the consumer (Newman, 2001).

In service sector, financial and banking services are almost completely dependent on high customer satisfaction levels to achieve growth and competitive advantage (Mishkin, 2007). The banking sector in developing countries has undergone many changes in order to compete with global standards (Yavas et al., 1997). Significant links were found within the banking sector between quality in service and satisfaction level (Blanchard and Galloway, 1994). Banks have acknowledged that providing quality services is essential to growth and survival in the advanced international and competitive banking world (Wang et al., 2003).

Most researches / studies have concentrated on the quality of customer service in developed countries banking sector, but nowadays most studies concentrate on developing countries (Angur et al., 1999). In today's competitive environment, stability and continuous growth in service quality are keys to survival (Haq and Muhammad, 2013).

The research should draw attention in particular to the fact that while the process must be structured in compliance with international service quality standards, customer satisfaction is integrated into any strategic planning. Current studys purpose is to record the quality of service in the Pakistani banking industry.

2 Literature Review

2.1 Customer Service Quality

Customer service is considered as the main instrument of service related organization, which is achieved through the collective efforts of all functions of the organization (Stevens and Johnson, 2016). Ample research has been conducted to quantify the role of employees working in a service organization's various departments, in collectively providing the required level of customer service (Oliva and Sterman, 2001).

Typically, quality of customer service has been defined as the overall level of customer satisfaction with the services provided (Johns, 1992). The quality of customer service is usually seen as a measure of how well the services offered suit the customer's expectations (Santos, 2003).

The value of customer service is defined as "the outcome of an evaluation process in which the users analyze their perceptions with the service that are provided" (Grönroos, 2001).

Service quality is the customers overall opinion of the deliverables that are provided as compared to the customers expectation when he initially made the purchase (Grönroos, 2001). Customer service quality is an instinctive assessment that the customer makes to assess service quality that they would like to obtain as compared to what they really acquire (Gefen, 2002).

2.2 Customer Satisfaction

Customer satisfaction usually means achieving the degree of satisfaction that consumers expect after making their purchase (Oliver, 1997). The customers opinion of any services meeting his/her requirements, which were purchased from the same brand in the past, consequently motivating him/her to repeat the purchase again; or where he/she may consider becoming a potential buyer of the service from the same brand again at any time in future is known as supremacy of satisfaction (Loudon and Bitta, 1993).

Customer satisfaction is the foundation of competitive advantage for organizations and firms (Anderson et al., 1994). Zeithaml et al. (2000) explained that customer satisfaction is the measurement of customer needs, needs and preferences of services or products. Literature on customer satisfaction clearly shows that expectations are the most unchanging determinant of satisfaction and perceived quality (Kim, 2005).

The value perception theory states that satisfaction is an emotional reaction triggered by a system of cognitive assessment (Parker and Mathews, 2001). It was initially pointed out that happiness is correlated with goals met by success and disappointment arises when performance falls below expectations (Swan and Combs, 1976).

Theories of customer service quality and related practical results documented have established customer satisfaction as an almost tangible outcome rather than an unclear concept. Demonstration of satisfaction varies between individuals and items. Effective customer satisfaction almost invariably leads to repeat business for the service provider whether through the same customer or through recommendation to another potential buyer (Munteanu et al., 2010). This substantial benefit of providing quality customer service can be reliably measured, invoked and utilized in the form of business generated goodwill (ibid).

2.3 Customer Service Quality and Customer satisfaction

Performance of customer service and customer satisfaction are closely linked and considered directly proportional to one another (Chuah and Sri Ramalu, 2011). The assessment of products and services with the desired quality and standards after purchase is known as satisfaction (Kotler and Armstrong, 2012). Customer service is always applicable to achieve a high level of customer satisfaction, which is why reliability of customer service is generally considered a metric of satisfaction (Alolayyan et al., 2018; Gilbert and Veloutsou, 2006; Lee et al., 2000). Service quality is one of the most crucial factors of satisfaction. The most effective metric for assessing contentment of customer is performance of service quality (Kadir et al., 2011).

Although there is no evidence of any substantial correlation between observable revenue from the service environment and customer satisfaction, it is generally measured as the goodwill created by any company that has the potential to increase or attract more customers in the future (Jamal and Naser, 2002). These conclusions are in comparison with past research done by Wakefield and Blodgett (1999), and endorsed by Parasuraman et al. (1991). Customer service

quality was accepted by a majority of researchers as a guide to customer satisfaction (Kassim and Abdullah, 2010; Kumar et al., 2010; Parasuraman et al., 1985). Expectations provide foundation for determining customers satisfaction (Oliver, 1997). Furthermore, expectations include information regarding probability of repurchase and future quality which will affect satisfaction level (Anderson et al., 1994).

Furthermore, multiple studies have shown that consistency of customer service has greater influence on satisfaction level of customer than expected expectations prior to purchase (Anderson and Sullivan, 1993). Quality customer service has a detrimental effect on customer satisfaction (Yee et al., 2008). Customer satisfaction is in fact considered a precedent of the quality of customer service (Bolton and Drew, 1991). The possible explanation given by Beerli et al. (2004) is that the idea of customer satisfaction is a measure of the value for money that the customer understands.

Although recent research has determined that customer perceptions may be challenged and modified by the services provided. The customer may not always be right as opposed to the age old slogan. The customer may not even be aware of what their requirements are and must be educated as to what he really needs as opposed to what he wants. Customer service quality almost invariably leads to greater levels of customer satisfaction with any product or service that is provided to the customer even if product or service is not what the customer initially asked for. In short, the customer service quality modifies or changes the customers requirements and reorients him towards the product or service that is provided versus the ones he initially set out to purchase.

2.4 Theoretical Framework

Figure represents the study's conceptual frame work. This study has one independent variable customer service quality with five dimensions (Tangibility, Reliability, Responsiveness, Assurance and Empathy) and a dependent, customer satisfaction variable)

2.5 Customer Service Quality

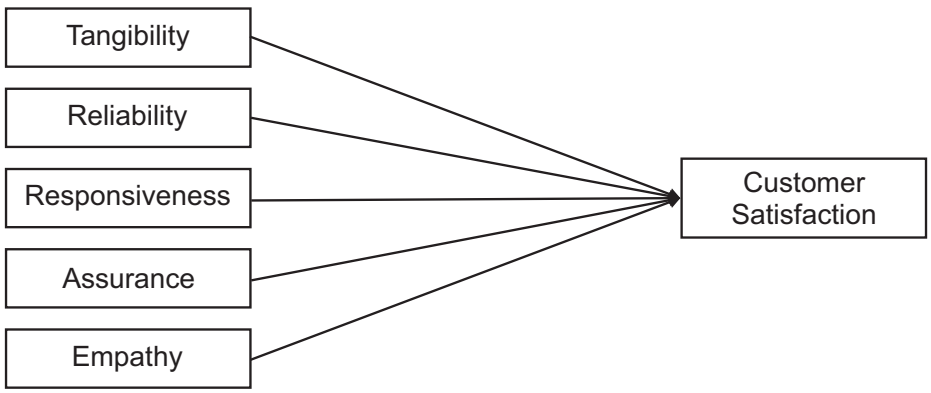

Figure 1: Theoretical Framework

3 Research Methodology

3.1 Population and Sample

This research study considered all the private banks of Peshawar as population. The sampling units from the total population were selected through simple random sampling technique. The four banks were selected from the entire population i.e. Allied Bank Limited (ABL), Habib Bank Limited (HBL), MCB Bank Limited (MCB), United Bank Limited (UBL). The unit of analysis by equal proportion of 50 respondents and total 200 respondents were selected from the four private sector banks through convince sampling technique for the possible explanation of generalization of the selected sample.

3.2 Instruments

Questionnaires were the instrument for collecting data for this research project. Close ended questionnaires were used and divided into two subdivisions. The demographic section covered customers of banks age, education, gender and occupation. Variable section covered the responses of customers to the variables chosen for this study. Tangibility, reliability, responsiveness, assurance and empathy collectively Service quality measures were adapted from Cronin Jr and Taylor (1992); Grönroos (2001); Zeithaml et al. (1988), respectively. Customer satisfaction measures are adapted from Anderson and Zeithaml (1984); Cronin Jr and Taylor (1992); Jamal and Naser (2002); Yee et al. (2008); Zeithaml et al. (1988).

Descriptive statistics, Reliability assessment and Regression analysis has been used as statistical tools for this research.

4 Results and Discussion

4.1 Reliability Valuation

Internal constancy is a substantial issue when adapted scale is used in research study. As Streiner (2003) pointed that classical test theory has one of the essential tenets that measurement parameters should have a high extent of internal stability that is suggested by Cronbachs alpha. As per the table 1, the Cronbachs alpha values of the construct show that the instruments used were reliable as the values exceed 0.70.

4.2 Simple Linear Regression

Table 2 shows and explains the relevant model to define connection between quality of customer service and satisfaction level of customer. R value is 0.805, indicating a moderate level of customer satisfaction connection / correlation with customer service constructs. Value of R2 0.647 which shows 64.7% deviation in dependent variable has been described by independent variable.

4.3 Coefficient values of the model

Table 4 shows details regarding Customer Service Quality variables. Its identifiable that the constant and customer service quality significantly contribute as the values p.000 which

Table 4.1: Correlation Analysis

Constructs	No. of Items	Cronbach's Alpha
Reliability	5	0.701
Assurance	4	0.832
Tangibility	4	0.798
Empathy	4	0.833
Responsiveness	3	0.737
Customer Service Quality	20	0.859
Customer Satisfaction	4	0.760

Table 4.2:

Model	R	R Square	Adjt. R square	Std. error
1	0.805	0.647	0.646	0.29437

was $<$ .05 to the model. Customer service quality was a substantial interpreter (t=19.069, p= .000) of customer satisfaction concept. Customer service quality coefficient explains directly proportional association between dependent and independent variables.

Table 4.3:

	Unstandardized coefficients		Standardized coefficients		
Model	B	Std. Error	Beta	t	Sig.
Constant	0.25	0.192	—	1.299	0.196
Customer Service Quality	0.965	0.051	0.805	19.069	0

Table 4 indicates that coefficient of customer service quality is positive, which shows factual relationship exists between variables. Furthermore, p & t-ratio for customer service quality is less than 0.05 indicating that customer service quality significantly effects customer satisfaction.

4.4 Multiple Regression Analysis

Multiple Regression model shows 65% of disparity in Customer Satisfaction has been elaborated by independent variable Assurance, Responsiveness, Tangibility, Reliability, Empathy is showed according to the R2 value.

Table 6 shows positive value of each variable as well as significance value of each variable separately.

Table 4.4: Multiple Regression Analysis

Model	R	R Square	Adujsted R Square	Std. Error of the Estimate
1	0.806a	0.65	0.641	0.29636

a. Predictors: (Constant), ASU (Assurance), RES (Responsiveness), TAN (Tangibility), REL (Reliability), EMP (Empathy).

Table 4.5:

Model	Unstandardized Coefficients		Standardized Coefficients	t-ratio	P-v.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.279	0.198	—–	1.409	0.16	—–	—-
Reliability	0.208	0.041	0.269	5.029	0	0.63	1.588
Responsiveness	0.162	0.033	0.219	4.906	0	0.904	1.106
Empathy	0.231	0.049	0.254	4.679	0	0.613	1.631
Tangibility	0.183	0.041	0.215	4.44	0	0.768	1.301
Assurance	0.176	0.053	0.196	3.335	0	0.521	1.918

The coefficient of various aspects of customer service quality is shown in Table 6. This shows that each aspect of customer service quality is linked to customer satisfaction positively and significantly (p¡0.05). In addition, positive change in any of the customer service quality dimensions will greatly enhance / increase customer satisfaction.

Furthermore, the values of tolerance and VIF suggest that there is no problem of multi collinearity in independent variable considered in the study.

4.5 Hypothesis Assessments

Table 7 shows that null hypothesis are rejected while alternate hypotheses are accepted in relation with the results of this study.

5 Conclusion and Future Directions

5.1 Conclusion

Purpose of current study was to attain better understanding of Customer Service Quality that is used for customer gratification in different private sector banks located in Peshawar. This study has been carried out through a literature review which led to the frame of reference and gathering of data. This study tries to find the essential features in the banking environment that can be acclimatized to analyze banks ' strengths as encountered by customers. Responsiveness and empathy unveil uppermost affirmative association with customer satisfaction. The basic

Table 4.6:

Hypotheses	β value, sig.	Comments
H_1: There is positive and significant effect of Customer Service Quality on Customer Satisfaction.	0.805, .000	Accepted
H_2: There is positive and significant effect of Tangibility on Customer Satisfaction.	0.215, .000	Accepted
H_3: There is a positive and significant effect of Reliability on Customer Satisfaction.	0.269, .000	Accepted
H_4: There is positive and significant effect of Responsiveness on Customer Satisfaction.	0.219, .000	Accepted
H_5: There is positive and significant effect of Assurance on Customer Satisfaction.	0.196, .001	Accepted
H_6: There is positive and significant effect of Empathy on Customer Satisfaction.	0.254, .000	Accepted

and fundamental perception of responsiveness and empathy is interaction between employees and customer with care and attention. In banking services employees perform major role. To satisfy customers the role of frontline staff becomes immensely vital cause of direct interaction with the customers. Employees should know the value of their job in service deliverance. Human resources aspects should be assured by authorities that they are managed perfectly by staff for service delivery. Moreover Tangibility aspect faced a lot of neutrality which means customer didnt observe the environment overwhelmed. Banks should work on their tangible aspects and ensure pleasant environment for the customers. Overall customers were happy with their banks and demonstrated constructive connection among all customer service quality traits and customer satisfaction.

5.2 Future Directions

Service quality effect needs be examined with other variables like customer loyalty, constructive word of mouth well as customer retention, etc. in Peshawar domain.

The prime motive of Pakistani financial institution business strategy should be the deliverance of best quality of services because customer service quality is the key element of customer satisfaction.

To evaluate customer service quality in Pakistani banks SERVQUAL should be used as an instrument of measurement by banks managers to calculate service quality. SERVQUAL is a reliable tool for determining service quality in Pakistani perspective.

To educate employees with the understanding of service customs and service supremacy banking sector need to allocate budgets and formulate strategies regarding employee training and development programs. Face-to-face or we can call it interpersonal communication and customer care factors in employees training and development programs should be paid a lot of attention in order to achieve the customers desires for personalized services.

References

Alolayyan, M. N., Al-Hawary, S. I. S., Mohammad, A. A. S., and Al-Nady, B. A.-H. A. (2018). Banking service quality provided by commercial banks and customer satisfaction. a structural equation modelling approaches. *International Journal of Productivity and Quality Management*, 24(4):543–565.

Anderson, C. R. and Zeithaml, C. P. (1984). Stage of the product life cycle, business strategy, and business performance. *Academy of Management journal*, 27(1):5–24.

Anderson, E. W., Fornell, C., and Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from sweden. *Journal of marketing*, 58(3):53–66.

Anderson, E. W. and Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing science*, 12(2):125–143.

Angur, M. G., Nataraajan, R., and Jahera, J. S. (1999). Service quality in the banking industry: an assessment in a developing economy. *International journal of bank marketing*.

Beerli, A., Martin, J. D., and Quintana, A. (2004). A model of customer loyalty in the retail banking market. *European journal of marketing*.

Bharati, P. and Berg, D. (2005). Service quality from the other side: Information systems management at duquesne light. *International Journal of Information Management*, 25(4):367–380.

Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of marketing*, 56(2):57–71.

Blanchard, R. and Galloway, R. (1994). Quality in retail banking. *International Journal of Service Industry Management*.

Bolton, R. N. and Drew, J. H. (1991). A multistage model of customers' assessments of service quality and value. *Journal of consumer research*, 17(4):375–384.

Chau, V. S. and Kao, Y.-Y. (2009). Bridge over troubled water or long and winding road? *Managing Service Quality: An International Journal*.

Chuah, C. W. and Sri Ramalu, S. (2011). Students satisfaction towards the university: Does service quality matters? *International Journal of Education*, 3(2):1–15.

Cronin Jr, J. J. and Taylor, S. A. (1992). Measuring service quality: a reexamination and extension. *Journal of marketing*, 56(3):55–68.

Gefen, D. (2002). Customer loyalty in e-commerce. *Journal of the association for information systems*, 3(1):2.

Gilbert, G. R. and Veloutsou, C. (2006). A cross-industry comparison of customer satisfaction. *Journal of services marketing*.

Grönroos, C. (2001). The perceived service quality concept–a mistake? *Managing Service Quality: An International Journal*.

Haq, W. and Muhammad, B. (2013). Customer satisfaction: A comparison of public and private banks of pakistan. In *Proceedings of the Sixth International Conference on Management Science and Engineering Management*, pages 515–523. Springer.

Jamal, A. and Naser, K. (2002). Customer satisfaction and retail banking: an assessment of some of the key antecedents of customer satisfaction in retail banking. *International journal of bank marketing*.

Johns, N. (1992). Quality management in the hospitality industry: Part 1. definition and specification. *International Journal of Contemporary Hospitality Management*.

Kadir, H. A., Rahmani, N., and Masinaei, R. (2011). Impacts of service quality on customer satisfaction: study of online banking and atm services in malaysia. *International Journal of Trade, Economics and Finance*, 2(1):1.

Kassim, N. and Abdullah, N. A. (2010). The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings. *Asia pacific journal of marketing and logistics*.

Kim, H.-R. (2005). Developing an index of online customer satisfaction. *Journal of financial services marketing*, 10(1):49–64.

Kotler, P. and Armstrong, G. (2012). Principles of marketing 14th edition. *New Jearsey: Pearson Education Inc*.

Kumar, S. A., Mani, B., Mahalingam, S., and Vanjikovan, M. (2010). Influence of service quality on attitudinal loyalty in private retail banking: An empirical study. *IUP journal of management research*, 9(4).

Lee, H., Lee, Y., and Yoo, D. (2000). The determinants of perceived service quality and its relationship with satisfaction. *Journal of services marketing*.

Loudon, D. L. and Bitta, A. J. (1993). Consumer behavior mcgraw-hill. *Inc., New Jersey*.

Lovelock, C. H. and Lovelock, C. H. (1996). *Services marketing*. Prentice Hall Upper Saddle River, NJ.

Mishkin, F. S. (2007). *The economics of money, banking, and financial markets*. Pearson education.

Munteanu, C., Ceobanu, C., Bobâlca, C., and Anton, O. (2010). An analysis of customer satisfaction in a higher education context. *International Journal of Public Sector Management*, 23(2):124–140.

Newman, K. (2001). Interrogating servqual: a critical assessment of service quality measurement in a high street retail bank. *International journal of bank marketing*.

Oliva, R. and Sterman, J. D. (2001). Cutting corners and working overtime: Quality erosion in the service industry. *Management Science*, 47(7):894–914.

Oliver, R. L. (1997). Emotional expression in the satisfaction response. *Satisfaction: A behavioral perspective on the consumer*, 291325.

Parasuraman, A., Berry, L. L., and Zeithaml, V. A. (1991). Perceived service quality as a customer-based performance measure: An empirical examination of organizational barriers using an extended service quality model. *Human resource management*, 30(3):335–364.

Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of marketing*, 49(4):41–50.

Parker, C. and Mathews, B. P. (2001). Customer satisfaction: contrasting academic and consumers interpretations. *Marketing Intelligence & Planning*.

Prahalad, C. K., Ramaswamy, V., et al. (2000). Co-opting customer competence. *Harvard business review*, 78(1):79–90.

Santos, J. (2003). E-service quality: a model of virtual service quality dimensions. *Managing Service Quality: An International Journal*.

Stevens, G. C. and Johnson, M. (2016). Integrating the supply chain 25 years on. *International Journal of Physical Distribution & Logistics Management*.

Streiner, D. L. (2003). Being inconsistent about consistency: When coefficient alpha does and doesn't matter. *Journal of personality assessment*, 80(3):217–222.

Swan, J. E. and Combs, L. J. (1976). Product performance and consumer satisfaction: A new concept: An empirical study examines the influence of physical and psychological dimensions of product performance on consumer satisfaction. *Journal of marketing*, 40(2):25–33.

Taylor, S. A. and Baker, T. L. (1994). An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions. *Journal of retailing*, 70(2):163–178.

Wakefield, K. L. and Blodgett, J. G. (1999). Customer response to intangible and tangible service factors. *Psychology & Marketing*, 16(1):51–68.

Wang, Y., Lo, H.-P., and Hui, Y. V. (2003). The antecedents of service quality and product quality and their influences on bank reputation: evidence from the banking industry in china. *Managing Service Quality: An International Journal*.

Wisniewski, M. (2001). Using servqual to assess customer satisfaction with public sector services. *Managing Service Quality: An International Journal*.

Yavas, U., Bilgin, Z., and Shemwell, D. J. (1997). Service quality in the banking sector in an emerging economy: a consumer survey. *International journal of bank marketing*.

Yee, R. W., Yeung, A. C., and Cheng, T. E. (2008). The impact of employee satisfaction on quality and profitability in high-contact service industries. *Journal of operations management*, 26(5):651–668.

Yoo, D. K. and Park, J. A. (2007). Perceived service quality. *International Journal of Quality & reliability management*.

Zahorik, A. J. and Rust, R. T. (1993). Customer satisfaction, customer retention, and market share. *Journal of retailing*, 69(2):193–215.

Zeithaml, V. A., Berry, L. L., and Parasuraman, A. (1988). Servqual: a multiple-item scale for measuring consumer perceptions of service quality. *Journal of retailing*, 64(1):12–40.

Zeithaml, V. A., Bitner, M. J., and Gremler, D. (1996). Services marketing. new york: Mcgrawhill.

Zeithaml, V. A., Bitner, M. J., Gremler, D. D., and Pandit, A. (2000). Services marketing: Integrating customer focus across the firm.

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 44-63

The Effect of Internal Communication, Conflict, Leader Support and Employee Satisfaction on Supply Chain Integration

Muhammad Imtiaz*[1] & Mian Ali Naimat Pervaiz[2]

[1,2]*PUTRA Business School, University Putra Malaysia, Malaysia*

Abstract. The aim of the study is to find out and improve the strength of supply chain integration thorough testing the effect of antecedents on Supply Chain Integration (SCI). SCI is a key element for improving supply chain performance and competitiveness. The population of the study is manufacturing concerns and data were collected from the managers. The study investigates the hypotheses that internal communication, leader support and employee satisfaction have a positive and significant effect on internal integration but the conflict negatively influences the internal integration. Internal integration subsequently influences external integration. Secondly, the direct impact of internal communication and employee satisfaction on external integration is also tested. The finding shows, all the hypotheses are accepted except one. As well as managerial implications are concerned, managers should equally focus on employee satisfaction and internal communication to have better external integration.

Key words: Internal Communication, Conflict, Leader Support, Employee Satisfaction, Supply Chain integration.

1 Introduction

The word Supply Chain Management was used as a concept in literature in the mid-1980s however the fundamental assumptions on which SCM is based are older (Cooper et al., 1997). The literature reported that there are two types of Supply Chain Integration (SCI) internal integration and external integration (Narasimhan and Kim, 2002; Swink et al., 2007). Internal integration refers to departments and functions within an organization work as a single cohesive process (Flynn et al., 2010) and External integration refers to formal programs facilitating to the linkage between the trading partners of the supply chain (Jacobs et al., 2016).

This study suggests to managers and firms by finding relationships between antecedents of internal integration to have better external integration and ultimately performance (Jacobs et al., 2016). Practitioners and researchers considered that SCI is important for the success of a firm (Flynn et al., 2010; Prajogo and Olhager, 2012).

Internal integration is also the source of firm performance with its antecedents, leader support, internal communication and conflict (Hieu, 2014). Internal integration significantly has

*Corresponding author.
Email: imtiaz513.pk@gmail.com

a positive effect on external integration with its antecedents; internal communication and employee satisfaction (Jacobs et al., 2016).

Few researchers first time studied the internal communication in the context SCI (internal and external integration). They filled the research gap by providing empirical evidence that internal communication plays a significant role in enhancing internal and external integration with customers and suppliers (Jacobs et al., 2016). This is the first study evaluating the importance of conflict and leader support on SCI context. This study fills the gap by offering the empirical evidence that leader support significantly enhances the SCI and Conflict negatively affect the SCI. Secondly, empirically proved that employee satisfaction is important than internal communication in the sense of external integration.

The aim of the study is to find the strength of SCI and try to improve integration. The objectives are to find out the antecedent role of Internal communication, Conflict, Leader support and employee satisfaction on internal Integration. Secondly, explore the direct effect of internal communication & employee satisfaction on external integration. Moreover, it offers a theoretical and contextual contribution. Independent variables are studied through different theories and further this study is conducted in a Pakistani context where supply chain management is growing rapidly.

This study addressed the following questions what are the effects of internal organizational communication, conflict, leader support and employees satisfaction on internal integration and what are the direct effects of internal organizational communication and employee satisfaction on external integration. Previous research offered two variables internal communication and employees satisfaction as factors effecting to internal integration (Jacobs et al., 2016) and offered a research gap to add more antecedents to internal integration. To fulfil the research gap we have added two more antecedents, conflict and leader support. Conflict always exists within the organization when employees communicate vertically in the hierarchy with each other. To resolve the conflict, leader support is required. Thats why the author has been putting leader support after the conflict in the research model of this study. The author has brought these two antecedents through social capital theory, social conflict theory and transformational leadership theory.

Internal communication is the first antecedent of internal integration. The researcher considers communication as a source of integration (Pagell, 2004). The focus of this study is internal integration and it is a vital antecedent to external integration. The construct internal communication has studied with the help of social capital theory. Supply chain management is the source of customer value but if it is integrated well then Internal communication is suitable antecedents to internal integration along with conflict, leader support and employee satisfaction. These antecedents make supply chain well integrated.

The second antecedent in the framework is conflict. Conflict means disagreement. Conflict may exist between two or more persons within society. As it is found in society therefore it has been studied in the context of an organization because ultimately an organization is the part of society. Conflict is a barrier to the strength of supply chain integration (Stevens, 1989). The researcher reported the conflict in two parts i.e. functional conflict and dysfunctional conflict (Hieu, 2014). Functional conflict is used in a positive sense but this study represents the dysfunctional conflict; Dysfunctional conflict refers to disagreement but on the basis of hostility. When employees communicate within an organization the conflict must exist there, then there is the need of leader support for the strength of supply chain integration. Leader support has a direct and positive impact on internal integration that is why this is the third antecedent to integration. The author has studies this construct with the help of two theories i.e. social capital

theory and transformation leadership theory.

Previous research reported that internal communication is the cause of employee satisfaction (Jacobs et al., 2016). Literature also reported that employees are treated as social agents who communicate widely not only between functions but also with suppliers and customers. When employees communicate widely it directly affects to remove hurdles in understanding the direction (objectives of departments and organization) and ultimately lead to employees satisfaction. A satisfied employee is tending to indulge in serving better than unsatisfied employees (Yee et al., 2008).

As literature was unable to provide support in the mentioned relationships, the impact of antecedent: internal communication, conflict, leader support and employee satisfaction on internal integration in supply chain integration with suppliers and customers but Jacobs et al. (2016) first time provided the platform for future research on supply chain integration with supplier and customers along with two antecedent (Jacobs et al., 2016).

The current studied investigates the direct relationship of internal integration on external integration, Meanwhile, claimed and proved that when internal communication, leader support and employees satisfaction increases between functions (departments) it improves the strength of internal integration which positively impact on external integration with greater strength.

The framework is analyzed through a survey questionnaire. Population for this research is manufacturing concerns. The sample size is 221 and non-probability, convenient judgmental and snowball sampling techniques are used. Before that data collection, experts views are also considered. Data is collected from the manager of the production department, purchase department, Sale and marketing, distribution, inbound logistics and outbound logistics. Cross-sectional Study is performed because the author studied the different firms at a single time. The seven-point Likert scale is used in the questionnaire and the scale is totally adopted from the literature (Hieu, 2014; Jacobs et al., 2016). They had performed the reliability test for the scale. Even the questionnaire is adopted but Content validity is performed in this study. Face validity is assured by the experts of linguistics. Finally, data were collected from different manufacturing concerns in Gujranwala, Lahore and Sialkot.

Smart PLS-SEM is used for data analysis all reliability and validity test has performed and found significant results regarding hypothesis t-Test is used which revealed the following results, H1a, H2, H3, H4a, H4b and H5 are accepted because their t values are more than 1.645 and H1b is rejected as its t value is .97. The results are about similar but also having contradiction point. Previous research gave preference to internal communication on employee satisfaction but this study changes the parameters of thinking. It argued that employee satisfaction has a direct impact on external integration and gives preference to employee satisfaction.

2 Theoretical Background and Hypotheses Development

This is the core part of research as it represents all the theories and variables used in this research. Proper justifications are supported for variables.

2.1 Social Capital Theory

Social capital theory talks about social capital which further refers to social structure and social assets. Social structure enables the actions of social actors (employees or departmental units). Social assets are generated through interaction among social actors (Inkpen and Tsang,

2005; Nahapiet and Ghoshal, 1998). Researchers explained the importance of social capital and provided a clear framework (Coleman, 1988; Richardson, 1986). They have performed empirical analysis on it and gave a platform for operationalizing it for further research.

"Social capital is defined by its function; it is not a single entity, but a variety of different entities having characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure" (Coleman, 1990).

Literature provides an extensive view of social capital, which includes future benefits by expanding the relationships between social actors e.g. employees or departments (Jacobs et al., 2016). Social actors derive benefits from social structure and social assets. This study implements the above mentioned extensive view of organizations. Organization systems are a social structure which enables actions between social actors. When social actors interact with each other then social assets come into existence and "internal communication" is one of these social assets (Inkpen and Tsang, 2005). Other social assets conflicts, Leader support and employee satisfaction are also the result of interaction between social actors. Under the social structure of any organization, social assets achieve benefits like "Supply Chain Integration" (Autry and Griffis, 2008).

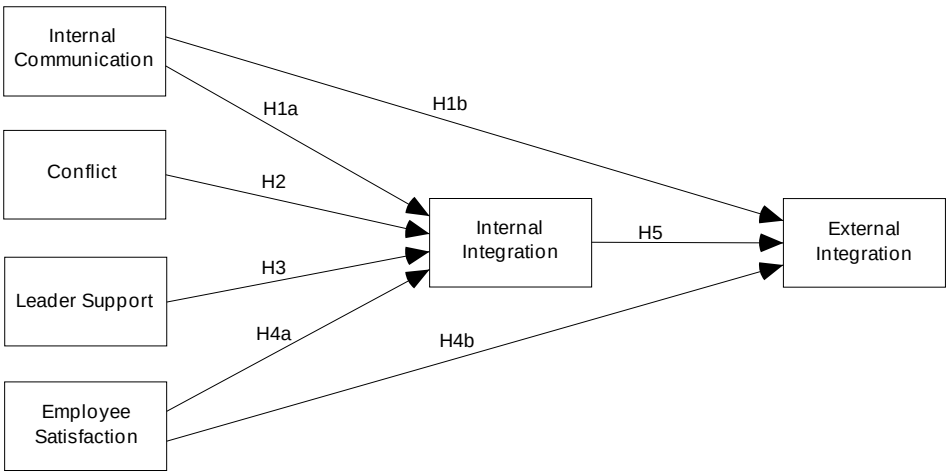

Figure 1: Research Model

From literature and social capital theory, this study has drawn a framework. This model is based on internal and external integration; the research model from the base paper was being consisted only on two independent variables (internal communication and employee satisfaction) and two dependent variables (Internal integration and external integration). They claimed in their study that first time in literature they have offered the effect of internal communication on external integration with suppliers and customers (Jacobs et al., 2016). To fulfil the research gap, the current has added two more antecedents (Conflict and Leader support) to internal integration in the previous model. All these antecedents have not been studied before collectively. This collective model is tested in the Pakistani context. We have added the conflict and leader support as antecedent to internal integration through social capital theory, Social conflict theory and transformational leadership theory. Fig. 1 is showing the model of this study along with

hypotheses.

2.2 Effects of Internal Communication

Communication within the organization exits between departments or employee and it may be formal or informal. Formal communication means, exchanging information between departments or employee under organized meetings whereas informal communication leads to unorganized and unarranged meetings (Le Meunier-FitzHugh and Piercy, 2007). In the current study, the focus is on internal and external integration. Internal communication has a positive and direct effect on external integration (Jacobs et al., 2016).

In todays continuously changing environment, organizational competition has been converted to supply chain based competition (Fernandes et al., 2017). Internal supply chain partners need a strong relationship with external social actors. Under the social capital theory, social actors become the cause of social assets like internal communication which further generates benefits for overall organization, for example, trust, relational norms and information sharing (Tourish and Hargie, 1996). It is proved, in fact, internal communication has a direct effect on internal integration. Therefore in this study, we have also checked the direct impact of internal communication on external integration. In this regard, literature proposes the following hypothesis:

H_1a: Internal organizational communication has a significant positive effect on internal integration.
H_1b: Internal organizational communication has a significant positive effect on external integration.

2.3 Conflict and Internal Integration

In simple words, conflict is the disagreement from important ideas. Conflict exists within the organization and forecasts as producing negative outcomes (Hieu, 2014). Conflict is proved as problematic between supply chain partners (Dong et al., 2016).

This relationship based on this variable is brought with the help of two theories, social capital and social conflict theory. the social capital theory is utilized to talk about conflict generally but it gives the beginning to the conflict in an organization. As mentioned above social capital theory talks about social structure, social assets and social benefits. Social structure is a platform for actors (employees) within an organization and social actors interact with each other and a social asset Conflict comes into existence. Conflict may exist by any disagreement during internal communication. Social conflict theory talks about the behaviour of social groups i.e. (rich, poor). Powerful people in groups always try to get more power and pushing down the lower ones, therefore, they meet with each other on the basis of conflict not on consensus. Almost every organization has a hierarchy level consisting of top management, middle-level management and lower-level management, this division is the same as the social groups offered by social conflict theory. In an organization, conflict may exit vertically or horizontally but vertical conflict tends to more badly than horizontal conflict because the downward pressure of communication in the hierarchy of organization has more power of exploitation of subordinates.

Literature reports the conflict in two parts functional or dysfunctional conflict (Pelled, 1996). Functional conflict leads to improvement in performance whereas dysfunctional conflict became the cause of diminishing it (Prajogo and Olhager, 2012). This study also tests the relationship between dysfunctional conflict and internal integration which further has an impact on external integration. Literature supports the positive hypothesis (Hieu, 2014) but the author has studied the negative impact of conflict through social conflict theory and offers below-mentioned

hypothesis.

H_2: Internal dysfunctional conflict negatively influences internal integration.

2.4 Leader Support and Internal Integration

Literature divulges many leadership behaviours for organizational support (Lee et al., 2010; Srivastava et al., 2006). Leader support has a direct effect on internal integration (Hieu, 2014). Leader job is to provide a medium to a team member for easy sharing of beneficial information.

The construct leader support is derived from the mixture of two theories, Social capital theory and transformational leadership theory. According to social capital theory, when employees interact with each other they start following those ones who inspired them therefore transformational leadership theory explains, He/she is the leader who inspired the others with great vision and passion. Leader injects the energy in subordinates to perform tasks and then supports them.

The conflict has a negative impact on internal integration therefore leader support plays an important role to fill this gap between employees to improve integration (Le Meunier-FitzHugh and Piercy, 2007). Leader support can change the direction of employees satisfaction level for the betterment of supply chain integration. This study shows the direct impact of leader support on internal integration. We have adopted the hypothesis due to lake of literature support on this variable in the context of internal and external integration (Hieu, 2014).

H_3: Leader support has a significant and positive effect on internal integration.

2.5 Role of Employee Satisfaction in SCI

Most of the researchers considered employee job satisfaction as the most important element in their researches (Alegre et al., 2016). Employees are social actors because satisfied employees are more indulged in providing better service quality (Yee et al., 2008). Previous research has studied the direct and indirect impact of employee satisfaction on SCI. After the data analysis, they argued that employee satisfaction has an only direct impact on internal integration not on external integration (Jacobs et al., 2016).

Findings are associated with social capital theory as it talks about the interaction between social actors which leads to benefits (service quality and customer satisfaction) as output. These responses already have tested in various contexts like areas related to organizational liabilities toward supply chain integration. Jacobs et al suggested using these relationships in the way that, coordination between employees increases when employees are satisfied which further amplify the relationships with trading partners (Jacobs et al., 2016).

In order to give the right direction to the relationship of employee satisfaction, the base paper has studied employee satisfaction as an antecedent of internal integration. He has divided impact of employee satisfaction on external integration in two paths, first, he purposed the positive direct impact of employee satisfaction on external integration and secondly the positive impact through internal integration on organizational external integration. As a result of his study, he argued that employee satisfaction has an only direct impact on internal integration. He rejected his hypothesis regarding the direct impact on external integration (Jacobs et al., 2016).

This paper studied the same relationship of employee satisfaction on SCI as mentioned in the base paper. The author used the same relationship because he expected different results in a different context. Again The first impact is as an antecedent to internal integration and second direct impact of employee satisfaction on external integration (Jacobs et al., 2016) is tested in

Pakistan. Hypotheses are also adopted from above-mentioned base paper because of the same relationship.

In this regard, Literature purposed the following hypotheses:

H_4a: Employee Satisfaction has a significant and positive effect on internal integration.

H_4b: Employee Satisfaction has a significant and positive effect on External integration.

2.6 Internal Integration and External Integration

Literature supports a wide range of arguments on supply chain integration (internal and external integration). Integration in the supply chain is a well known concept regarding the distribution of product to the customer since 1970s. Internal collaboration and external collaboration have a positive relationship but Stank et al. (2001) explained it as, "when internal collaboration increases then external collaboration increase". Collaboration between customer and supplies leads to organizational internal collaboration. Literature report this relationship in another different way internal integration leads to external integration. Latest research reports the correlation between information technology, supply chain integration and firm performance. Another viewpoint changes the way of thinking regarding integration which is Internal integration and downstream integration have a positive impact on logistics performance (Germain and Iyer, 2006). Clear visibility of the supply chain is a good source for managers in clear decision making. Companies with a minimum level of internal integration are unable to compete with other firms in the relevant industry. Literature reports the relationship between firms strategic goal and internal integration secondly between external integration and strategic goals (Chaudhuri et al., 2018; Vargas et al., 2000). Internal integration comes into existence and then external integration but social capital has a central role in this relationship (Horn et al., 2014). The further social capital theory provides three dimensions of social capital: cognitive, structural and relational capital, these social capitals dimensions collectively influence the integration. Mark A. Jacobs and Wantao Yu also studied the relationship between internal and external integration with the reference of social capital theory because this is a most prominent theory which clearly talks about social actors and social assets having social benefits for integration (Jacobs et al., 2016).

External integration comprises of Information dissemination, interconnected plans, working with suppliers and customers to solve the problems (Zhao et al., 2011). In literature vast range of researcher choose external integration rather than internal integration (Das et al., 2006; Frohlich and Westbrook, 2001). Wiengarten et al. (2014) explored external integration under the country's logistical capabilities and once again he found a significant relationship.

Latest researchers further explore the supply chain integration with different antecedents. Regarding product complexity, researchers prefer the relationship between internal integration and supplier integration rather than internal integration and customer integration. As development in the services sector, the role of internal and external integration is tested on services innovation. It is found that the customer is integrated as an active resource during the innovation process (Jonas and Roth, 2017). Few researchers investigate the direct and indirect impact of IT capabilities and marketing capabilities on supply chain management.

As mentioned above some researches considered customer integration and some are in favour of supplier integration over internal integration but some of them are focusing on internal integration than external integration. Overall a huge amount of literature supports the solid relationship between internal and external integration however some researchers considered internal integration as an antecedent to external integration (Jacobs et al., 2016). In this

study, the same relationship utilized, proposed by base studies of Jacobs et al. (2016) and Hieu (2014). He studied supply chain integration but considered the performance as the output of internal integration but in current studies, the pure relationship between internal to external integration is studied by using the combine antecedents to internal integration from Jacobs et al. (2016) and Hieu (2014). This paper has taken; internal integration and employee satisfaction as antecedents to internal integration from the literature of Jacobs et al. (2016) and remaining two antecedents; conflict and leader support have been taken from Hieu (2014) studies. Again hypothesis is adopted from literature because this variable is adopted from research of Jacobs et al. (2016). Thus this study purposes the following hypothesis.

H_5: Internal Integration has a significant and positive effect on External integration.

This chapter explained the underlying theories of this study with the theoretical background. Author has explained all variable with literature support and developed the hypothesis for the study. In chapter four this hypothesis will be tested.

3 Methodology

The framework in this study is analyzed and tested through a survey using a questionnaire under a positivist stance. The survey questionnaire was used for the purpose of data collection. Results of a new latent variable will enrich the literature with supply chain integration. All variables are tested on the base of empirical evidence to establish the platform for business researchers.

This is an Explanatory study and author studied the new phenomena (framework) to find the results. The population is manufacturing concerns because manufacturing businesses have proper SCM (suppliers and customers) but in the services business, their employees are the supplies. Unit of analysis is top-level and middle-level managers as they have better knowledge about the SCI. Convenient judgmental and snowball sampling technique used to gather the data. The study is analyzed on 221 sample size because literature reports it should be from 100 to 200 (**?**). The author used 221 sample sizes because the base paper also received 221 respondents. For data analysis, Smart-PLS software is used as we have small sample size and abnormal distribution of data.

3.1 Population

As this study is on supply chain integration, the population is educated which can understand the concepts and complexity of the supply chain. The population is manufacturing concerns. To retain the beauty of previous research on supply chain integration, the population is diversified. The population of this study consists of the manufacturer from Plastic furniture, ceramics, sports products, textile, pharmaceutical and packages further all were engaged in sales & marketing, distribution, Production, Purchases, inbound logistics and outbound logistic for production of tangible products.

3.2 Sample Size

For the purpose of data collection, the sample size for this study is 221. We sent 350 questionnaires and received only 229 filled questionnaire 8 questionnaire were not satisfactory and were removed therefore 221 responses are analyzed. Previous research also received 221 filled

responses (Jacobs et al., 2016). Literature suggests that the sample size may depend on the number of arrows pointing towards the latent variables and in this study there are 7 arrows pointing towards the latent variable which suggest that the minimum sample size should be 80 strictly but should go for more than 100 or 200 because it is usually a good start for carrying out path modeling (Hoyle, 1995; Wong, 2013).

3.3 Sampling Technique

In this study, we have used the sampling techniques on the basis of availability and accuracy of data. Author have used the non-probability sampling techniques and further convenient judgmental and snowball sampling technique. The author collected the data from Gujranwala, Lahore and Sialkot because these are the industrial cities of Pakistan. For the purpose of data, collection author took the expert view in order to gather the data from the right employee and organization. We have selected those business concerns which are having proper training schedules for employees on the basis of different departments. Trained employees are well aware of the organization regarding goals and objectives. After getting the responses from one firm the author had been asked for a close reference from them.

3.4 Unit of Analysis and Study Type

The managers of manufacturing concerns are selected as a unit of analysis. Production managers, Purchase managers, Sale managers, Supply chain managers, Outbound and inbound logistics managers, Distribution managers are selected. We have selected these positions because they are directly connected with the movement of product between functions and secondly they are well aware of supply chain integration and have the ability to understand the complexities if SCI (Droge et al., 2004). The author has not studied a few management positions for example; Accounts managers, finance managers and HR managers because they are not directly connected with the product. Literature provides a vast range of study types which can be adopted on the basis of characteristics of the study. This is a cross-sectional study. It refers to the observation of the collection of people at a single time and we have collated the data at a single time.

3.5 Measures

The seven-point Likert scale is used in the questionnaire and the questionnaire is adopted from the literature. The email was generating in order to get permission to use the questionnaire.

The base research paper had been using the questionnaire after the amendments and they had also performed the reliability tests.

For measuring the internal communication in the base article (Jacobs et al., 2016). They drew it from Powell and Dent-Micallef, 1997 and used the seven-point Likert scale because they were in favor of communication within the departments. communication leads to employee satisfaction. Employee satisfaction is also tested under a 7 points Likert scale and drawn from Heskett et al. (1994); Kassinis and Soteriou (2003). 1 represents the (strongly disagree) and 7 (strongly agree). For dysfunctional conflict, we have adopted the questionnaire form Hieu (2014). They also express the dysfunctional conflict as it always has a negative impact on internal integration. To reduce the effect of conflict, leader support has been drawn from the literature. The questionnaire for these two items drawn respectively from Le Meunier-FitzHugh and Piercy (2007);

Mollenkopf et al. (2000). CFA tests were performed by them and found the significant result. Cronbachs alpha coefficient and composite reliability of the constructs is more than the benchmark value 0.07 (Fornell and Larcker, 1981), which refers to the reliability of the questionnaire.

3.6 Content Validity and Face Validity

Content Validity is performed in two different phases. First, it is tested through discussion with experts, they offer some changes and the researcher should accept these suggestions. Secondly, it is tested through data analysis software.

In this research, the scale is completely adopted from two research papers. Scales of construct regarding internal communication, Employee satisfaction, internal integration and external integration are adopted from Jacobs et al. (2016) and Scales of Conflict and leader support are taken from Hieu (2014). Both researchers have performed all the validity tests and then developed the scales. The author used these scales to test his research model but after little bit changes of words of an item under the supervision of an expert of the field. The face validity is assured in thesis by the discussion with experts of the field of linguistics. The author met two people for this purpose. They recommended some changes and author accepted their recommendations.

3.7 Data Collection Procedure

In order to collect the data we used a convenient judgmental and snowball sampling technique. During data collection from a Strategic Business Units (SBUs) authors ask them to refer us to the next firm. Before the collection of data, it was being made sure that firms are working under proper SC management system.

Data collection was started from BOSS Furniture Gujranwala. On the basis of strong reference data was collected very easily without any delay. As Gujranwala is famous for ceramics therefore 30 questionnaires were collected and Master tiles is foremost of them.

In Sialkot, city data was collected from Awan sports which is one of the big sports firms. Proper permission was taken for this purpose.

In the meanwhile, author sent the question to Bareezya textile unit in Lahore. The questionnaire was sent by email and they took prints and distributed among the managers. The filled questioner was received by author by courier. 36 questionnaires were collected from Plastic and furniture, 33 from textile, 86 from pharmaceutical and medical, 40 from sports, 13 from packages production and 13 from food industries.

3.7.1 Ethical Considerations

Researcher refers to some points to be discussed in a research paper (Bryman and Bell, 2007). To ensure the ethical consideration the author has discussed with research participants they will not be subjected to harm in any ways whatsoever. Their respect for dignity will be prioritized. The author has attained the full consent of the respondent before the data collection.

4 Results and Data Analysis

This chapter contains an interpretation of the result. It is a most critical part of the study.

For analysis purpose, the smart PLS-SEM techniques and t-statistics have been used to measure the validity of measurement models and hypothesis testing. Measurement scales for all

variables are adopted (Hieu, 2014; Jacobs et al., 2016) and validity and reliability are measured. Hypotheses are tested after validity tests. There is a good range of statistical software but PLS-SEM is used because it performs validity tests for reflective models (Haenlein and Kaplan, 2004; Petter et al., 2007).

The second reason to use PLS-SEM is that it does not have any condition regarding the normality of data as it can perform statically tests on both types of distribution of data.

4.1 Missing Values

As PLS is also comprehensive software it offers a suitable solution for missing values but conditionally, only if missing values is less than 5%. It fills the missing values by the mean values of the valid values of the same variables (Sarstedt et al., 2017). We have performed the analysis through missing value test and missing values have been replaced with mean values of valid values.

4.2 Outlier

It refers to the responses about an item but with abnormal values. The author has used SPSS software to find the outliers. As few unsatisfactory questionnaires have been removed before data entry therefore software has not shown any outlier in data and we further performed the analysis confidently.

4.3 Descriptive Analysis

IBM SPSS is used to performed descriptive analysis. We performed descriptive analysis for seven variables which are Respondent age, Respondent Education, gender, year of experience, Industry, department of the respondent, Number of employees in the organization. Regarding age, 63% of respondents are 20 to 30 year, 29% of respondents are between 31 to 40 year and 8% respondent are between 41 to 50 years. Here we have analyzed, respondents with the age range between 20 to 30 years having a greater percentage with the frequency of 139 than all other respondents with age ranges. The second variable is the respondents education. We have divided the education variable in four levels intermediate, Bachelors, Master, and M.Phil. 10% respondent with the frequency of 21 was intermediate, 45% of them were bachelors degree holders with the frequency 99, 43% were masters with frequency 95 and 3% were M.Phil with the frequency 3. The third variable is respondent gender we used two types of gender i.e. male and female. As we have visited the business organizations personally and observed more strength of male employees than female employees in the Pakistani context. Total valid respondents of this research are 221 and male of them are 204 and female are 17 their percentages are respectively 92% and 8%.

Regarding year of experience of respondents in the organization are 5% employees have less than one year of experience, 44% of total was having 1 to 5 year, 31% was having 6 to 10 year, 13% of total valid respondent was having 11 to 15 years and last 7% of them were 15 year and above. We tried to approach maximum industries but we have focused on the availability and circle of our reach. Here we have 16% respondents from plastic and furniture, %15 from Textile, 39% from Pharmaceutical & Medical, 18% from sports, 6% from packages and 6% respondents were from the food industry. Data is collected from 6 types of the department because only these departments are closely connected with product development. These are

Sales and Marketing, Distribution, Purchase, Production, outbound Logistics, Inbound Logistics and their percentages are respectively 23%, 18%, 34%, 24%, and 1%.

Before data collection, we tried to focus those firms having employees strength 400 to 750. At some extent, we succeeded but under the constraint of limited resources, we collected data also from the firms with below 400 employees.

Further data analysis is performed for the purpose of testing the hypothesis, reliability and validity. Literature supports the below-mentioned steps for further data analysis (Wong, 2013).

1. Outer model loading
2. Indicator reliability
3. Internal consistent reliability/ composite reliability
4. Convergent validity AVE
5. Discriminant validity

First we have discussed the validity and reliability tests in detail and then values are interpreted.

4.4 Outer Model Loadings

Outer model refers to the relationship between items and latent variable and this outer model loading test represents the correlation between an item and the construct. To find the indicator reliability value, outer loading was seen it must be minimum .4 or above (Hulland, 1999). Default PLS algorithm report is generated first and then we were able to access the outer model loading values for analysis. Internal communication with its 4 items has correlation from .60 to 085, the four-item of conflict correlation varied from .70 to .86 its mean maximum correlation in items and latent variable conflict is 0.86. Leader support has 3 items Leadsup9, Leadsup10, Leadsup11 and correlation are respectively .79, .85, and .82. The meanwhile correlation varied between Employee Satisfaction and items is .83 to .87. Internal integration with its items; IInt15, IInt16, IInt17, IInt18 and IInt19 have correlation respectively .80, .87, .90, .85 and .83. External integration which is the one of an endogenous variable having 7 items with the maximum correlation .79 and minimum .61, item name ExInt22 have a greater correlation.

All the loading are analyzed and found the significant results even not a single value is less than .4.

4.5 Indicator Reliability

This is the second stage reliability test it indicates the individual effect of item on its latent variable. The benchmark value for this test is .4 or above (Hulland, 1999). Reliability test revealed all the indicators showing significant values but four items two from external integration and remaining two from internal communication having the minimum acceptable values which are .4 anyhow reference is cited above. We cannot remove any item having minimum value .4 because if we remove these items, remaining item will not be sufficient for latent variable moreover we are not removing because later reliability tests have shown significant results.

4.6 Internal Consistent Reliability/ Composite Reliability

Most of the researchers have been using the values of Cronbachs alpha to test the internal consistency reliability but literature also reported this technique (Bagozzi and Yi, 1988; Sarstedt et al., 2017). Benchmark for this test is .7 or above but in exploratory study .6 or above is suitable (Bagozzi and Yi, 1988).

The maximum value of composite reliability is .93 for internal integration. It means all five items of internal integration are supporting greater to its latent variable than the support of all the items of other latent variables. On the other hand composite reliability of internal communication by its items is minimum whichis.83 and it is also acceptable as it fulfils the requirement. The further conflict has .84 composite reliability and leader support having 086. Employee satisfaction is explained by .89 and at last composite reliability of external integration is .85. Overall all the above values are in the favour of this study.

4.7 Convergent Validity AVE

Convergent validity measures at what extent items are related to each other and check whether these items are converged on the same construct. When we perform a composite test on PLS, reports show the AVE test by default. The threshold for convergent validity shows the .5 as a benchmark (Bagozzi and Yi, 1988). Results revealed the truth as external integration having minimum convergent validity .5 it means the items related to this construct are related with each other and convergent on this construct but with the low acceptance level.

4.8 Discriminant Validity

In order to perform the discriminant validity, there is a need for correlation of construct between each other. First of all, the report is generated which represents the correlations and then took the square root of AVE values which must be greater than below-mentioned values in the correlation matrix. In this study we observed all the value calculated in the correlation matrix are greater than below values, It confirms the discriminant validity. See table 4.2.

4.9 Explanation regarding Endogenous Variable Variation

The coefficient of determinant R2 refers to how much variation is caused by other latent variables in the endogenous variable. In this study, there are two indigenous variables. The R2 value for internal integration is .664 it means that 66% variation in internal integration is caused by four other latent variables internal communication, Conflict, Leader support and Employee satisfaction. The R2 value for external integration is 0.360 it means 36% variation in external integration is caused by three latent variables internal communication, Internal integration and employee satisfaction. The threshold in marketing research represents, R2 of 0.75 is substantial, 0.50 is moderate, and 0.25 is weak (Wong, 2013). According to the above mentioned standard, our model is moderated fit.

4.9.1 Path Coefficient and Significance

To test the path coefficient PLS algorithm is required. The model suggested that external integration is strongly affected by employee satisfaction with the value.334, Secondly, internal integration has affected to external integrated by .288. At number three internal communications

Table 4.1: Result Summary of Reflective Outer Model

Latent Variables	Items	Loadings	Indicator Reliability	Composite Reliability	AVE
Internal Communication	Com1	0.60	0.4	0.83	0.6
	Com2	0.65	0.4		
	Com3	0.85	0.7		
	Com4	0.84	0.7		
Conflict	Conf5	0.70	0.5	0.84	0.6
	Conf6	0.76	0.6		
	Conf7	0.86	0.7		
	Conf8	0.69	0.5		
Leader Support	Leadsup9	0.79	0.6	0.86	0.7
	Leadsup10	0.85	0.7		
	Leadsup11	0.82	0.7		
Employee Satisfaction	EmpSat12	0.83	0.7	0.89	0.7
	EmpSat13	0.87	0.8		
	EmpSat14	0.86	0.7		
Internal Integration	IInt15	0.80	0.6	0.93	0.7
	IInt16	0.87	0.8		
	IInt17	0.90	0.8		
	IInt18	0.85	0.7		
	Int19	0.83	0.7		
External Integration	EXInt20	0.70	0.5	0.85	0.5
	ExInt21	0.72	0.5		
	ExInt22	0.79	0.6		
	ExInt23	0.69	0.5		
	ExInt24	0.61	0.4		
	ExInt25	0.64	0.4		

directly affects to external integration with the vale .082 which is a minimum impact. Above mentioned direct impact of internal integration on external integration is affected by internal communication with the value.295, Conflict with the value .337, leader support with .223 and employee satisfaction with the vale .117. It has analyzed that conflict has the strongest effect on internal integration and employee satisfaction has the weakest effect on internal integration.

Table 4.2: Discriminant Validity

Conflict	Employee Satisfaction	External Integration	Internal Communication	Internal Integration	Leader Suport
Employee Satisfaction	0.86				
External Integration	0.52	0.7			
Internal Communication	0.41	0.42	0.74		
Internal Integration	0.54	0.52	0.69	0.85	
Leader Suport	0.56	0.47	0.5	0.62	0.82

The hypothesis is tested on the basis of t-Test values H_1a, H_2, H_3, H_4a, H_4b and H_5 are accepted because their t values are more than 1.645 and H1b is rejected as its t value is .97 which is less than benchmark 1.645 (Sarstedt et al., 2017). See table 4.3 and framework 4.1 for path coefficient and significance.

With reference to previous research (base paper), we can compare the hypothesis testing. In this study, H_1a is accepted it means internal communication has a direct impact on internal integration. This hypothesis is also supported by the base paper. H_2, H_3, H_4a are also significantly accepted. It refers to conflict negatively influence internal integration. This hypothesis is purely offered by this study and it is strongly accepted. H_3 means leader support significantly and positively affect to internal integration. H4a represents the positive effect of employee satisfaction on internal integration. H_4b and H_1b give a great contribution to this study as they rejected the main idea of base research. As H_1b is rejected it means internal communication has no a significant positive impact on external integration and H_4b is accepted it explains that employee satisfaction has a significant and positive impact on external communication. As already mentioned above, the base paper gave a great contribution toward the gap by studying the positive effect of internal communication on external integration. Whereas this study is denying from it by rejecting the hypothesis and gave new direct toward SCI in the Pakistani context. We purposed employee satisfaction is a more important variable than internal integration for SCI.

5 Discussion

In this part, the researcher has discussed the study with the reference of results. He has given arguments on the differences and similarities between this study and base paper.

Simply the purpose of this study is to check the strength of supply chain management through supplies chain integration for this purpose we offered two antecedents to internal integration and test the relations with external integration. This type of model is first time introduced in 2016 by Jacobs et al. (2016). He is the first one because he put the two antecedent employee satisfaction and internal communication on internal integration and the subsequent effect on "integration with suppliers and customers". Further, First, we found the gap from previous research (Jacobs et al., 2016) and filled it by introducing two more antecedents to internal integration through theories support and secondly this study is conducted in Pakistan.

Table 4.3: Hypotheses Testing

	T Statistics Values
Conflict -> Internal Integration	4.46
Employee Satisfaction -> External Integration	3.89
Employee Satisfaction -> Internal Integration	1.92
Internal Communication -> External Integration	0.95
Internal Communication -> Internal Integration	4.57
Internal Integration -> External Integration	3.13
Leader Support -> Internal Integration	3.65

To test the hypothesis t-test has been used but the t values rejected one of hypothesis along with other accepted hypothesis which are, Our hypothesis H_1a, H_2, H_3, H_4a, H_4b and H_5 are accepted but H_1b is rejected. We analyzed the internal communication (communication within the functions) have a positive and significant impact on internal integration, the internal dysfunctional conflict has a strong negative effect on internal integration because its t-test value is greater than the values of all other antecedents which is .337. On the other hand, the t-test result surprised us when our hypothesis H1b was rejected. It means internal communication has no direct impact on external integration whereas above mentioned previous paper highly supports this relationship. They also claimed that there is not any significant effect of employees satisfaction on external integration but our result denied their views and supports the positive impact of employee satisfaction on external integration. As the interpretation of two contradictive results with previous research we argued that most of manufacturing firms have a touch point between employees, suppliers and customers. Satisfied employees always try to support their organization during these meetings which left the positive impact on externals whereas internal communication is not suitable for external integration because it doesnt have hundred present positive effects on intrinsic factors of employees for their satisfaction.

Two new latent variables as antecedents are brought through more than one theories. Conflict is studied by social capital theory and social conflict theory.

However, there are some similarities between the previous and this research. The positive effects of internal communication and employees satisfaction on internal integration remain the same not with values but on the basis of trends. Internal integration further positively effects on external integration.

From the results, it is proved that the strength of supply chain management can be improved by supply chain integration when the purposed antecedent exists behind the internal integration and external integration.

6 Conclusion

This research paper is a tool to ensure the supply chain integration for firms. It provides the valuable variables as antecedents to the model. Framework reveals strategic paths to improve external integration. This integration was tested in china whereas with the added effect of an-

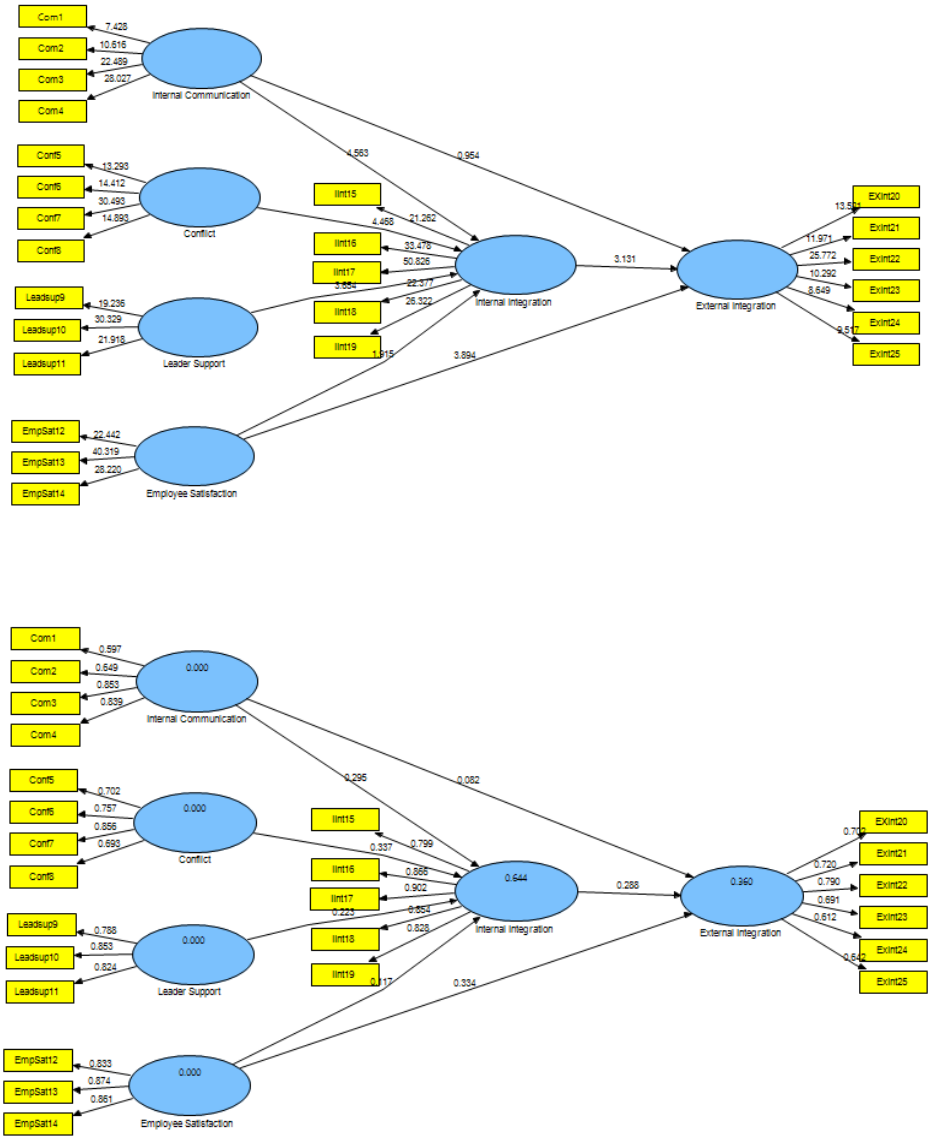

Figure 2: Path coefficient and significance

tecedent this integration has been tested in Pakistan. The purpose was to test this relation in Pakistan because supply chain integration is growing rapidly in Pakistani context.

As Managerial implication, managers should focus equally on internal communication and employee satisfaction for external integration but previous research was fully in the favor of internal communication.

Regarding the ultimate finding of this research, we support above mentioned relationships

between variables. As this is an explanatory and descriptive study because we have brought two variables in the previously mentioned framework and further explained by using theories and then tested statically.

6.1 Theoretical and Practical Contribution

First of all this study has introduced two variables conflict and leader support through suitable theories (Social conflict theory, Social capital theory and Transformational leadership theory). Previous research has offered all variables through a single theory (Social Capital Theory) whereas this study has filled the research gap by theoretical contribution.

Secondly, this study provides new avenues to SCI. It offers that practitioners should focus on leader support to minimize the conflict in an organization. As a result, they will find the strength of internal and external integration because the conflict has a negative impact on integration and leader support is introduced to reduce the negative impact.

As this study has denied the direct impact of internal communication on external integration, especially practitioners should equally focus on employee satisfaction and internal communication for external integration.

6.2 Limitation and Future Research

While this study contributes to research and practice, few limitations are required to be considered. Research offers contextual, Methodological and theoretical limitations. As methodological limitation researcher has used survey for data collection but this refers to capturing the conditions of the organization at a time. The researcher can study this model in a long time frame which may reveal the further fact about the antecedent of external integration. The second time this study is tested in Asia. Therefore this is the limitation of the study as we cannot generalize this result on all Asian countries because every county has different economic conditions. Like previous study supply chain integration is tested for manufacturing concerns not for a services business. The future researcher may find the result by applying this model on services. Moreover, the future research may introduce new antecedent to external integration which provides a bridge between internal communication and employee satisfaction for better impact on internal and external integration. Alternatively, the researcher may introduce a moderator between internal communication and external integration and secondly between employee satisfaction and external integration to stable the effect of both antecedents on external integration. Researchers may study the mentioned variable with different theories which refers to the theoretical limitation of this study.

Finally, at the end of this research author discussed the epilogue. After the result, discussions and findings, researcher has understood the depth of supply chain integration. Now he knew there is enough room to add more variables in SCI to study it in different aspects.

References

Alegre, I., Mas-Machuca, M., and Berbegal-Mirabent, J. (2016). Antecedents of employee job satisfaction: Do they matter? *Journal of Business Research*, 69(4):1390–1395.

Autry, C. W. and Griffis, S. E. (2008). Supply chain capital: the impact of structural and relational linkages on firm execution and innovation. *Journal of business logistics*, 29(1):157–173.

Bagozzi, R. P. and Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, 16(1):74–94.

Bryman, A. and Bell, E. (2007). Business research methods second edition oxford university press uk.

Chaudhuri, A., Boer, H., and Taran, Y. (2018). Supply chain integration, risk management and manufacturing flexibility. *International Journal of Operations & Production Management*.

Coleman, J. (1990). Foundations of social theory. cambridge, ma: Belknap press of harvard university press.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, 94:S95–S120.

Cooper, M. C., Lambert, D. M., and Pagh, J. D. (1997). Supply chain management: more than a new name for logistics. *The international journal of logistics management*, 8(1):1–14.

Das, A., Narasimhan, R., and Talluri, S. (2006). Supplier integrationfinding an optimal configuration. *Journal of Operations Management*, 24(5):563–582.

Dong, M. C., Ju, M., and Fang, Y. (2016). Role hazard between supply chain partners in an institutionally fragmented market. *Journal of Operations Management*, 46:5–18.

Droge, C., Jayaram, J., and Vickery, S. K. (2004). The effects of internal versus external integration practices on time-based performance and overall firm performance. *Journal of operations management*, 22(6):557–573.

Fernandes, A. C., Sampaio, P., Sameiro, M., and Truong, H. Q. (2017). Supply chain management and quality management integration. *International Journal of quality & reliability management*.

Flynn, B. B., Huo, B., and Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of operations management*, 28(1):58–71.

Fornell, C. and Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

Frohlich, M. T. and Westbrook, R. (2001). Arcs of integration: an international study of supply chain strategies. *Journal of operations management*, 19(2):185–200.

Germain, R. and Iyer, K. N. (2006). The interaction of internal and downstream integration and its association with performance. *Journal of business logistics*, 27(2):29–52.

Haenlein, M. and Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis. *Understanding statistics*, 3(4):283–297.

Heskett, J. L., Jones, T. O., Loveman, G. W., Sasser, W. E., Schlesinger, L. A., et al. (1994). Putting the service-profit chain to work. *Harvard business review*, 72(2):164–174.

Hieu, N. T. (2014). An investigation of the relationships between internal integration, antecedents and functional performance in vietnam. *Journal of Economics and Development*, 16(2):78–92.

Horn, P., Scheffler, P., and Schiele, H. (2014). Internal integration as a pre-condition for external integration in global sourcing: a social capital perspective. *International Journal of Production Economics*, 153:54–65.

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Sage.

Hulland, J. (1999). Use of partial least squares (pls) in strategic management research: A review of four recent studies. *Strategic management journal*, 20(2):195–204.

Inkpen, A. C. and Tsang, E. W. (2005). Social capital, networks, and knowledge transfer. *Academy of management review*, 30(1):146–165.

Jacobs, M. A., Yu, W., and Chavez, R. (2016). The effect of internal communication and employee satisfaction on supply chain integration. *International Journal of Production Economics*, 171:60–70.

Jonas, J. M. and Roth, A. (2017). Stakeholder integration in service innovation-an exploratory case study in the healthcare industry. *International Journal of Technology Management*, 73(1-3):91–113.

Kassinis, G. I. and Soteriou, A. C. (2003). Greening the service profit chain: The impact of environmental management practices. *Production and operations Management*, 12(3):386–403.

Le Meunier-FitzHugh, K. and Piercy, N. F. (2007). Does collaboration between sales and marketing affect business performance? *Journal of Personal Selling & Sales Management*, 27(3):207–220.

Lee, P., Gillespie, N., Mann, L., and Wearing, A. (2010). Leadership and trust: Their effect on knowledge sharing and team performance. *Management learning*, 41(4):473–491.

Mollenkopf, D., Gibson, A., and Ozanne, L. (2000). The integration of marketing and logistics functions: an empirical examination of new zealand firms. *Journal of business Logistics*, 21(2):89.

Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of management review*, 23(2):242–266.

Narasimhan, R. and Kim, S. W. (2002). Effect of supply chain integration on the relationship between diversification and performance: evidence from japanese and korean firms. *Journal of operations management*, 20(3):303–323.

Pagell, M. (2004). Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. *Journal of operations management*, 22(5):459–487.

Pelled, L. H. (1996). Demographic diversity, conflict, and work group outcomes: An intervening process theory. *Organization science*, 7(6):615–631.

Petter, S., Straub, D., and Rai, A. (2007). Specifying formative constructs in information systems research. *MIS quarterly*, pages 623–656.

Prajogo, D. and Olhager, J. (2012). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics*, 135(1):514–522.

Richardson, J. G. (1986). *Handbook of Theory and Research for the Sociology of Education*. Greenwood Publishing Group.

Sarstedt, M., Ringle, C. M., and Hair, J. F. (2017). Partial least squares structural equation modeling. *Handbook of market research*, 26:1–40.

Srivastava, A., Bartol, K. M., and Locke, E. A. (2006). Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. *Academy of management journal*, 49(6):1239–1251.

Stank, T. P., Keller, S. B., and Daugherty, P. J. (2001). Supply chain collaboration and logistical service performance. *Journal of Business logistics*, 22(1):29–48.

Stevens, G. C. (1989). Integrating the supply chain. *international Journal of physical distribution & Materials Management*.

Swink, M., Narasimhan, R., and Wang, C. (2007). Managing beyond the factory walls: effects of four types of strategic integration on manufacturing plant performance. *Journal of operations management*, 25(1):148–164.

Tourish, D. and Hargie, C. (1996). Internal communication: key steps in evaluating and improving performance. *Corporate Communications: an international journal*.

Vargas, G., Cardenas, L., and Matarranz, J. L. (2000). Internal and external integration of assembly manufacturing activities. *International Journal of Operations & Production Management*.

Wiengarten, F., Pagell, M., Ahmed, M. U., and Gimenez, C. (2014). Do a country's logistical capabilities moderate the external integration performance relationship? *Journal of Operations Management*, 32(1-2):51–63.

Wong, K. K.-K. (2013). Partial least squares structural equation modeling (pls-sem) techniques using smartpls. *Marketing Bulletin*, 24(1):1–32.

Yee, R. W., Yeung, A. C., and Cheng, T. E. (2008). The impact of employee satisfaction on quality and profitability in high-contact service industries. *Journal of operations management*, 26(5):651–668.

Zhao, X., Huo, B., Selen, W., and Yeung, J. H. Y. (2011). The impact of internal integration and relationship commitment on external integration. *Journal of operations management*, 29(1-2):17–32.

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 64-83

Interaction Between Energy Consumption and Economic Growth: Empirical Evidence from Pakistan

Oshin Khan[1] & Muhammad Zeeshan Younas*[2]

[1,2]*Quaid-i-Azam University, Islamabad, Pakistan*

Abstract. Energy arguably plays a substantial part in the economic growth process. Henceforth, a bulk of studies have endeavored to examine the linkages between energy consumption and economic growth; however, no consensus emerged. Current study is an attempt to explore the long run ties for energy consumption and energy intensity with economic growth, urbanization, trade openness, and financial development by employing ARDL cointegration in case of Pakistan for the period of 1985 to 2017. Results postulate that trade openness has a positive impact on energy consumption, while urbanization and financial development have a negative influence. As far as sectoral analysis is concerned, agriculture and manufacturing share has a positive impression on energy while the services sector has a negative effect.

Key words: Energy Consumption, Financial Development, Urbanization, Trade Openness, Economic Growth

1 Introduction

Energy is recognized as fuel for industrial development and economic growth (Adams et al., 2019). The energy industry, along with its vital products, serves as an imperative factor in the production process of good and service and the main contributor to sustainable economic growth. Since the start of industrialization, the swift pace of economic growth is accompanied by a hefty energy consumption. By increasing wages and boosting urbanization, industrialization creates a further increase to energy demand. For example, energy consumption augmented by more than 150% during last decade in China, is documented as the worlds biggest energy user in 2017. However, the use of energy, especially that of fossil fuel, has many hostile environmental impacts. The energy consumption in terms of renewables is a note-worthy supplier to static greenhouse gas emissions. They are indispensable to keep the temperature of the earth warm. On the other side, the use of greenhouse gases caused by man-made actions, captivate more heat and lead to global warming. It causes climate change which has been documented as an extreme challenge for policymakers. The global climate change intimidates the wellbeing of society, decreases economic development and alters the natural environment. So it becomes a key concern of policymaking of current century.

*Corresponding author.
Email: mrzee38@yahoo.com

The potential for renewable energy technologies to fill the gap between supply and demand of energy in Pakistan is dynamic. Furthermore, decentralized renewable energy splanshas the incentive to deliver electricity to rural and remote zones, in that way, assisting to ease poverty and decreasing the prerequisite to collect and burn biomass fuel for energy scarcities. With a shortage over 5000 megawatt (MW) and continuously snowballing energy prices due to high fuel prices, the demand of sustainable, cheap, and clean energy is important for decreasing dependency on imported energy means. Like other developing economies, primary energy consumption has elevated 80 percent in the previous two decades in Pakistan.

There has been a plethora of research conducted by the scholars for exploring the connection between economic growth and energy consumption but no serious attempt has yet been made with the perspective of sectoral analysis in Pakistan. Growth has different sectors, i.e. agricultural, manufacturing and services sector; each of these sectors contribute differently to energy use. Similarly, trade openness in Pakistan has different dimensions, for instance, scale effect, technique effect and comparative advantage effect, which contribute differently to energy use as well. These are the key areas of interest in this study.

The prime objective of this study is to discover the dynamics of the sector-wise impact of the economy on energy consumption. The three sectors taken are the agricultural, manufacturing and services sector. Technology in the form of comparative advantage is also taken as a factor to impact energy use. Financial development, urbanization and environmental quality, all these combine to affect energy use and so it can portray a larger image to conduct the study for the sake of Pakistan. To make the study more inclusive, the effect of trade openness is checked, with the help of three different dimensions of trade openness, i.e. Scale effect, Technique effect, Composition effect, and comparative advantage effect. The aim is to check which sectors among the growth sectors would lead to more energy consumption and which strategy might be adopted in trade to diminish environmental pollution and hence, energy consumption can be handled in this way.

2 Literature Review

In the last decade or two, plenty of studies had been conducted by the researchers that found the causal nexus between energy consumption and economic growth; mostly, the proxies used for these two are income and employment, respectively. The findings have been ambiguous and conflicting (Alvarez-Herranz et al., 2017). The first of the groundbreaking study done was by Kraft and Kraft (1978) which inferred that there is a causality from GNP to energy consumption in US. In the same way, Akarca and Long II (1979) took monthly data of US, found a unidirectional Granger Causality from energy consumption to the employment, having no feedback. These findings have been challenged by many researchers, since then. Empirical evidences provided by Erol and Yu (1987); Yu and Choi (1985) found no causal link between energy consumption and GNP (a proxy for income).

Another strand of literature analyzed this issue from another perspective as Kalimeris et al. (2014) reviewed the energy to GDP causality using a meta-analysis approach, which is quite different; 158 studies have been taken for a period of 1978-2011. Multinomial logistic regression method results do not indicate the presence of direction of causality. It rejects the neutrality hypothesis. For the sake of Pakistan, Aqeel and Butt (2001) investigated the association of energy consumption to both the economic growth and employment in Pakistan. The methodology used was co-integration and Hsiao's Granger causality. Results indicated that total energy consump-

tion as well as that of petroleum is caused by economic growth. The reason for these conflicting empirical findings lies in the choice of approaches and methodologies used for this study. In order to proceed with the advancement in time series data, in the last decade, bivariate causality tests have been used but these also have conflicting results.

The connection between economic growth and financial development is quite complex. Sadorsky (2011) studied the impact of financial development on energy consumption for nine European nations. Results confirmed the statistically significant and positive relationship between energy consumption and financial development. Whereas, Çoban and Topcu (2013) studied the effect of financial development on consumption of energy in the europe. GMM based results do not contain any significant nexus but there is a strong proof of the effect of financial development on the energy consumption in the members that are old, irrespective of stock market or banking sector. For the new members, the same impact is dependent on the way the financial development is measured. Similarly, Furuoka (2015) took the nexus between energy use and financial development for the period of 1980-2012. Heterogeneous panel causality test described a long run equilibrium relationship between energy use and finance. The heterogeneous panel causality test further showed causality that is unidirectional and that runs from energy consumption to financial development.

Further extention in analysis made by Farhani and Solarin (2017) by examining the time series data of United States. The results suggested co-integration among them. Also, financial development lessens demand of energy in the long run but also stimulates in the short run. Nasreen et al. (2017) aimed to study the nexus between financial stability, carbon dioxide emissions, energy consumption and economic growth for South Asian countries. Granger causality and bounds tests for co-integration result expressed that the environmental quality is improved by financial stability. As far as energy intensity is concerned, Voigt et al. (2014) studied the trends in energy intensity in 40 foremost economies. At the country level, the improvements in energy intensity are largely caused by the technological change. While at a global level, there is a shift of global economy to more energy intensive countries but still, aggregate energy efficiency is followed and improved by technological change. Likewise, Adams et al. (2019) attempted to find out how to decompose the energy consumption and energy intensity into activity and efficiency changes. Fischer Ideal Index decomposition method suggested that energy intensity has been increasing to 53 percent between 1972-2011. Around 72 percent of this increase is due to the inefficient use of energy.

On the other hand, Tugcu and Topcu (2018) studied the nonlinear relationship between energy consumption and trade. Heterogeneity is involved to employ a panel framework and cross sectional dependence is checked. The sample used is of OECD countries from 1990-2015. Outcomes displayed that the effect of trade on energy consumption reveals an inverted U-shaped pattern and the nonlinear relationship is robust to estimation methods. Moreover, Wang et al. (2017) extended the analysis and empirically investigated the impact of urbanization on energy consumption taking into account the provincial differences. The results say that urbanization increases CO2 emissions but it is not the case always. Urbanization strongly affects the regional CO2 emissions in Northern China where there is a coal and heavy industry base.

In a nutshell, after keen evaluation of plethora of literature on economic growth and energy consumption, we divided the current study analysis into four different models with different explanatory variables taken into account. Conceptual discussion is provided in the next section.

3 Theoretical Framework And Methodology

3.1 Theoretical Framework

Energy demand and its consumption has crucial role for a country. It is not confined to country but has global impacts and consequences as well. This study investigates the relationship between economic growth and energy consumption for Pakistan. It also incorporates the consequences that environment of Pakistan faces. When energy burns, it releases dangerous chemicals, which harm the entire atmosphere and specifies living and breathing under that environment. We estimated four different models, first of which examines effects of financial development, income, urbanization and trade openness on energy demand. Since liberalization of financial markets tend to promote growth, hence following Bekaert and Harvey (2000), we have the following model to estimate impacts of financial development and income on energy demand.

$$ED = f(FD, GDP)$$

Where ED stands for energy demand, FD stands for financial development and GDP indicates gross domestic product. Similarly, urbanization has been witnessed to increase the energy consumption, i.e. the more the urbanization, the higher is supposed to be the energy consumption. Hence forth, we would be taking urbanization as control variable and augment our model as below:

$$ED = f(FD, GDP, UR)$$

Where UR indicates urbanization. Sbia et al. (2014) points out that another control variable which is supposed to have an impact on energy consumption is trade openness. Trade openness can have positive as well as negative impacts on energy consumption. Its impact can be negative if increasing trade flows result in bringing innovative technologies, while positive when it increases the scale of production. Thus we are augmenting our model as follow:

$$ED = f(FD, GDP, GDP^2\, UR, TR) \tag{1}$$

Where TR indicates trade openness. Similarly, we also added square of the GDP to account for Kuznets Curve for energy consumption.We further want to explore the sector wise impact of income on energy use, following Ling et al. (2015), we estimated another model by including the share of agriculture, manufacturing and services sector. For this purpose, we estimate the following model:

$$ED = f\{FD, MS, AS, SS, UR, TR) \tag{2}$$

Where, FD is financial development, MS, AS and SS are manufacturing shares, agriculture shares and services shares, respectively. To look further into determinants of energy demand, we took into account more of the research work. Literature further recommends that trade openness encourages mass awareness to demand for clean environment, energy-efficient technology transfer and government policy course toward ecological welcoming programs. The environmental significance of trade via energy consumption is varied by income effect, technique effect, and composition effect (Jena and Grote, 2008).

$$ED = f(GDP, GDP^2, K, TR, K.TR) \tag{3}$$

Where GDP, GDP2 are gross domestic product and its squared and they show scale effect and technique effect, respectively. K is capital-labor ratio represents composite effect, TR is trade openness, which depicts trade effect, while K.TR is comparative advantage effect.

$$EI_t = f(GDP, Krate, K/L) \tag{4}$$

Where EIt is energy intensity, It is ratio of energy use to GDP, while K denotes capital growth rate and K/L is ratio of capital and labor. We have taken energy intensity as dependent variable to check its determinants. However, we used GDP and capital growth rate and capital-labor ratio as explanatory variables. Variable of GDP is included to show the level of economic development. There is general belief that as economy develops energy efficiency also improves, so accordingly we expect GDP sign for model (4) to be negative. Following Thompson and Taylor (1995) and Metcalf (2008), capital-labour ratio is used as a proxy for level of technology. The intuition is that technology, energy and capital can be substituted. However, we expect capital-labour ratio to have a negative sign, since energy intensity may lower energy use because of improvements in the technologies. We also introduced the growth of capital stock in the model which is used to account for the speed by which old machines are replaced by new ones.

3.2 Econometric Methodology

Our main emphasis is to estimate dynamics of energy consumption for country Pakistan, and since we have to deal with time series data, it has its own problems and properties. One of the most important properties of the time series is data stationarity, it must be checked otherwise simple ordinary least squares (OLS) will provide spurious coefficients. Fortunately, researchers have found the way to deal with this type of problem, if variables are non-stationary or there exists unit root in the series, they prefer to estimate co-integration techniques to estimate any relationships given variables and models.

Co-integration is broader concept under which comes different techniques, few of them are widely used based on their popularity, which are single equation approaches including residual based Engle-Granger single equation technique (Engle and Granger, 1987) and ARDL technique (Pesaran et al., 2001) and multiple equation approaches which include Johanson-Juselius (JJ) technique (Johansen and Juselius, 1990). Since we are interested in finding our dynamic relationship among variables, this study will apply ARDL approach to co-integration.

Speaking of ARDL technique, it is superior to other mentioned integrated techniques. Firstly, ARDL is flexible as compared to other approaches, that is, when order of integration is not same. i.e. some are I(1) and some are I(0), it can also be employed. In contrast, ARDL should not be used if any of the variables are integrated of order two, symbolically, I(2). Its flexibility also includes introduction of lags of both dependent and independent variables in the model, when lags of dependent variable are incorporated it is called autoregressive; while inclusion of lags of independent variables makes it "distributed lag", thus, allows past values to impact dependent variable. Secondly, when ARDL takes sufficient number of lags, it uses general to specific framework to deal with and to capture data generating process. Moreover, estimates using ARDL are consistent if there is a short span of data. To attain optimal lag length, ARDL estimates the expression of (p+1) K number of regression. In the mentioned expression, k denotes number of variables, while p denotes maximum lags.

Thirdly, ARDL is relatively robust when sample size is finite or small. According to Pesaran and Shin (1998), ARDL is superior in case of small sample on Johansen co-integration technique, which requires sample to be large enough to produce valid and reliable results. In addition to

that, the techniques of Johansen and Juselius (1990) and Engle and Granger (1987) do not yield reliable results in small sample case. Briefly speaking, in situation involving endogeneity, small size of sample and varying order of integration among variables, ARDL approach given by Pesaran et al. (2001) is used to find out short and long run connections among various variables.

3.2.1 Econometric Models of the Study

Based on availability, data on respective variables are taken from 1985 to 2016 for Pakistan. Since Pakistan is facing energy shortage against achieving its desired energy needs, so it will be interesting to study case of Pakistan. Complete variables description and data sources are presented in the appendix section of this study. Econometrical models of the study are described below:

Model 1

$$lnEU_t = \beta_0 + \beta_1 lnFD_t + \beta_2 lnGDP_t + \beta_3 lnGDP_t^2 + \ \beta_4 lnUR_t + \beta_5 TR_t + {}_t$$

Model 2

$$lnEU_t = \gamma_o + \gamma_1 lnFD_t + \gamma_2 lnAS_t + \ \gamma_3 lnMS_t + \gamma_4 lnSS_t + \gamma_5 lnUR_t + \gamma_5 lnTR_t + \mu_t$$

Model 3

$$lnEU = \alpha_0 + \alpha_1 lnGDP + \alpha_2 lnGDP_t^2 + \alpha_3 lnK\_L_t + \alpha_4 lnTR_t + \alpha_5 lnK.TR_t + \mu_t$$

Model 4

$$lnEI_t = \beta_0 + \beta_1 lnGDP + \beta_2 lnKrate + \beta_3 lnK\_L_t + \mu_t$$

Where ln denotes natural logarithm, α_0, γ_o, β_0 are intercepts, while $\beta's$, $\gamma's$ and α's are coefficients of respective variables. lnFD is natural log of financial development, lnGDP is natural log gross domestic product, lnUR is natural log of urbanization, lnTR is natural log of trade openness. lnAS is natural log of agriculture share, lnMS is natural log of manufacturing share lnSS is natural log of services sector, lnK_L is natural log of capital-labour ratio while lnK.TR is comparative advantage and lnKrate is growth rate of capital. The general form for ARDL model is:

$$\triangle E_t = \alpha_0 + {}_1E_{t-1} + \alpha_2 GDP_{t-1} + \alpha_3 FD_{t-1} + \alpha_4 TR_{t-1} + \alpha_5 UR_{t-1} + \alpha_6 \sum_{i=1}^{p} \triangle E_{t-i} + \alpha_7 \sum_{i=0}^{p} \triangle GDP_{t-i} + \alpha_8 \sum_{t=0}^{p} \triangle FD_{t-i} + \alpha_9 \sum_{t=0}^{p} TR_{t-i} + \alpha_{10} \sum_{t=0}^{p} UR_{t-i} + \varepsilon_t \quad (5)$$

Where α_0 is intercept parameter while $\alpha_1$to α_{10} on right hand side are long run parameters indicating long run relationship. p shows number of lags, ε_t is error term which is white noise in

the model. The terms along with delta sign and summation show error correction estimates for short run. There are two steps in ARDL approach for calculating F-statistics for co-integration. First is the selection of lag length of the ARDL model, thus optimal number of lags must be selected before estimating ARDL model. There are different criterion for selection of optimal number of lags such as Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), Log Likelihood Ratios (LR) and Log Likelihood test (LL). These all criterion have same null hypothesis that is, selected order of lag is optimal.

Once number of optimal lags are selected, we will go for second step of ARDL approach, which is to find out long run relationship of selected ARDL model. Prior to this, we will make use of Wald or F-test (Pesaran, 1997). Wald test is applied when we need to test for the significance of lagged levels of the variable. The variables which are incorporated in the unrestricted equilibrium error correction model. Speaking of statistical hypotheses, Wald test has null hypothesis of no co-integration exists among the variables, while alternative hypotheses are:

$H_0 : \alpha_i = 0, \qquad H_1 : \alpha_i \neq 0$

Pesaran et al. (2001) suggested critical values of F-statistics, which are used to make decisions, these values have I(0) and I(1) data generating process. Thumb rule for decision making for this test is: If calculated value of F-statistics is greater than tabulated/critical values of I(1), i.e. upper bound, we reject null hypothesis meaning that there exits long run relationship. While if calculated value for F-statistics is less than that of critical/tabulated values of I(0), i.e. lower bound, we accept null hypothesis meaning that there exists log run relationship among variables. Moreover, result may be inconclusive if calculated values lie in between upper bound I(1) and lower bound I(0). This is the reason for ARDL as not valid technique for I (2), because it has only two bounds. Once we have successfully applied Wald test, and found that there exits long run association among variables, we will move to our next step which is to estimate long run coefficients using ARDL model equation 5. When we attain long run coefficients of the ARDL model for our variables, we may estimate short run coefficients as well. For short run analysis, it is necessary to retrieve error correction model from ARDL through linear transformation. The interesting fact regarding error correction model is that it integrates short run adjustments with long run, and luckily does not lose information. The main purpose of ECM is to give information about speed of adjustment or say convergence of dependent variable after short run disturbances in independent variables towards long run equilibrium. Lower the value of coefficient of error correction term slower the speed of adjustment and vice versa. Another fact regarding error correction term is that it must be negative and significant at high level of significance, which indicates that long run relationship is achievable among variables. ECM along with short run coefficient takes the form:

$$\triangle E_t = \alpha_0 + \alpha_1 ECM_{t-1} + \alpha_2 \sum_{i=1}^{p} \triangle E_{t-i} + \alpha_3 \sum_{i=0}^{p} \triangle GDP_{t-i} + \alpha_4 \sum_{t=0}^{p} \triangle FD_{t-i} + \alpha_5 \sum_{t=0}^{p} \triangle TR_{t-i} + \alpha_6 \sum_{t=0}^{p} \triangle UR_{t-i} + \varepsilon_t \quad (6)$$

Lastly but most importantly, diagnostic tests have vital importance since they diagnose problem regarding model specification and data used. Therefore, we have applied different diagnostic tests such as test for serial correlation, functional form, heteroskedascity and normality of residuals. These diagnostic tests include Ramsey RESET test, which tells whether functional form of model we have estimated is correct. Breusch Godfrey serial correlation LM test, which is

very useful and widely used for checking serial correlation. For normality of residuals we have used Jarque-Berra test. In last, presence of heteroskedascity is checked via applying ARCH test. To check whether our model is structurally stable Pesaran (1997) recommend use of CUSUM and CUSUMSQ tests proposed by Brown et al. (1975), which are widely used to check stability of model. Rule of thumb here is that, if these plots lie within the critical bounds at 5% level of significance, we cannot reject null hypothesis rather we accept it, and conclude that our model is stable. Null hypothesis is "all the coefficients in given regression are stable".

4 Results and Empirical Analysis

First part of this section presents graphical representations of dependent variable, i.e. energy consumption against all other explanatory variables to discover patterns and/or trends of variables. Fig 1 exhibits relationship between energy use and agriculture sector, trend is positively sloped indicating positive relationship. Fig 2 shows relationship between energy use and labour force, likewise, there is positive pattern shown by graph. Fig 3 depicts financial development against energy use, shows negative trend between these two. Fig 4 shows relationship between energy use and GDP which is also positively sloped, similarly, fig 5 and fig 6 depict energy use against manufacturing sector and capital respectively. Both tend to show positive pattern. Fig 7 shows positive relationship between energy use with services sector while Fig 8 shows negative trend between energy use and trade. Fig 9 exhibits positive pattern for urbanization against energy use.

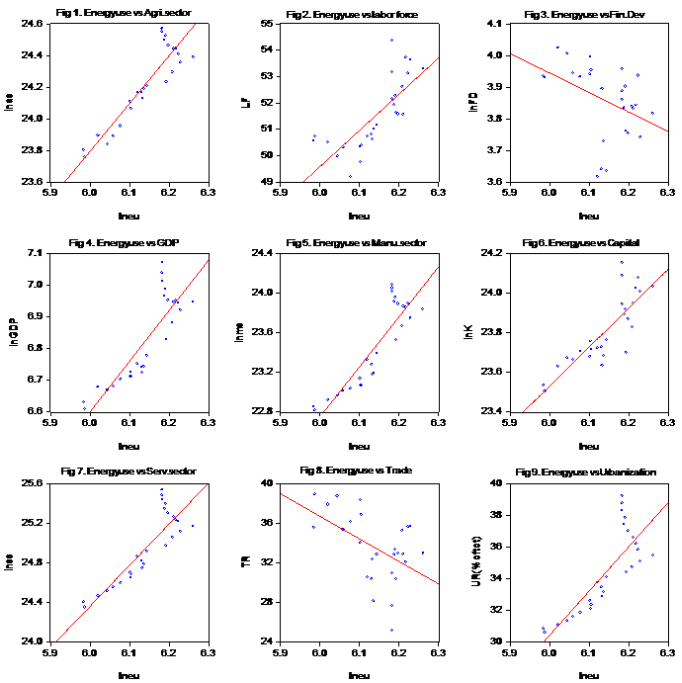

Figure 1: Research Model

Table 4.1: Risk Register

	LNEU	LNAS	LF	KRATE	K_TR	K_L	LNFD	LNGDP	LNGDPSQR	LNMS	LNSS	TR	LNUR
Mean	6.141543	24.2216	51.52483	2.8444	15.48654	0.462355	3.857081	6.826521	13.65304	23.46551	24.9466	33.46264	34.38519
Median	6.144151	24.20805	51.16713	3.199175	15.2538	0.464314	3.886971	6.778149	13.5563	23.39228	24.91534	32.99043	34.065
Maximum	6.26104	24.57409	54.37153	19.90113	18.35536	0.481903	4.023913	7.072251	14.1445	24.08885	25.53582	38.90949	39.224
Minimum	5.984615	23.75421	49.19157	7.705547	11.16847	0.444266	3.616726	6.609082	13.21816	22.81563	24.34812	25.13914	30.576
Std. Dev.	0.075437	0.253745	1.36099	6.762113	1.76638	0.009345	0.113975	0.140222	0.280445	0.429325	0.360725	3.460577	2.613814
Skewness	-0.58545	-0.26714	0.435549	0.551135	-0.30055	-0.10125	-0.66737	0.161627	0.161627	0.004416	0.012432	-0.39825	0.285807
Kurtosis	2.42394	1.901495	2.195486	3.227976	2.874349	2.489324	2.539357	1.588741	1.588741	1.439812	1.738119	2.766747	1.894614
JarqueBera	1.91572	1.678688	1.581811	1.425344	0.424238	0.339518	2.24296	2.358162	2.358162	2.738547	1.792082	0.774928	1.7422
Probability	0.383713	0.431994	0.453434	0.490332	0.808868	0.843868	0.325797	0.307561	0.307561	0.254292	0.408183	0.678776	0.418491

Table 4.2: Risk Register

	Lneu	*lnFD*	*TR*	*lnGDP*	*lnGDPsqr*	*lnms*	*lnas*	*lnss*	*LF*	*lnK*	*K/L*	*K.TR*	*Lnur*	*Krate*
lneu	1													
lnFD	-0.40844	1												
TR	-0.49789	0.480873	1											
lnGDP	0.86015	-0.17153	-0.57394	1										
lnGDPsqr	0.86015	-0.17153	-0.57394	1	1									
lnms	0.888682	-0.25581	-0.57754	0.992266	0.992266	1								
lnas	0.898947	-0.31033	-0.65019	0.96952	0.96952	0.976291	1							
lnss	0.869575	-0.26594	-0.63719	0.988246	0.988246	0.991693	0.989263	1						
LF	0.762291	-0.17197	-0.50205	0.853262	0.853262	0.848789	0.790053	0.811432	1					
lnK	0.835353	-0.09292	-0.47441	0.936037	0.936037	0.918793	0.887777	0.903808	0.861293	1				
K/L	-0.6833	0.199851	0.47947	-0.76277	-0.76277	-0.76541	-0.70116	-0.72233	-0.97984	-0.74329	1			
K.TR	-0.57559	0.482114	0.987211	-0.65248	-0.65248	-0.65825	-0.71288	-0.70365	-0.62728	-0.55708	0.612068	1		
lnur	0.807579	-0.22955	-0.66117	0.979729	0.979729	0.977007	0.974208	0.992916	0.790883	0.879284	-0.70488	-0.72106	1	
Krate	-0.00744	0.059108	0.067882	0.110239	0.110239	0.067789	0.023597	0.044996	0.288841	0.2102	-0.29051	0.011803	0.047165	1

We have applied ADF unit root test on all variables to find out whether our variables are stationary and in case if they are not stationary, on what difference they will become stationary, in other words, known the order of integration. The results are presented in table 3.

Table 4.3: ADF Unit root test

Variable	**At level**			**At first difference**			**Order**
	Cal-value	**Critical-value**	**P-value**	**Cal-value**	**Critical-value**	**P-value**	
lnEU	-2.38152	-2.98104	0.1563	-3.73451	-2.98623	0.0098***	I(1)
lnFD	-1.63501	-2.98104	0.4511	-4.16246	-2.98623	0.0036***	I(1)
lnGDP	0.914933	-3.01236	0.9936	-3.04071	-2.98623	0.0447***	I(1)
lnGDPsqr	0.914933	-3.01236	0.9936	-3.04071	-2.98623	0.0447***	I(1)
lnAS	-1.54034	-2.98104	0.4978	-5.6318	-2.98623	0.0001***	I(1)
lnMS	-0.66283	-2.98623	0.8386	-2.97619	-2.98623	0.0510**	I(1)
lnSS	-0.08327	-2.98623	0.9411	-3.1085	-2.98623	0.0388***	I(1)
lnLF	-0.51608	-2.98104	0.8727	-4.58869	-2.98623	0.0013***	I(1)
lnTR	-1.46633	-2.98104	0.5343	-6.08777	-2.98623	0.0000***	I(1)
lnUR	-0.5968	-1.95568	0.4482	-2.60835	-1.95568	0.0115***	I(1)
lnK_L	-0.99888	-2.98104	0.7383	-5.1374	-2.98623	0.0003***	I(1)
lnK.TR	-1.2174	-2.98104	0.6511	-6.13611	-2.98623	0.0000***	I(1)
Krate	-3.58643	-2.98104	0.0133***	-	-	-	I(0)

Table 4.4: Lag Order Selection Criteria

Model 1						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	302.7398	NA	1.97e-18	-23.73918	-23.44665	-23.65805
1	540.7985	342.8045	2.07e-25	-39.90388	-37.85616	-39.33593
2	640.1691	95.39587*	2.33e-27*	-44.97353*	-41.17064*	-43.91877*
Model 2						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	156.4659	NA	1.51e-14	-11.95727	-11.61599	-11.86262
1	351.3361	265.0234	1.52e-19	-23.62689	-20.89661	-22.86962
2	482.0801	104.5952*	6.89e-22*	-30.16641*	-25.04713*	-28.74654*
Model 3						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	255.9239	NA	8.36e-17	-19.99391	-19.70138	-19.91277
1	376.8753	174.1701	1.02e-19	-26.79002	-24.74231	-26.22208
2	446.4181	66.76113*	1.25e-20*	-29.47345*	-25.67056*	-28.41869*
Model 4						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	119.8341	NA	3.14e-10	-10.53037	-10.33200	-10.48364
1	193.3696	113.6458	1.73e-12	-15.76087	-14.76902	-15.52722
2	218.2210	29.36984*	9.21e-13	-16.56555	-14.78020	-16.14497
3	236.6076	15.04360	1.22e-12	-16.78251	-14.20368	-16.17502
4	282.0807	20.66955	3.17e-13*	-19.46188*	-16.08956*	-18.66746*

** indicates optimal lags selected by specified criterion.*

Since we are following the results of ADF test, it concludes that all variables are stationary at first difference, I(1), for which ARDL technique to cointegration can be applied. Since we have selected optimal lag criteria based on AIC, which is two optimal lags for models 1, 2 and 3 while four optimal lag for model 4. Bound Test is used in order to analyse the long run relationships and examine whether cointegration exist or not. So Bound-test is applied on four models and results are presented in following table, which shows calculated f-values along with lower and upper bounds critical values. Table shows that for model (1) calculated F-value is 13.19193, lower bound 2.62 and upper bound 3.79. When all variables are order of integration I(0), then decision should be made on lower bound, whereas, if all variable of order I(1), we should decide on upper bound I(1). Since our all variables are stationary at 1st difference or say are of order of integration I(1), we compare our calculated f-value with upper bound critical value. However, it can be concluded that there exits long run relationship among variables in our estimated model

(1) i-e calculated F-value is greater than upper bound.

Table 4.5: Bound Test at 5% significance level

	Calculated F-value	Critical lower bound I(0)	Critical upper bound I(1)	Result
Model 1	13.19193	2.62	3.79	Cointegration
Model 2	9.110683	2.45	3.61	Cointegration
Model 3	4.158414	2.62	3.79	Cointegration
Model 4	4.26063	3.23	4.35	Cointegration

4.1 Results of Long-Run Estimates (ARDL Model)

This sub-section reports results for long run estimates of ARDL model. Following table shows explanatory variables along with their respective coefficients, t-statistics and probability. Energy consumption (lnEU) is used as dependent variable for models (1,2 and 3). Reporting results for model (1) describe that coefficient of financial development has negative sign while GDP is positive. Squared term of GDP is also significantly negative alongwith Urbanization at 1% level of significance. Coefficient of trade openness has positive sign but it is insignificant variable indicating that trade openness does not significantly affect energy consumption. Value of adjusted R2 for model (1) indicates model is pretty appropriate and fit as it explains 0.994019 variation in the model that is model predicts responses for new observations.

Table 4.6: Long Run Coefficients

Model 1 Dependent variable (lnEU)			
Variable	Coefficient	t-Statistic	Prob.
LNFD	-0.09559	-3.43978	0.0088
LNGDP	28.34371	9.719116	0
SQRLNGDP	-1.99597	-9.27861	0
LNTR	0.027455	0.944657	0.3725
LNUR	-0.59673	-5.17139	0.0009
C	-91.6268	-9.39514	0
Adjusted R2		0.994019	
D. Watson statistics		2.957943	
Model 2 Dependent variable (lnEU)			
Variable	Coefficient	t-Statistic	Prob.
LNFD	0.072666	1.874132	0.11
LNAS	0.296844	3.230479	0.0179
LNMS	0.227504	4.867763	0.0028
LNSS	-0.37203	-4.59649	0.0037
LnUR	-0.17439	-4.84166	0.0029
LnTR	0.000905	0.535597	0.6115
C	3.112022	3.613225	0.0112
Adjusted R2		0.989947	
D. Watson statistics		3.077529	

Model 3 Dependent variable (lnEU)			
Variable	Coefficient	t-Statistic	Prob.
LNGDP	55.02006	13.66525	0
LNGDPSQR	-4.00228	-13.5212	0
K_L	-9.9747	-4.20679	0.0023
LnTR	-0.11315	-3.65109	0.0053
K_TR	0.249181	3.687336	0.005
C	-178.339	-13.7252	0
Adjusted R2		0.988735	
D. Watson statistics		2.49295	
Model 4 Dependent variable (lnEI)			
Variable	Coefficient	t-Statistic	Prob.
LNGDP	-0.11554	-6.85848	0.001
K_L	-0.825229	-2.968843	0.0312
KRATE	-0.001281	-3.53068	0.0167
C	2.071748	9.873514	0.0002
Adjusted R2		0.976843	
D. Watson statistics		2.333951	

For model (2), variables such as agriculture share, manufacturing share, services share and urbanization are significant at 1% level of significant while financial development and trade openness are insignificant. Value of adjusted R2 is appropriate suggesting that model explains variation and responses to new observation as well. Findings for model (3) show that, all variables used in the models are significant at 1% level of significance. Similarly, for model (4) all variables are significant at 1% level of significance and all variables have negative signs.

4.2 Results of Error Correction Model (ECM)

We have extracted short run coefficients using error correction model which are reported in the following table. Error correction term (ECM) has vital importance in case of short run, since it shows speed of adjustment or say convergence, to put it in simpler words, it tells how long it will take for variable to converge. For model (1), ECM has value -0.692655 at 1% level of significance in short run. It has implication that any shock will be corrected if it occurs in energy consumption by taking 69 percent speed in course of one year. Similarly, for model (2) value of ECM is -0.171864 at 1% level of significance. As well, model (3) has ECM value of -1.048985 at 1% level of significance indicating any shock will be adjusted in energy consumption by speed of 105% in course of one year. For model (4), ECM has value -0.602722 at 1% level of significance in short run. It shows that any shock will be adjusted if it occurs in energy intensity by taking speed of 60 percent in course of one year.

Table 4.7: Short run coefficients (ECM)

Model (1) Dependent variable = Δlneu			
Regressors	**Coefficients**	**t-values**	**Probability**
Δlneu(-1)	0.206676	1.498820	0.1723
Δ(LNGDP)	10.436003	1.351704	0.2134
Δ(SqrlnGDP)	-0.700256	-1.238103	0.2508

Δ(lnFD)	-0.055113	-1.362606	0.2101
Δ(LNTR)	-0.085653	-2.959916	0.0181
Δ(LNUR)	63.038532	2.998724	0.0171
CointEq(-1)	-0.692655	-6.706688	0.0002
Model (2) Dependent variable = ΔlnEU			
Δ(lnEU(-1))	-0.171864	-0.768660	0.4713
Δ(LNFD)	0.016844	0.451528	0.6675
Δ(LNAS)	0.134042	2.345304	0.0574
Δ(LNMS)	0.210007	2.772848	0.0323
Δ(LNSS)	0.450135	1.917656	0.1036
Δ(URGR)	0.384149	1.810363	0.1202
Δ(TR)	-0.003095	-2.642852	0.0384
CointEq(-1)	-0.171864	-5.241138	0.0019
Model (3) Dependent variable = ΔlnEU			
Δ(LNEU(-1))	-0.150361	-1.018429	0.3351
Δ(LNGDP)	22.770081	1.932933	0.0853
Δ(LNGDPSQR)	-1.651934	-1.892680	0.0909
Δ(K_L)	-9.451071	-3.786609	0.0043
Δ(TR)	-0.124388	-3.879681	0.0037
Δ(K_TR)	0.261387	3.767464	0.0044
CointEq(-1)	-1.048985	-4.511555	0.0015
Model (4) Dependent variable = ΔlnEI			
Δ(LNEI(-1))	0.221720	0.551194	0.6052
Δ(LNGDP)	-0.033037	-0.929384	0.3953
Δ(K_L)	-0.168731	-1.073350	0.3322
Δ(KRATE)	-0.000260	-1.840263	0.1251
CointEq(-1)	-0.602722	-2.458190	0.0574

4.3 Encompassing Analysis

This section reports the results of encompassing analysis which are done to find out sensitivity and robustness of variables and to mitigate specification bias problem as shown in following tables.

Table 4.8: Model 1 Dependent Variable (EU)

Variables	**Eq. 1**	**Eq. 2**	**Eq. 3**	**Eq. 4**	**Base Eq.**
LNFD	-0.43355***	-0.71209***	-0.419452***	7.190318	-0.09559***
	(-3.87384)	(-3.86366)	(-2.387171)	-0.025545	(-3.43978)
LNGDP		1.342625***	16.289056	272.358376	28.34371***
		-3.976537	-1.251343	-0.030342	-9.719116
SQRLNGDP			-1.114634	-20.330684	-1.99597***
			(-1.160006)	(-0.03016)	(-9.27861)
LNTR				-0.090987	0.027455
				(-0.02679)	-0.944657
LNUR					-0.59673***
					(-5.17139)

Above table reports coefficient of model 1 for variables of financial development (LNFD), gross domestic product (LNGDP), squared term of GDP (SQRLNGDP), trade openness (LNTR) and urbanization (LNUR), whereas, energy use is used as dependent variable. Coefficient of financial development is negative and significant at 1% level of significance through all equations except Eq.4 where it is positive and insignificant. GDP is positive and significant for Eq.2 and base Eq. while for Eq.3 & Eq.4. it is insignificant. Variable of squared GDP is negative throughout all equations, and significant at 1% of level of significance in base equation. Trade openness is insignificant throughout all equations, while urbanization is negative and significant at 1% level of significance. Similarly, the table 9 reports coefficients of model 2 for variables of financial development (LNFD), agriculture sector (LNAS), manufacturing sector (LNMS), services sector (LNSS), trade openness (LNTR), urbanization(LNUR). Coefficient of financial development is negative from eq 1 to eq 4. It is positive for base and eq 4. It is significant only for eq 1 and eq2 at 1 percent level of significance. Coefficient of agricultural sector is positive throughout the equations. It is negative and significant for equation 2, 5 and base eq at 1 percent level of significance. Coefficient of manufacturing sector is positive throughout the equations except for eq 3. It is significant only in the base eq at 1 percent level of significance. Likewise, the coefficient of services sector is negative in all the equations and it is significant only in the base equation. Coefficients of urbanization and trade openness are negative and insignificant except for urbanization in base equation, which is significant at 1% level of significance.

Table 4.9: Model 2 Dependent Variable (EU)

Variable	**Eq.1**	**Eq.2**	**Eq.3**	**Eq. 4**	**Eq. 5**	**Base Eq.**
LNFD	-0.43355***	-0.33248***	-0.00483	-0.100025	0.132704	0.072666
	(-3.87384)	(-4.59406)	(-0.004342)	(-0.695157)	-1.550735	-1.874132
LNAS		0.124465***	0.815514	0.108518	0.299078***	0.296844***
		(-3.386085)	(-0.501844)	(-0.10617)	(-3.40624)	(-3.230479)
LNMS			-0.794101	0.267889	0.142194	0.227504***
			(-0.462831)	-0.965477	-1.125352	-4.867763
LNSS				-0.235836	-0.043118	-0.37203***
				(-0.251744)	(-0.081365)	(-4.59649)
LnUR					-0.288477	-0.17439***
					(-0.496461)	(-4.84166)
LnTR						0.000905
						-0.535597

Table 10 reports findings for model 3, coefficients of GDP and squared GDP are significant at 1% level of significance and are positive and negative, respectively, for equations Eq.4 and baseline Eq; while coefficient of capital and labor ratio has negative sign and significant only in baseline eq. Similarly, trade openness has negative sign and significant at 1% level of significance, however, comparative advantage variable is found to be positive and significant showing that 1% increase in comparative advantage leads to 0.249% increase in energy use.

Table 4.10: Model 3 Dependent (EU)

Variable	Eq. 1	Eq.2	Eq.3	Eq. 4	Baseline Eq.
LNGDP	-0.33663	-11.804512	25.42732	45.76374***	55.02006***
	(-0.82148)	(-0.162415)	-1.442257	-8.219856	-13.66525
LNGDPSQR		0.818114	-1.84153	-3.31596***	-4.00228***
		(-0.157902)	(-1.44276)	(-8.11493)	(-13.5212)
K_L			0.002858		-9.9747***
			(-0.023486)	(-1.455)	(-4.20679)
LnTR				-0.04931	-0.11315***
				(-0.5181)	(-3.65109)
K_TR					0.249181***
					(-3.687336)

5 Conclusion

The study investigates dynamic relationships between economic growth and energy consumption via incorporating different variables such as trade oppresses, financial development, urbanization. Four different models are estimated, first three models are estimated for energy use, whereas, model 4 is estimated for energy intensity. The study employs ARDL bound test approach to discover long run relationships and concludes that there exists long run relationship for all four models. It concludes that trade openness positively related to energy use that is when country engages in trade it needs production of goods to export, which leads industries to produce more and consume more energy; while urbanization impacts negatively energy use for Pakistan suggesting that in urban areas are likely to adopt energy efficient technology. Economic growth is shown to have larger and positive impact on energy use, while financial development has negative impact on energy use. Since it is likely that financial development leads to energy and cost-efficient technologies in practical use. Among shares of economy, agriculture and manufacturing share has positive impact on energy use because these sectors need energy to produce. However, services share is shown to have negative effect on energy use, it leads to decrease in energy use. Capital to labor ratio and comparative advantage impact energy use negatively and positively.

5.1 Recommendations

The policy makers around country can look for the empirical results of this study, since it provides stages of energy use and economic growth relationship. We have witnessed a huge significant positive impact of GDP on energy use, suggesting that as GDP grows it significantly increases energy consumption. We have also found inverted U-shaped relationship between GDP and energy use, indicating that initially, as GDP grows it leads to significant increase in energy use and after achieving certain point GDP grows but energy use tends to decline. However,

initial impact is larger. For Pakistan, it is unaffordable to lose or restrict growth since it is main driver of development, therefore, use of cleaner and pollution-efficient energy should be promoted all over country to mitigate negative and hazardous outcomes occurring because of massive consumption of energy usage. Moreover, government of Pakistan should consider above situation (stages) while devising and policies related to energy. Trade openness and urbanization have negative significant impact on energy use, indicating that trade brings energy efficient and eco-friendly technology, therefore, trade should be promoted, and government should design policies to increase our trade with other countries. While urbanization leads to improvement in efficient use of public infrastructure, such as local public transport, in this way it lowers energy use, thus energy use causing pollution can be reduced if government takes serious measures to improve quality of public infrastructure. Financial development is also seen to lower use of energy, argument is well-developed financial markets accelerate home investment which attracts foreign inflows along with know-how and advanced and energy-efficient technology, thus reducing energy use by improving energy efficiency. Policy makers should pay heed to encourage loans and attempt to boost financial markets, which is also good for development.

Policy makers should also take into consideration economys sectors, i.e. agriculture, manufacturing and services. Agriculture sector and manufacturing sector are seen to increase energy use, while services sector is seen to lower energy use, government should introduce energy efficient and advanced technology and different sources for energy in agriculture and manufacturing sectors to save energy resources and usage. Growth rate of capital lowers energy use, since as capital grows, it is possible it grows with advancements of technologies, so government may target on capital, and policy may be devised to promote growth of capital, which ultimately would lower use of energy. In long run, emphasis should be given to adopting energy saving methods, such as energy mitigation and energy mix choices, investment in renewable energy resources should also be focused. The major goal should be to achieve efficiency in overall energy use by improving energy infrastructure and promoting financial development, trade openness.

References

Adams, D., Adams, K., Ullah, S., and Ullah, F. (2019). Globalisation, governance, accountability and the natural resource curse: Implications for socio-economic growth of oil-rich developing countries. *Resources Policy*, 61:128–140.

Akarca, A. T. and Long II, T. V. (1979). Energy and employment: a time-series analysis of the causal relationship. *Resources and Energy*, 2(2-3):151–162.

Alvarez-Herranz, A., Balsalobre-Lorente, D., Shahbaz, M., and Cantos, J. M. (2017). Energy innovation and renewable energy consumption in the correction of air pollution levels. *Energy Policy*, 105:386–397.

Aqeel, A. and Butt, M. S. (2001). The relationship between energy consumption and economic growth in pakistan. *Asia-Pacific Development Journal*, 8(2):101–110.

Bekaert, G. and Harvey, C. R. (2000). Foreign speculators and emerging equity markets. *The journal of finance*, 55(2):565–613.

Brown, J. C., Pusey, P., Goodwin, J., and Ottewill, R. (1975). Light scattering study of dynamic and time-averaged correlations in dispersions of charged particles. *Journal of Physics A: Mathematical and General*, 8(5):664.

Çoban, S. and Topcu, M. (2013). The nexus between financial development and energy consumption in the eu: A dynamic panel data analysis. *Energy Economics*, 39:81–88.

Engle, R. F. and Granger, C. W. (1987). Cointegration and error correction: representation, estimation, and testing. *Econometrica: journal of the Econometric Society*, pages 251–276.

Erol, U. and Yu, E. S. (1987). On the causal relationship between energy and income for industrial-

ized countries. *The Journal of Energy and Development*, pages 113–122.

Farhani, S. and Solarin, S. A. (2017). Financial development and energy demand in the united states: New evidence from combined cointegration and asymmetric causality tests. *Energy*, 134:1029–1037.

Furuoka, F. (2015). Financial development and energy consumption: Evidence from a heterogeneous panel of asian countries. *Renewable and Sustainable Energy Reviews*, 52:430–444.

Jena, P. R. and Grote, U. (2008). Growth-trade-environment nexus in india.

Johansen, S. and Juselius, K. (1990). Maximum likelihood estimation and inference on cointegrationwith applications to the demand for money. *Oxford Bulletin of Economics and statistics*, 52(2):169–210.

Kalimeris, P., Richardson, C., and Bithas, K. (2014). A meta-analysis investigation of the direction of the energy-gdp causal relationship: implications for the growth-degrowth dialogue. *Journal of Cleaner Production*, 67:1–13.

Kraft, J. and Kraft, A. (1978). On the relationship between energy and gnp. *The Journal of Energy and Development*, pages 401–403.

Ling, C. H., Ahmed, K., Muhamad, R. B., and Shahbaz, M. (2015). Decomposing the trade-environment nexus for malaysia: what do the technique, scale, composition, and comparative advantage effect indicate? *Environmental Science and Pollution Research*, 22(24):20131–20142.

Metcalf, G. E. (2008). An empirical analysis of energy intensity and its determinants at the state level. *The Energy Journal*, 29(3).

Nasreen, S., Anwar, S., and Ozturk, I. (2017). Financial stability, energy consumption and environmental quality: Evidence from south asian economies. *Renewable and Sustainable Energy Reviews*, 67:1105–1122.

Pesaran, M. H. (1997). The role of economic theory in modelling the long run. *The Economic Journal*, 107(440):178–191.

Pesaran, M. H. and Shin, Y. (1998). An autoregressive distributed-lag modelling approach to cointegration analysis. *Econometric Society Monographs*, 31:371–413.

Pesaran, M. H., Shin, Y., and Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics*, 16(3):289–326.

Sadorsky, P. (2011). Financial development and energy consumption in central and eastern european frontier economies. *Energy policy*, 39(2):999–1006.

Sbia, R., Shahbaz, M., and Hamdi, H. (2014). A contribution of foreign direct investment, clean energy, trade openness, carbon emissions and economic growth to energy demand in uae. *Economic modelling*, 36:191–197.

Thompson, P. and Taylor, T. G. (1995). The capital-energy substitutability debate: a new look. *The Review of Economics and Statistics*, pages 565–569.

Tugcu, C. T. and Topcu, M. (2018). Total, renewable and non-renewable energy consumption and economic growth: Revisiting the issue with an asymmetric point of view. *Energy*, 152:64–74.

Voigt, S., De Cian, E., Schymura, M., and Verdolini, E. (2014). Energy intensity developments in 40 major economies: structural change or technology improvement? *Energy Economics*, 41:47–62.

Wang, H., Ang, B., and Su, B. (2017). Assessing drivers of economy-wide energy use and emissions: Ida versus sda. *Energy Policy*, 107:585–599.

Yu, E. S. and Choi, J.-Y. (1985). The causal relationship between energy and gnp: an international comparison. *The Journal of Energy and Development*, pages 249–272.

Appendix

Table 5.1: Variables Summary

Indicator Name	Long definition	Unit	Source
Energy use	Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport.	(kg of oil equivalent per capita)	IEA Statistics OECD/IEA (http://www.iea.org/stats/index.asp), subject to https://www.iea.org/t&c/termsandconditions/
Energy intensity	Ratio of energy consumption to gross domestic product.	kt of CO2 equivalent	WDI
GDP per capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	(constant 2010 US$)	WDI
Trade	Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product.	(% of GDP)	WDI
Urban population growth	Urban population refers to people living in urban areas as defined by national statistical offices. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects.	(% annual)	WDI
Domestic credit to private sector	Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment.	(% of GDP)	IFS
Manufacturing, value added	Manufacturing refers to industries belonging to ISIC divisions 15-37.	(constant 2010 US$)	WDI
Agriculture, value added	Agriculture corresponds to ISIC divisions 1-5 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.	(constant 2010 US$)	WDI

Services, etc., value added	Services correspond to ISIC divisions 50-99. They include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services. Also included are imputed bank service charges, import duties, and any statistical discrepancies noted by national compilers as well as discrepancies arising from rescaling.	(constant 2010 US$)	WDI
Labor force participation rate, total	Labor force participation rate is the proportion of the population ages 15 and older that is economically active: all people who supply labor for the production of goods and services during a specified period.	(% of total) (modeled ILO estimate)	WDI
Gross fixed capital formation	Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.	(constant 2010 US$)	WDI
Capital-Labor ratio	capital is divided by labor force to get capital-labor ratio	(%)	WDI
Comparative advantage	Capital-labor ratio multiplied by Trade openness to get comparative advantage	(%)	WDI
Gross fixed capital formation	Average annual growth of gross fixed capital formation based on constant local currency. Aggregates are based on constant 2010 U.S. dollars.	(annual % growth)	WDI

Table 5.2: Diagnostic Test Results

Model (1)		
Test	**F-statistics**	**Prob.**
Jarque-Bera Test	0.735054	0.692445
ARCH test for Hetero	0.787691	0.4685
Autocorrelation LM Test	19.95133	0.0022
Model (2)		
Jarque-Bera Test	1.344169	0.510643
ARCH test for Hetero	0.356434	0.7045
Autocorrelation LM Test	3.492315	0.1326
Model (3)		
Jarque-Bera Test	3.380483	0.184475
ARCH test for Hetero	0.019048	0.9811
Autocorrelation LM Test	2.237430	0.1773
Model (4)		
Jarque-Bera Test	1.462779	0.481240
ARCH test for Hetero	0.621148	0.6549
Autocorrelation LM Test	6.684165	0.2814

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 84-96

The Effect of Transformational Leadership in promoting Organizational Citizenship Behavior in Higher Education Institutions

Mahwish Amanat[1] & Sobia Sultana*[2]

[1,2]*Lahore College for Women University, Lahore*

Abstract. Transformational leadership and organizational citizenship behavior are the valuable components of an organization and these components become a core competency to improve organizational performance now a days. Transformational leadership is different from traditional leadership style in the way that it gives weight to the sensory perception, guides in making decisions and helps followers in developing citizenship behavior. Transformational leadership has a significant role in building up employees organizational citizenship behavior through idealized influence, individualized consideration, inspirational motivation and intellectual stimulation. Keeping in view the importance of organizational citizenship behavior the present contextual framework was established to explain the relationship between the stated variables. The study was explanatory and cross-sectional approach was employed to accumulate data from the academic staff of public sector universities. The target area that was selected for the study was the city of Lahore, Punjab, as most of the well-known universities are present in Lahore. The data collected from teaching faculty have been analyzed by employing SPSS (22.0). Descriptive Statistics, Frequency Analysis, Pearson Correlation, Regression Coefficients and Reliability Analyses were used to examine data. Results of regression analysis show that transformational leadership has significant positive effect on organizational citizenship behavior.

Key words: Transformational leadership, organizational citizenship behavior, Higher Education Institutions, Public Sector

1 Introduction

Nowadays in major organizations, the vital role in performing and accomplishing organizational goals are through effective leadership. Transformational leadership (TL) style is adopted by the managers or leaders to encourage their employees to take part in organizational citizenship behaviors (OCB) that are favorable for organizational growth. The basic objective of the study is to assess the transformational leadership style adopted by leaders and the extent of organizational citizenship behavior developed in their subordinates.

The performance of an educational institution depends on the dedication of academic staff who have a high degree of organizational citizenship behavior and also on the transformational

*Corresponding author.
Email: sobiahassan129@gmail.com

leadership qualities of their supervisors (Nasra and Heilbrunn, 2016). The success of a university is aligned with the voluntary work performance of teachers who are associated with that particular institution (Arar and Nasra, 2019). These behaviors that are voluntary are considered additional role behaviors or organizational citizenship behavior (Organ, 1988). Turnipseed (1996) investigated that OCB is not in the description of the tasks of an employee's contract but organizations assume that this type of employee behavior (OCB) improves the innovation, creativity, flexibility and eventually it is amplified in the competence of an institution.

The realistic spirit of transformational leaders shows that from their leadership style they promote normal people to a surprising level of achievement and motivate them to carry out work beyond the level of expectations and boost the extra role behavior of their subordinates (Khalili, 2017). Followers of transformational leaders have belief and confidence in their leaders because leaders provoked them to attain specific targets within the given time frame and perform beyond expectations (Butar et al., 2019).

Leaders who have transformational leadership qualities always participate in captivating behaviors, foster enthusiasm among their followers and treat followers with individualized consideration (Ogola et al., 2017). In this way followers are transformed by their leaders behavior and it also help them to accomplish their full talent. The primary goal of transformational leader is to give prominence on followers growth. Theory of transformational leadership as compared to early charismatic theories has always emphasized on the development of followers towards self-sufficiency and empowerment (Graham, 1995). Bass and Avolio (1990) in their research stated that leaders who have a transformational leadership style increase the abilities of followers to think innovatively and creatively for their own development.

Organizational citizenship behavior is also called prosocial behavior, not included in employee's authorized job but affects the overall performance of the organization (Organ, 1988). Organ and ORGAN (1990) elaborated that leadership style has an immense influence on employee work satisfaction, which consequently is related to altruism and awareness. The additional role behavior improves the individual's moral and ethical behavior towards others, although these are not the contractual obligation of an individual's work, but rather it increases the efficiency of an individual and the organization. While working in the organization, employees with good citizenship behaviors maintain and facilitate their co-workers in the production of efficient and effective work tasks, making them more consistent and linked to the vision and mission of the organization. Jiao et al. (2011) indicated that the employee citizenship behavior always come in different shapes and types. Employee always try to go beyond expectations, try to be cooperative, supportive and always offers to lend a hand. These types of OCB should be actively encouraged in organizations for better performance and increased profitability.

Khaola and Sephelane (2013)s stated that transformational leaders try to achieve performance beyond expectations and should always motivate workers to engage in behavior that includes an additional role such as OCB. Ali and Waqar (2013) examined that teachers having transformational leadership behavior are found to have higher degree of citizenship behavior in comparison with other leadership styles (transactional and laissez faire). Hashemzehi and Zabihi (2012) suggested that each organization wants its staff to carry out those activities that are not part of their work to perform better. Mester et al. (2003) studied the relationship of employee behavior with leadership styles and found that stronger association is present between TL and OCB. The flexible behavior (OCB) that is not the part of job description always encourages the active work of the organization. Therefore, based on the extant literature, it is important to explore the attributes of transformational leadership with organizational citizenship behavior.

1.1 Purpose of the Research

The basic purpose of this study is to determine the impact of transformational leadership and their dimensions on OCB in the academic institutions of Lahore. The main objectives were:

- To investigate the influence of transformational leadership on followers' organizational citizenship behavior.
- To investigate the relationship of transformational leaderships dimensions with organizational citizenship behavior

2 Literature review

3 Transformational Leadership

Transformational leadership has its roots in the transformative leadership that was first presented by Forester and Clegg (1991). It is identified as a process where the level of motivation and ethical values are highest among leaders. Farahnak et al. (2020) stated that the attitude of leaders (transformational leadership) promotes the change in followers that ultimately affect the success of an organization. Bass and Bass Bernard (1985) theorized that transformational leadership comprises of four attributes: idealized influence, individualized consideration, intellectual stimulation, and inspirational motivation.

3.1 Idealized Influence

Wan Omar and Hussin (2013) determined that idealized influence refers to the subordinate's opinion of the leader regarding trust, consistency, power, and self-confidence because individuals make efforts to replicate and reproduce behavior. Such a leader has admiration, a sense of responsibility, self-confidence, and has conversations with his subordinates.

3.2 Inspirational Motivation

Wan Omar and Hussin (2013) explained that inspirational motivation is the kind of characteristic in which the leader is motivating his subordinates to do a better job and help them achieve the objectives of the organization. This type of behavior helps strengthen the efforts of his followers. Leadership is the main source of inspirational motivation to achieve the organizational objective and always set the best example for its followers.

3.3 Individualized Consideration

Ismail et al. (2011) found that the leader must be very careful with the individual needs and requirements of his subordinates, which are necessary for the growth and achievement of the objectives of the organization. To increase the potential, the leader always helps develop the follower's skills. Leaders can involve subordinates in the decision-making process, and this is one of the positive effects of individualized consideration.

3.4 Intellectual Stimulation

Rafferty and Griffin (2004) defineed that its leaders ability to keep their subordinates thinking about problems, asking questions about those problems and improving thinking skills to introduce new ways of doing things based on considerations, standards and beliefs which is related to intellectual stimulation.

3.5 Organizational Citizenship Behavior (OCB)

Organizational citizenship behavior has been comprehensively studied for past many years (Lo and Ramayah, 2009). This concept implies that good citizens are those who behave well and perform in the necessary manner in the organization to socialize with their co-workers (Bateman and Organ, 1983). Cohen and Avrahami (2006) defined OCB as the voluntary contribution of employees in organizational activities with dedication in order to increase efficiency without any greed of rewards. When employees try to favor the community without any gain and always ready to do all those tasks which are non-obligatory, this type of behavior is termed as OCB (Ehtiyar et al., 2010). Oetomo et al. (2011) stated that OCB has a significant influence to improve the quality of service in workplace. Such activities are not included in their job description as employees do these task voluntarily and no penalty will be charged in case an employee deviates from this type of behavior (Podsakoff et al., 2000).

Organ (1988) divided OCB in 5 dimensions that are: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Altruism. It refer as a helping attitude in which an individual helps others in their problem so that they can complete their assigned tasks in rare situations (Smith et al., 1983). Altruism support any individual that could be coworkers, customers, supervisor and acquaintances (Organ, 1977). It claims to help a colleague in a workplace by another co-worker to complete the assigned task (Lo and Ramayah, 2009). Sportsmanship. It is when employees want to give up their personal concern for the interest of others. It is a behavior in which an individual avoids complaining about small things that sometimes go wrong, ready to work in awkward situations, showing positive behavior in difficult situations, all this includes sportsmanship (Organ, 1988). Courtesy. It contains such activities that can be effective in solving the problems that occur in organizations. This type of behavior is very useful in the decision-making process regarding important business matters. Courtesy means that a co-worker boosts his colleague when he feels discouraged, depressed and discouraged by the growth of his career (Lo and Ramayah, 2009). Conscientiousness. It recognizes that a particular member or staff within an organization is conscientious, coordinated and responsible (Lo and Ramayah, 2009). It discusses that these type of workers go ahead of their official work obligations to perform well, whether they do late sitting to complete their assigned tasks (Organ, 1988). Civic Virtue. It establishes helping management activities within the workplace and to promote the involvement of personnel in the social activities of the corporation (Deluga, 1998); the contribution of the employees in the organizations, including participation in meetings that are not part of their job description. Organ (1988) stated that civic virtue is the excellent component of this extra role behavior. Civic virtue is readiness of employees to assist each other for shared well-being by completing ones portion of task (Lovett, 2006).

3.6 Transformational Leadership and Citizenship Behavior

Transformational leadership is identified as a procedure by which a faith, admiration and respect is developed between followers and their leader, that motivates them to perform beyond

expectations. Leaders with transformational style encourage their subordinates by giving them autonomy and priority for the mutual cause over individual well-being (Arnold, 2017). When employees share a vision without considering direct personal achievement, they can be motivated to contribute to the collective goal and perform more than their job responsibilities. Lee et al. (2018) investigated that due to the transformative leadership style of managers; subordinates show a higher level of OCB. Numerous studies examine the association of transformational leadership and citizenship behavior (Moon, 2016; Wang et al., 2005), but this relationship in terms of higher education of Pakistan is still in scarce. Social exchange theory also provides the basis for the relationship of transformational leadership and citizenship behavior. In perspective of social exchange theory, when leaders adopt positive leadership namely transformational leadership in return employees willingly show citizenship behavior. Khalili (2017) explained the significance of leadership in the alteration of citizenship behavior of employees as well. Several researches effort to explore the association among transformational leadership and citizenship behavior, where four dimension namely idealized influence, individualized consideration, intellectual stimulation, and inspirational motivation are used to measure transformational leadership (Guay and Choi, 2015; Kim and Park, 2019). These studies concluded that all four dimensions have significant and positive association with citizenship behavior. Therefore, it could be hypothesized that citizenship behavior of employees affiliated with higher education could be promoted by ensuring transformational leadership. Also, to measure the dimensional effect of transformational leadership on citizenship behavior of higher education employees. Based on above discussion following hypotheses could be develop:

H_1: *Idealized influence has a significant effect on increases employees organizational citizenship behavior.*

H_2: *Individualized consideration has a significant effect on employees organizational citizenship behavior.*

H_3: *Intellectual stimulation has a significant effect on employees organizational citizenship behavior.*

H_4: *Inspirational motivation has a significant effect on employees organizational citizenship behavior.*

H_5: *Level of transformational leadership has a significant effect on employees organizational citizenship behavior*

3.7 Conceptual Framework

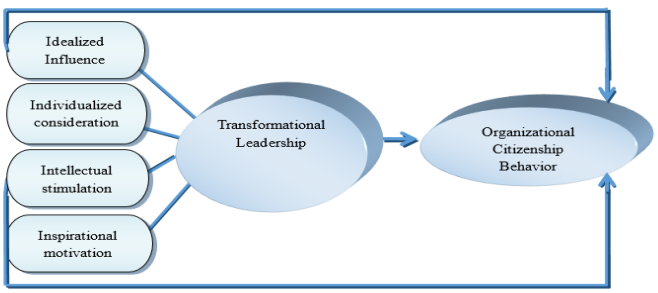

Figure 1: Conceptual Framework of Transformational Leadership and Employee Organizational Citizenship Behaviour

4 Methodology

This study employed quantitative approach in which data were collected through questionnaire from the academic staff of different public owned universities of Lahore. Convenience sampling was used as a sampling technique in this research. Approximately 310 questionnaires were distributed out of which 289 were fit for research analysis. The questionnaire was adopted from the following authors.

Table 4.1: Instrument Adoption

Variables		Total Questions included in Questionnaire	Adopted from
Independent	Transformational Leadership	1 to 19	Dubinsky, Yammarino, & Jolson (1995)
Dependent	Organizational Citizenship Behavior	20 to 41	Yücel, ., & Demirel, Y. (2012)

5 Results

There are two main parts of questionnaire. First part contains general information of respondents comprising of institution, gender, age, qualification, designation, nature of job, and total teaching experience in current institution. Second part consists of the analysis related to the main variables transformational leadership and OCB. The frequency analysis of the demographics is given below.

Table 5.1: Academic Institution

		Frequency	Percent	Cumulative Percent
Valid	Government College University	39	13.5	13.5
	UET	49	17	30.4
	University of the Punjab	101	34.9	65.4
	LCWU	59	20.4	85.8
	Kinnaird College University	41	14.2	100
	Total	289	100	

Questionnaires were distributed among five public sector universities. The data collected from Government College University was 13.5%, 17% from University of Engineering and Technology (UET), 34.9% from University of the Punjab, 20.4% from Lahore College for Women University (LCWU) and 14.2% data has been gathered from Kinnaird College University.

Table 5.2: Gender

		Frequency	Percent	Cumulative Percent
Valid	Male	156	54	54
	Female	133	46	100
	Total	289	100	

Table 5.3: Age of Respondents

		Frequency	Percent	Cumulative Percent
Valid	20-30	49	17	17
	31-40	139	48.1	65.1
	41-50	86	29.8	94.8
	51 and above	15	5.2	100
	Total	289	100	

The above table shows that 17% (n=49) of the respondents have ages between 20-30 years.48.1% (n=139) of the respondents have ages between 31 to 40, 29.8% (n=86) of them have ages from 41 to 50 and 5.2% (n=15) respondents have ages between 51 and above.

Table 5.4: Marital Status

		Frequency	Percent	Cumulative Percent
Valid	Single	181	62.6	62.6
	Married	108	37.4	100
	Total	289	100	

The table shows that 62.6% of respondents are married whereas 37.4% are single.

Table 5.5: Qualification

		Frequency	Percent	Cumulative Percent
Valid	Bachelor	9	3.1	3.1
	Master	78	27	30.1
	M.Phil.	143	49.5	79.6
	PhD	59	20.4	100
	Total	289	100	

Most of the employees have done their M.Phil. degree i.e. 49.5% (n=143) and 20.4% (n=59) employees have done Ph.D.

Table 5.6: Nature of Job

		Frequency	Percent	Cumulative Percent
Valid	Permanent	164	56.7	56.7
	Contract	125	43.3	100
	Total	289	100	

Total number of respondents having permanent job was (n=164) with percentage 56.7% and the respondents with contractual job have frequency (n=125) with 43.3%.

Table 5.7: Designation

		Frequency	Percent	Cumulative Percent
Valid	Assistant Lecturer	67	23.2	23.2
	Lecturer	176	60.9	84.1
	Assistant Professor	18	6.2	90.3
	Associate Professor	9	3.1	93.4
	Professor	19	6.6	100
	Total	289	100	

Above table display the values of different designations along their frequencies and percentages.

Table 5.8: Teaching Experience

		Frequency	Percent	Cumulative Percent
Valid	Less than 1 year	18	6.2	6.2
	1-3 years	90	31.1	37.4
	4-6 years	86	29.8	67.1
	7-9 years	58	20.1	87.2
	10 or above	37	12.8	100
	Total	289	100	

The description of teaching experience were ; 6.2% (n=18) teachers have experience less than 1 year, 31.1% (n=90) teachers have experience from 1-3 years, 29.8% (n=86) teachers have experience of 4-6years, 20.1% (n=58) teachers have experience of 7-9 years and 37 teachers with percentage 12.8% have experience of 10 or above years.

Table 5.9:

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	N
Idealized influence	3.7128	0.6857	-0.135	0.143	-0.359	0.286
Individualized Consideration	3.605	0.60647	-0.309	0.143	-0.253	0.286
Intellectual Stimulation	3.5415	0.59731	-0.476	0.143	0.171	0.286
Inspirational Motivation	3.8228	0.58372	-0.845	0.143	1.025	0.286
OCB	3.8124	0.394	0.282	0.143	0.074	0.286

The mean values and corresponding standard deviations of independent variable (TL) along with dimensions idealized influence, individualized consideration, intellectual stimulation, inspirational motivation and dependent variable (OCB) are provided as (M= 3.71, 3.60, 3.54, 3.82 and 3.81) with S.D (0.69, 0.61, 0.60, 0.58 and 0.39). Among all the values, idealized influence and inspirational motivation have the highest values i.e. (M= 3.71 and 3.82) which means that the teachers were more pleased with idealized influence and inspirational motivation behaviors of their leaders.

Table 5.10: Reliability Analysis

Variables	Cronbachs Alpha	Number of items
Transformational Leadership	0.854	19
Organizational Citizenship Behavior	0.828	22
Overall reliability	0.885	41

The table depicts that all the variables have acceptable range of values.

There is a significant relationship between OCB, Transformational leadership and its dimensions at 0.01 level significance.

H_1: *Idealized influence has a significant effect on increases employees organizational citizenship behavior.*

Table 13 shows value of R2, Adjusted R2, F, Beta, t, and significance level. It determines the value of R square is 0.113, which defined that idealized influence has 11% influence on OCB. The value of P is .000 that depicts model significance at 0.01 level. Durbin Watson value (1.829) lies between 0 to 4 which shows that there is no autocorrelation between error terms, error terms are independent of each other. The linear regression model for Idealized Influence is = 68.082+1.063(OCB). The given equation show that if there is 1-unit change in the idealized influence than there would be 1.063 units change in the organizational citizenship behavior. The P value of idealized influence is .000 that is less than (P¡0.01) which expresses that idealized influence has significant influence on OCB.

H_2: *Individualized consideration has a significant effect on employees organizational citizenship behavior.*

Table 5.11: Correlation Matrix

		OCB	Idealized Influence	Individualized Consideration	Intellectual Stimulation	Inspirational Motivation
OCB	Pearson Correlation					
	Sig. (2-tailed)					
	N	289				
Idealized Influence	Pearson Correlation	.436**				
	Sig. (2-tailed)	0				
	N	289	289			
Individualized Consideration	Pearson Correlation	.498**	.544**			
	Sig. (2-tailed)	0.001	0			
	N	289	289	289		
Intellectual Stimulation	Pearson Correlation	.563**	.468**	.487**		
	Sig. (2-tailed)	0	0	0		
	N	289	289	289	289	
Inspirational Motivation	Pearson Correlation	.692**	.389**	.418**	.557**	
	Sig. (2-tailed)	0	0	0	0	
	N	289	289	289	289	289

Table 5.12: Regression Table

Variables	R2	Adj. R2	F	Beta	t	Sig.
Transformational Leadership → OCB	0.221	0.218	81.43	0.44	9.02	0
Idealized Influence → OCB	0.113	0.11	36.62	1.06	6.05	0
Individualized Consideration → OCB	0.039	0.036	11.66	0.47	3.41	0.001
Intellectual Stimulation → OCB	0.069	0.066	21.4	0.95	4.62	0
Inspirational Motivation → OCB	0.479	0.477	264	2.05	16.24	0

Table 13 shows that the value of R square is 0.039, indicating that the effect of individualized consideration on OCB is 3.6%. The P-value is .000 which is significant at 0.01 level. Durbin Watson value (1.886) lies between 0 to 4 shows that there is no autocorrelation between error terms, error terms are independent of each other. The linear regression model for Individualized consideration is =73.689+0.471(OCB). The equation shows that if 1unit change occurs in the individualized consideration than as a result 0.471 units change in the organizational citizenship behavior. The P-value of individualized consideration is .000, which demonstrate that individualized consideration is significantly and positively influence OCB.

H_3: *Intellectual stimulation has a significant effect on employees organizational citizenship behavior.*

Table 13 indicates that the value of R square is 0.069, which indicates that the impact of intellectual stimulation on OCB is 6.6%. The P-value is .000 that is significant at 0.01 level. Durbin Watson value (1.837) lies between 0 to 4, which shows that there is no autocorrelation between error terms, error terms are independent of each other. The model of linear regression for intellectual stimulation is =70.334+0.956 (OCB). The given equation displays that if 1-unit variance made in the intellectual stimulation than as a result 0.956 units change in the organizational citizenship behavior. The P-value of intellectual stimulation is significant and positive.

H_4: *Inspirational motivation has a significant effect on employees organizational citizenship behavior.*

Table 13 demonstrates that the value of R square is 0.479 which defines that the impact of inspirational motivation on OCB is 47.7%. The P-value is .000 which is significant at level of 0.01. Durbin Watson value 1.904 lies between 0 to 4 which shows that there is no autocorrelation between error terms, error terms are independent of each other. The model of linear regression for inspirational motivation is =44.578+2.056 (OCB). The equation demonstrates that if there is 1unit change in the inspirational motivation than 2.056 units change in the organizational citizenship behavior. The P value of inspirational motivation is .000 (P¡0.01) displayed that inspirational motivation has significant influence on OCB.

H_5: *Level of transformational leadership has a significant effect on employees organizational citizenship behavior.*

Table 13 indicates that the R square value is 0.221 which defined that the influence of transformational leadership on OCB is 21.8%. The P-value is also significant and positive. Durbin Watson value 1.969 lies between 0 to 4 which shows that there is no autocorrelation between error terms, error terms are independent of each other. The model of linear regression for transformational leadership is =52.727+0.446 (OCB). The equation demonstrates that if there is 1unit change in the transformational leadership than 0.446 units change in the dependent variable (OCB). The P-value of transformational leadership has a significant and positive influence on OCB.

6 Discussion

The results of the present research showed that with the help of transformational leadership the academic staff is more likely to assist their co-workers. Previous studies also evident similar results that when transformational leadership is ensured employees willingly help their colleagues at workplace (Khalili, 2017). The findings of regression analysis also discovered that academic staff who are committed with their leadership are always trying to assist their coworker with devotion and dedication. Findings also revealed that transformational leadership has a progressive influential effect on OCB. These results are consistent with old studies that employee strong affiliation and commitment due to transformational leadership enhance their citizenship behavior (Kim and Park, 2019). In addition, the analysis based on different dimensions has discovered that idealized influence, individualized consideration, intellectual stimulation and inspirational motivation have significant influence on OCB. These results are also consistent with previous studies which measure transformational leadership using all the four dimensions and explore its impact on citizenship behavior (Guay and Choi, 2015; Khalili, 2017; Kim and Park, 2019).

7 Conclusion

This study has empirically conceptualized and tested OCB of academic staff in the context of higher education institutions. It is an effort to determine the influence of transformational leadership on organizational citizenship behavior. With the help of analysis and interpretation made on results, it could be concluded that all of the dimensions of transformational leadership have significant association with OCB. In summary, it has been concluded that the current study has persistent value in todays OCB approach to the higher education setting.

References

Ali, U. and Waqar, S. (2013). Teachers organizational citizenship behavior working under different leadership styles. *Pakistan Journal of Psychological Research*, 28(2).

Arar, K. and Nasra, M. A. (2019). Leadership style, occupational perception and organizational citizenship behavior in the arab education system in israel. *Journal of Educational Administration*.

Arnold, K. A. (2017). Transformational leadership and employee psychological well-being: A review and directions for future research. *Journal of Occupational Health Psychology*, 22(3):381.

Bass, B. M. and Avolio, B. J. (1990). *Transformational leadership development: Manual for the multifactor leadership questionnaire*. Consulting Psychologists Press.

Bass, B. M. and Bass Bernard, M. (1985). Leadership and performance beyond expectations.

Bateman, T. S. and Organ, D. W. (1983). Job satisfaction and the good soldier: The relationship between affect and employee citizenship. *Academy of management Journal*, 26(4):587–595.

Butar, I. D. B., Sendjaya, S., and Pekerti, A. A. (2019). Transformational leadership and follower citizenship behavior: The roles of paternalism and institutional collectivism. In *Leading for High Performance in Asia*, pages 19–40. Springer.

Cohen, A. and Avrahami, A. (2006). The relationship between individualism, collectivism, the perception of justice, demographic characteristics and organisational citizenship behaviour. *The Service Industries Journal*, 26(8):889–901.

Deluga, R. J. (1998). Leader-member exchange quality and effectiveness ratings: The role of subordinate-supervisor conscientiousness similarity. *Group & Organization Management*, 23(2):189–216.

Ehtiyar, V. R., Aktas Alan, A., and Oemueris, E. (2010). The role of organizational citizenship behavior on university students' academic success. *Tourism and Hospitality Management*, 16(1):47–61.

Farahnak, L. R., Ehrhart, M. G., Torres, E. M., and Aarons, G. A. (2020). The influence of transformational leadership and leader attitudes on subordinate attitudes and implementation success. *Journal of Leadership & Organizational Studies*, 27(1):98–111.

Forester, J. and Clegg, S. R. (1991). Burns, jm (1978). leadership. new york: Harper and row. *Leadership Quarterly*, 2(1).

Graham, J. W. (1995). Leadership, moral development, and citizenship behavior. *Business ethics quarterly*, pages 43–54.

Guay, R. P. and Choi, D. (2015). To whom does transformational leadership matter more? an examination of neurotic and introverted followers and their organizational citizenship behavior. *The Leadership Quarterly*, 26(5):851–862.

Hashemzehi, R. and Zabihi, M. (2012). The relationship between leadership styles and organizational citizenship behavior. *African Journal of Business Management*, 6(9):3310–3319.

Ismail, A., Mohamed, H. A.-B., Sulaiman, A. Z., Mohamad, M. H., and Yusuf, M. H. (2011). An empirical study of the relationship between transformational leadership, empowerment and organizational commitment. *Business and Economics Research Journal*, 2(1):89.

Jiao, C., Richards, D. A., and Zhang, K. (2011). Leadership and organizational citizenship behavior: Ocb-specific meanings as mediators. *Journal of Business and Psychology*, 26(1):11–25.

Khalili, A. (2017). Transformational leadership and organizational citizenship behavior. *Leadership & Organization Development Journal*.

Khaola, P. P. and Sephelane, R. (2013). Leadership, organisational citizenship and innovative work behaviours in lesotho: Exploratory evidence. *Journal of Language, Technology & Entrepreneurship in Africa*, 4(2):46–58.

Kim, E.-J. and Park, S. (2019). The role of transformational leadership in citizenship behavior. *International journal of manpower*.

Lee, Y. H., Woo, B., and Kim, Y. (2018). Transformational leadership and organizational citizenship behavior: Mediating role of affective commitment. *International Journal of Sports Science & Coaching*, 13(3):373–382.

Lo, M.-C. and Ramayah, T. (2009). Dimensionality of organizational citizenship behavior (ocb) in a multicultural society: The case of malaysia. *International Business Research*, 2(1):48–55.

Lovett, F. (2006). Republicanism.

Mester, C., Visser, D., Roodt, G., and Kellerman, R. (2003). Leadership style and its relation to employee attitudes and behaviour. *SA Journal of Industrial Psychology*, 29(2):72–82.

Moon, K.-K. (2016). The effects of diversity and transformational leadership climate on organizational citizenship behavior in the us federal government: An organizational-level longitudinal study. *Public Performance & Management Review*, 40(2):361–381.

Nasra, M. A. and Heilbrunn, S. (2016). Transformational leadership and organizational citizenship behavior in the arab educational system in israel: The impact of trust and job satisfaction. *Educational Management Administration & Leadership*, 44(3):380–396.

Oetomo, H. W. et al. (2011). The effect of job motivation, work environment and leadership on organizational citizenship behavior, job satisfaction and public service quality in magetan, east java, indonesia. *International Journal of Economics and Management Engineering*, 5(3):277–285.

Ogola, M. et al. (2017). The influence of individualized consideration leadership behavior on employee performance in small and medium enterprises in kenya.

Organ, D. W. (1977). A reappraisal and reinterpretation of the satisfaction-causes-performance hypothesis. *Academy of management Review*, 2(1):46–53.

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome.* Lexington Books/DC Heath and Com.

Organ, D. W. and ORGAN, D. (1990). The motivational basis of organizational citizenship behavior.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., and Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of management*, 26(3):513–563.

Rafferty, A. E. and Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *The leadership quarterly*, 15(3):329–354.

Smith, C., Organ, D. W., and Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of applied psychology*, 68(4):653.

Turnipseed, D. (1996). Organization citizenship behaviour: an examination of the influence of the workplace. *Leadership & Organization Development Journal*.

Wan Omar, W. and Hussin, F. (2013). Transformational leadership style and job satisfaction relationship: A study of structural equation modeling (sem). *International Journal of Academic Research in Business and Social Sciences (IJARBSS)*, 3(2):346–365.

Wang, H., Law, K. S., Hackett, R. D., Wang, D., and Chen, Z. X. (2005). Leader-member exchange as a mediator of the relationship between transformational leadership and followers' performance and organizational citizenship behavior. *Academy of management Journal*, 48(3):420–432.

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 97-115

Pakistan Monetary Policy in terms of Bank Lending and Asset Price Channels

Muhammad Zeeshan Younas*

Quaid e Azam University, Islamabad

Abstract. Study in hand inspects the monetary policy transmission mechanisms in Pakistan with a special focus on bank lending and asset price channels. Monthly data over the period 2000M7-2016M12 are being used for the short run analysis of monetary policy. The lending and asset price transmission channels remain largely unexplored since financial reforms and pursuance of market-based monetary policy instruments. The empirical exploration is based on SVAR framework. The results show that the monetary aggregates targeting agenda is still operative in effecting the output and price level. Bank lending have a non-trivial part through the investment channel and share prices through wealth effect on price level and output, while the conventional interest rate channel seemed to be ineffective in the transmission mechanism process in Pakistan. The findings of generalized impulse response functions are backed by the generalized error forecast variance decomposition analysis. In addition to domestic variables, external shocks appear to have a strong influence on inflation and output in Pakistan.

Key words: Lending Channels, Asset Price Channels, Monetary Policy, Structural VAR, Pakistan

1 Introduction

The simple objective behind economic policies is to ensure public welfare, and to meet this objective the government pursues several policies, including monetary and fiscal policies. Monetary policy narrows down the objective of welfare maximization by focusing on price and output stabilization (Blanchard and Galí, 2010). It is considered as actions taken by the policy makers to adjust the quality, accessibility or cost of money. Generally, it is referred as measures taken by the central banks to expand (or contract) its credit as per the demand of economy. Besides pursuing output and price stability, monetary policy can be used to achieve stable exchange rates, foreign exchange (FX) reserves and policy rates to avoid the fiscal distractions. Insufficient aggregate demand results in unemployment and excess demand results in inflation. It is the sole responsibility of the monetary authorities to keep a balance between unemployment and inflation.

As far as Pakistan is concerned, the emphasis of the State Bank of Pakistan (SBP) is to maintain stable prices, reliability of financial system and optimal use of productive resources of country. Targets of economic growth and inflation established by the authorities are few monetary

*Corresponding author.
Email: mrzee38@yahoo.com

policy objectives as stated by the SBP Act of 1956. It is at disposal of SBP to achieve these objectives by choosing an effective monetary framework. Act further states that the SBP is to conduct monetary and credit policy consistent with the government targets for real GDP growth and inflation. High and volatile inflation adversely effects the development of financial system and it hinders the optimum resource allocation as it obscures relative price changes (Qayyum, 2008).

The monetary transmission mechanisms in developing economies get affected by the world main central banks and financial institutions (Aleem, 2010). Due to this, the model specified for these countries differs from the models of developed economies. Otherwise, this leads to the problem of model specification as explained by Sims (1980). It needs to have a clear insight of all monetary policy transmission mechanisms through which it disturbs the real economy in order to use it effectively as a tool of stabilization. Because of this complexity, transmission mechanism is also recognized as black box because there is not only one transmission mechanism. To implement the monetary policy successfully, economists need to know the active transmission mechanism of the monetary policy. However, there is no consensus about exact channel through which monetary policy employs its impression on the real economy. For the successful implementation of monetary policy, the monetary authorities must have a precise valuation of timing and effect of their policies actions on the economy (Mishkin, 1995). The fundamental objective of this study is to analyze the various transmission channels through which the monetary policy actions are transmitted on macro variables like real output and inflation. The main focus is to study the effect of credit and asset price channels of monetary policy on inflation and real output in Pakistan, using time series data covering the period of July 2000 to December 2016. The main objectives of this study are:

- To investigate the influence of credit and asset price channels of monetary policy on inflation and real output in Pakistan.
- To determine which transmission channel is relatively more effective in Pakistan to control inflation and get output stability.

Besides, the present study also analyzes the impacts of oil prices and foreign prices on real output and inflation in Pakistan. The external variables are of much importance as Pakistan is an open small economy and one of the factors that are assumed to be important while determining the inflation rate in Pakistan is the CPI of countries from where major part of Pakistans imports takes place as shown in Figure 1. In 2007, inflation in both countries picked up because of global financial crisis, which remained persistent till 2009. After 2009, when oil prices decreased the inflationary pressure in both the countries also diminishes. The trend of price movements is same; hence CPI of trading partner is an important foreign variable that we included in our analysis.

Source: Constructed by authors

2 Literature Review

2.1 Transmission Channels of Monetary Policy

There is a plethora of studies available that deals with the monetary policy transmission channels, which is a very complex and thought-provoking theme because there is not only one but multiple channels through which the central bank policies operate. The research on the

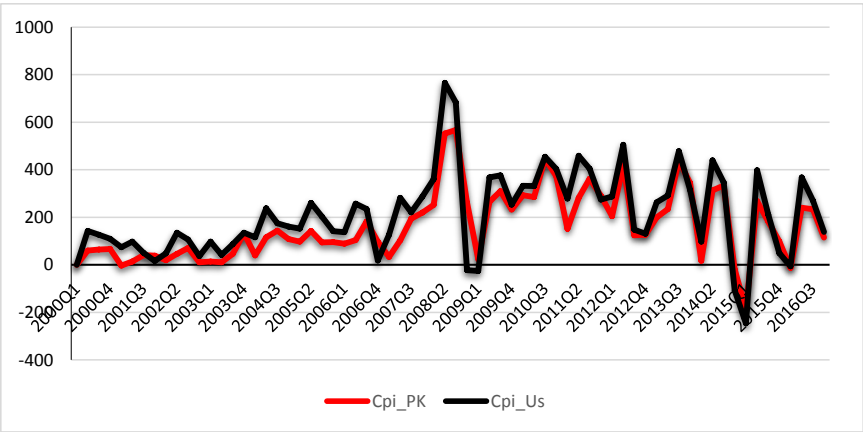

Figure 1: CPI of Pakistan and major import partner US for the period 2000 to 2016

topic of the transmission mechanisms is quite diverse and extends from a macroeconomic perspective to the microeconomic perspective. To study the relative significance of channels of monetary transmission in both developing and developed countries, plentiful researches have been conducted. A prominent study with the perspective of monetary policy is conducted by Mishkin (1995), which depicts major monetary policy transmission channels containing exchange rate channel, equity price channel, interest rate channel, wealth effect, housing and land price channel, balance sheet channel, bank lending channel and financial crisis channel. Kuttner and Mosser (2002) provided a seminal contribution in this regard and proposed the following monetary policy transmission mechanism in an explicit way.

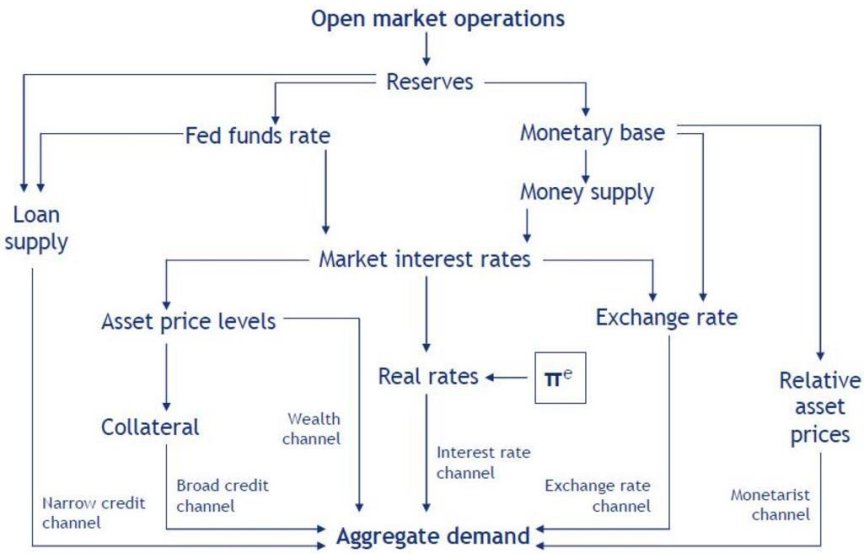

Figure 2: Transmission Mechanism (Kuttner & Moser, 2002)

Interest rate channel has a significant importance in the monetary policy transmission mechanism of an economy. The central bank of the country charges an interest rate on providing the funds to the banking system. Likewise, the rate of interest is fully determined by the central bank which has monopoly power overprinting money. According to Mishkin (1995) when the central bank uses expansionary monetary policy, then the official rate of interest decreases, which lowers the cost of borrowing and increases the investment due to a negative relationship between them. Ultimately, the gross domestic product of the economy increases, which was proved with the help of using the IS-LM framework. This mechanism gets invigoration with short term and long term expectations about the rate of interest. The whole discussion can be summarized with the help of the following flow equation (Ireland, 2010).

$$M \uparrow \Rightarrow P^e \uparrow \Rightarrow \pi^e \uparrow \Rightarrow i_r \downarrow \Rightarrow I \uparrow \Rightarrow Y \uparrow$$

As per Mishkin (1995), when the central bank uses expansionary monetary policy then the official rate of interest decreases, which makes the foreign assets more attractive to the investors. So the demand for foreign currency will increase, which ultimately decreases the exchange rate of the domestic country. Consequently, this monetary policy transmission channel can be used to smooth out the swings of the economy and to encourage foreign investment. The entire exchange rate channel can be explained in a better way with the following flow equation (Cukierman, 2019).

$$M \uparrow \Rightarrow i_r \downarrow \Rightarrow E \downarrow \Rightarrow NX \uparrow \Rightarrow Y \uparrow$$

One more important transmission channel is a credit channel. If the central bank of the country uses contractionary monetary policy, means a decrease in the money supply, the money available for the bank's deposit will reduce, which will further decrease the bank loans creation. This process will put the multiplier effect on the economy and investment level will decrease due to lower deposits in the banks, which ultimately puts a negative impact on the gross domestic product of the economy. The whole discussion can be summarized with the help of following flow equation explicitly.

$$M \downarrow \Rightarrow bank\,deposits \downarrow \Rightarrow bank\,loans \downarrow \Rightarrow I \downarrow \Rightarrow Y \downarrow$$

In addition, the balance sheet channel also has significant status in the monetary policy transmission mechanism. This channel arises when one party has incomplete information than the other, which is also known as the asymmetric information. If the business firms have lower net worth, then lending to these firms is affected by moral hazard and adverse selection problem. Additionally, moral hazard means one person gets involved in risky actions knowing that the other person will pay for it. While on the other hand, adverse selection means the same thing but occurs before the transaction. There are plenty of channels through which the monetary policy can disturb the balance sheet of firms.

$$M \downarrow \Rightarrow P_e \downarrow \Rightarrow adverse\,selection \uparrow \;\&\, moral\,hazard \uparrow \Rightarrow lending \downarrow \Rightarrow I \downarrow \Rightarrow Y \downarrow$$

Above channel is stating that if state bank applies contractionary monetary policy, it will lower the equity prices; due to an upsurge in adverse selection and moral hazard the network of firms will decline, which eventually lowers down the gross domestic product via a reduction in investment. Alternatively, the contractionary monetary policy can influence the balance sheet of the firm in another way, in which reduction in money supply increases the interest rate, consequently lowering down the cash flow and ultimately reduction in the GDP with the help of an

expansion in adverse selection and moral hazard channel. This argument can be described with the help of the following equation.

$$M \downarrow \Rightarrow cash\,flow \downarrow \Rightarrow adverse\,selection \uparrow \& moral\,hazard \uparrow \Rightarrow lending \downarrow \Rightarrow I \downarrow \Rightarrow Y \downarrow$$

Some other prominent monetary policy transmission channels include savings and investment channels, which is also known as inter-temporal substitution channel. In simple words, inter-temporal choice means choice related to two different time periods. If the state bank uses expansionary monetary policy, then it will lower down the interest rate, which is directly associated with the consumption and save tradeoff. So, how much a consumer saves or consumes depends on the sensitivity of interest rate, which is an imperative debate in the monetary policy theory. In the end, there are some key questions related to the monetary policy transmission channels, for instance, which channel matters the most. It is very hard to answer this question because some transmission channels are easier to identify, while others are not. Another question is whether these monetary policy transmission channels changed over time or not. Again, it is very hard to answer but it does not matter that these channels change or not, because monetary policy still works. Last important question is related to the favorite monetary policy transmission channel. The answer to this question is that the favoritism or selection of appropriate channels depends on the conditions of the economy. However, a bulk of studies claiming that cash flow channel has immense attractiveness for the policymakers.

Woodford (2010) mentioned three reasons for decreasing monetary independence and authority among economies as a result of increasing financial globalization. Firstly, increasing dependence on global interest rate; secondly, linking inflationary pressure to the global recession and finally, liquidity premia. Very few studies have been conducted to study the effect of external constraints on the monetary transmission mechanism. A couple of studies have been conducted in this regard for developed economies i.e. UK and USA. Surico (2007) considered the impact of global factors on the UK, while Boivin and Giannoni (2008) studied the impact of global forces on monetary transmission in the USA.

2.2 Monetary Policy Shocks

A recent study by Afrin (2017) explored the bank lending channel of monetary policy in Bangladesh. Using SVAR framework, the author found strong influence of credit channel in Bangladesh economy and concluded that exchange rate channel was ineffective in developing economies like Bangladesh because of its highly intervened foreign exchange market, while credit played a non-trivial role in affecting domestic price level, inflation and output in Bangladesh. Montes and Machado (2013) noted that credit channel is an important transmission mechanism of monetary policy. This is particularly relevant for the economies targeting the inhibition of inflation like Brazil and other developing countries.

Catão and Pagan (2010) investigated monetary transmission channels of Brazil and Chile using expectations augmented SVAR model. They noted that changes in policy rate rapidly affect output and prices in these countries as compared to developed economies. Moreover, they found that along with interest rates, exchange rate dynamics contributes a major portion towards monetary policy transmission. They also observed the enormous effect of credit shocks on real economy in both countries, but the effect is comparatively stronger in Chile as it has higher bank penetration. Black et al. (2010) found that monetary policy affects the funding cost of banks and changes its risk free rates. This effect of monetary policy leads to promotion of the

bank lending channel, especially because of those banks whose cost of funds alters most because of changes in monetary policy.

Kishan and Opiela (2000) studied the influence of credit and bank lending channel on the U.S economy for the time period 1980-1995. They found the main policy variables that should be kept in mind while formulating the monetary policy and summed them as bank portfolio structure, capital leverage ratio and asset size. They added that including these variables in monetary policy reaction function may help in evaluating the extent and distributional properties of monetary policy on growth of bank loans and on real economic activity.

3 Data and Variable Construction

To examine the monetary policy and construction of SVAR model for Pakistan economy, we will follow the block recursive SVAR approach suggested by Dungey and Pagan (2009) and Afrin (2017). Our model consists of eight variables, which further divided into two different sets; foreign block, and domestic block. The foreign block consists of oil prices (Dubai Fateh price) and foreign prices (consumer price index of United States is taken as foreign price), while the domestic block consists of Nominal Effective Exchange rate (NEER), Interest rate, Private sector credit, Industrial production index (proxy for output), General Prices (proxies by consumer price index) and Equity price. We employed monthly data covering the period from July 2000 to December 2016. Major data sources are the IFS CD ROM 2017 and SBP's monthly bulletins.

4 Estimation Strategy

Sims (1980) introduced another technique that is Vector Auto Regression known as VAR. It has been a standard approach to identify the effectiveness of monetary policy, however, it does not remain efficient if we incorporate 6 to 8 variables in the model. The SVARs are applied by researchers to recover economic shocks from the given variables by imposing certain set of restrictions compatible with economic theory behind every assumption. Contrary to VAR model, SVAR has enhanced empirical apt and it allows identification of structural shocks based on economic theory. [†]

4.1 Basic SVAR Model

The general representation of SVAR model is given by:

$$AX_t = A_1 X_{t-1} + A_2 X_{t-2} + \ldots\ldots + A_p X_{t-p} + \varepsilon_t \tag{1}$$

The VAR estimation is quite delicate to variables lag order. An optimal lag length reflects long term effect of a variable on others. While taking longer lag length can cause the problem of multi-colinearity among the variables and reduces their degree of freedom (Chuku et al., 2011). The model represented by equation (1) can be expressed as:

$$AX_t = A_1 X_{t-1} + A_2 X_{t-2} + \ldots\ldots + A_p X_{t-p} + B\varepsilon_t \tag{2}$$

[†]Besides, VAR technique examine the model based on statistical inferences and there is no underlying economic theory. To overcome these difficulties, in the structural vector autoregressive (SVAR) model all

The identification of structural model denoted by equation (2) must have economic interpretation for the sake of policy exploration (Leeper, 1997). Multiplying by A1 to get the reduced form of equation (2):

$$X_t = A_1^* X_{t-1} + A_2^* X_{t-2} + ... + + A_p^* X_{t-p} + u_t \tag{3}$$

Where:

$$A_1^* = A^{-1} A_i \ \ and \ u_t = B\varepsilon_t \tag{4}$$

4.2 Identification of the Model

According to Sims et al. (1986), Identification is the interpretation of historically observed variations in data in a way that allows the variation to be used to predict the consequences of an action not yet undertaken. The parametric restriction method is applied in this study because without theoretical restrictions the parameters in the SVAR model cannot be identified and interpretable. Two types of restrictions can be imposed in the SVAR model for just identification. One is short-run restrictions and the other is long-term restrictions. For identification of structural parameters, the restrictions are imposed on the basis of economic theory to retrieve structural shocks. The approach to identification in SVAR is modified to overcome the short-comings in the identification of dynamic models. In our model, we impose $\left(n^2+n\right)/2$ restrictions on matrix A, B or both for unbiased identification. In addition, we need to impose additional restrictions $n^2 - - \left(n^2+n\right)/2$ on matrix B. Our model consists of 8 variables, so we need 28 additional restrictions to impose on matrix B.

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{21} & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & 1 & 0 & 0 & 0 & 0 & 0 \\ b_{41} & 0 & b_{43} & 1 & 0 & 0 & 0 & 0 \\ b_{51} & 0 & b_{53} & b_{54} & 1 & 0 & 0 & 0 \\ b_{61} & 0 & b_{63} & b_{64} & b_{65} & 1 & 0 & 0 \\ b_{71} & 0 & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 \\ b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1 \end{bmatrix} \begin{bmatrix} \varepsilon^{op} \\ \varepsilon^{fp} \\ \varepsilon^{er} \\ \varepsilon^{i} \\ \varepsilon^{cr} \\ \varepsilon^{sp} \\ \varepsilon^{y} \\ \varepsilon^{p} \end{bmatrix} \begin{bmatrix} u^{op} \\ u^{fp} \\ u^{er} \\ u^{i} \\ u^{cr} \\ u^{sp} \\ u^{y} \\ u^{p} \end{bmatrix} \tag{5}$$

Where $\varepsilon^{op}, \varepsilon^{fp}, \varepsilon^{er}, \varepsilon^{i}, \varepsilon^{cr}, \varepsilon^{sp}, \varepsilon^{y}$ and ε^{p} are structural disturbances, that are world oil price, foreign price, domestic exchange rate, T-bill rate, private sector credit, share price, industrial output and domestic price level respectively, while uop, ufp, uer, ui, ucr, usp, uy, and up are the reduced form residuals.

Two methods can be used to identify the required restrictions of the model. First is the recursive VAR and the second is SVAR. The difference in the restrictions matrix (A) differs recursive VAR from SVAR. In first, Cholesky decomposition assumes the matrix as diagonal (most probably lower diagonal), while later we can assume any structure of the model via applying restrictions as shown in matrix represented by equation (5). The covariance matrix of the structural disturbances should be a diagonal matrix in recursive VAR scheme, while the second matrix should be lower triangular. In simple words, we can say that the structural shocks are orthogonal. The SVAR model with respect to included variables can be described in a linear system of equations as:

$$lop = E_{t-1}\, lop + \varepsilon_t^{lop} \tag{1}$$

$$inf\_us = E_{t-1}\, inf_{us} + b_{21}\varepsilon_t^{lop} + \varepsilon_t^{inf_{us}} \tag{2}$$

$$lneer = E_{(t-1)} lneer + b_3 1 \varepsilon_t^{l} op + b_3 2?_t^{(inf_{us})} + \varepsilon_t^{l} neer \tag{3}$$

$$tbr = E_{t-1}\, tbr + b_{41}\varepsilon_t^{lop} + b_{43}\, \varepsilon_t^{lneer} + \varepsilon_t^{tbr} \tag{4}$$

$$lcr = E_{t-1}\, lcr + b_{51}\varepsilon_t^{lop} + b_{53}\, \varepsilon_t^{lneer} + b_{54}\, \varepsilon_t^{tbr} + \varepsilon_t^{lcr} \tag{5}$$

$$lsp = E_{t-1}\, lsp + b_{61}\varepsilon_t^{lop} + b_{63}\, \varepsilon_t^{lneer} + b_{64}\, \varepsilon_t^{tbr} + b_{65}\, \varepsilon_t^{lcr} + \varepsilon_t^{lsp} \tag{6}$$

$$lmpi = E_{t-1}\, lmpi + b_{71}\varepsilon_t^{lop} + b_{73}\, \varepsilon_t^{lneer} + b_{74}\, \varepsilon_t^{tbr} + b_{75}\, \varepsilon_t^{lcr} + b_{76}\, \varepsilon_t^{lsp} + \varepsilon_t^{lmpi} \tag{7}$$

$$inf_{pk} = E_{t-1}\, inf_{pk} + b_{81}\varepsilon_t^{lop} + b_{82}\, \varepsilon_t^{inf_{us}} + b_{83}\, \varepsilon_t^{lneer} + b_{84}\, \varepsilon_t^{tbr} + b_{85}\, \varepsilon_t^{lcr} + b_{86}\, \varepsilon_t^{lsp} + b_{87}\, \varepsilon_t^{lmpi} + \varepsilon_t^{inf_{pk}} \tag{8}$$

All the variables in the model are in logarithmic form except for T-bill rate. Where Et-1 is the conditional expectations operator, while b is the impulse response coefficients. From the above discussion, we can say that there are two categories of disturbances. First, the reduced form errors and the second is structural disturbances. The shock to a VAR model is known as impulse response function (IRF). The idea behind the IRF is that when a shock is put to the error term of the system, it responds to the endogenous variables of the system. We can apply impulse response function in both unrestricted VAR and VECM model (restricted VAR) to examine the responsiveness of the variables. As our basic aim of this study is to capture the effect of private sector credit and share prices on the macro variables such as inflation and output. We, therefore, applied impulse response function (IRFs) to obtain the desired results. We employed generalized IRFs as they are not sensitive to the ordering of variables. For the relative analysis of each dependent variable in clarifying variation in explanatory variables, we have used variance decomposition analysis.

5 Estimations and Results

5.1 Stationarity of VAR model series

While estimating SVAR model, an adequate number of lags must be added to eliminate serial correlation and to make errors stationary, but the main purpose of using SVAR model is to find out the inter relationship among the variables rather than determining the parameter estimates so there is no need to concern about the variables stationarity (Khan and Ahmed, 2011).

Sims (1980) also argued against the differencing of variables if they contain unit root before estimating SVAR. They observed that in attempt to make variables stationary by differencing, may misplace essential information related to co fluctuations in data (Enders, 2005, p.269-271). ‡

5.2 Optimal Lag Length Selection

Selecting optimal lag length is an essential stage while estimating the SVAR model. Akaike Information Criteria (AIC) is treated as useful for selection of optimal lag length. Table 1 shows the lag lengths suggested by these criterias. Following AIC, we selected 8 lags in our model to retrieve the structural parameters efficiently. Given structural factorization identified by equation (5), we have imposed 24 restrictions on our model. Table 2 shows the contemporaneous correlation estimations grounded on SVAR model. These numbers describe basic insight of the association that subsists between variables. The contemporaneous relation matrix demonstrates that the estimated model is over identified. In order to examine the validity of over-identifying restrictions, we performed log likelihood ratio (LR) test. The LR statistic is 7.52 [0.1105], shows that null hypothesis cannot be rejected meaning that over identifying restrictions are valid.

Table 5.1: Selection of Lag Length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	808.8137	NA	1.71E-14	-8.997907	-8.854906	-8.939916
1	2923.514	4015.555	1.68E-24	-30.03948	**-30.75247***	**-31.51757***
2	3001.669	141.3817	1.44E-24	-32.19853	-29.76751	-31.21268
3	3060.355	100.8861	1.55E-24	-32.13882	-28.56378	-30.68904
4	3142.089	133.1634	1.29E-24	-32.33808	-27.61903	-30.42438
5	3211.539	106.9057	1.25E-24	-32.39932	-26.53625	-30.02169
6	3263.275	74.98837	1.51E-24	-32.26152	-25.25445	-29.41996
7	3334.101	96.29095	1.50E-24	-32.33821	-24.18713	-29.03273
8	3426.853	**117.7637***	**1.20e-24***	**-32.66127***	-23.36617	-28.89186

selected by the criterian

The expected signs of coefficients of our interest (prices and output) with respect to credit and asset price shocks according to economic theory and the signs obtained in our analysis can be explained as: In case of private sector credit, a positive shock to credit leads to increased cash flows, which puts positive pressure on investment, and that is ultimately translated into increased output. The coefficient of output with respect to private sector credit (b75) has a value of 0.60 that shows positive relationship between credit and output which is consistent with the theoretical predictions. The coefficient of CPI with respect to credit (b85) is 0.026, which predicts positive relationship between prices and credit loaned out to private sector of the economy. A positive shock to credit leads to increase in the money demand as firms need more cash for their businesses. This puts some inflationary force on the economy as higher credit demand results in a surge in price. The positive reaction of CPI establish in our analysis is empirical reliable

‡Similarly, McCallum (1993) also confirmed the same argument that estimation of SVAR is appropriate in levels if only error terms contain no unit root and are serially uncorrelated.

Table 5.2: Contemporaneous Structural Coefficients

	Coefficient	Std. Error	z- Statistic	Prob.
b21	-0.020894	0.003374	-6.192181	0.0000
b31	0.041297	0.012038	3.430575	0.0006
b32	0.621644	0.242551	2.562941	0.0104
b41	-0.546296	0.332401	-1.643486	0.1003
b43	-8.355483	2.104280	-3.970709	0.0001
b51	0.003080	0.014451	0.213140	0.8312
b53	-0.040031	0.094729	-0.422578	0.6726
b54	0.006654	0.003234	2.057398	0.0396
b61	-0.224058	0.063694	-3.51775	0.0004
b63	-1.780388	0.417694	-4.262421	0.0000
b64	-0.013281	0.014421	-0.920918	0.3571
b65	-0.447587	0.330328	-1.354976	0.1754
b71	0.065779	0.053550	1.228359	0.2193
b73	0.926657	0356477	2.599482	0.0093
b74	0.000855	0.011752	0.072721	0.9420
b75	-0.608857	0.269925	-2.25565	0.0241
b76	-0.030377	0.060934	-0.498516	0.6181
b81	0.002098	0.009789	0.214275	0.8303
b82	-0.80956	0.186889	-4.331762	0.0000
b83	0.174021	0.063097	2.757969	0.0058
b84	-0.004968	0.002012	-2.468807	0.0136
b85	-0.026852	0.046872	-0.572873	0.5667
b86	0.019184	0.010440	1.837508	0.0661
b87	0.009112	0.012833	0.710059	0.4777

Likelihood Ratio (LR) test for identifying restrictions: χ^2 *(4) = 7.52 [0.1105]*

and recommends that the impact of credit shocks on domestic inflation is significant. Besides, increased stock prices increase the financial wealth of households thus improving their consumption patterns. The results obtained for the coefficient of output with respect to share prices (b76) having value 0.03 also poses the same relationship and is consistent with the economic theory. The coefficient of CPI with respect to share prices (b86) is 0.0191. Increased share prices reduce the interest rate, which generates incentives for investors to invest more. If economy is at full employment level the increased investment level puts upward pressure on the prices. However, our outcomes do not suggest any significant impression of asset price shocks to domestic prices. This shows weak transmission of monetary policy through asset price channel. [§]

[§]We perform the AR test to check the stability of SVAR system and observed if all the Eigen values lie

5.3 Impulse Response Functions

5.3.1 Shock to T- Bill rate

Figure 3 shows GIRFs of 4 variables (that is, Inflation, Manufacturing Production Index (MPI), NEER, and credit) to a positive one unit standard deviation shock to 6-month T-bill rate. The GIRFs are investigated over a time horizon of 24 months. In response to an increase in 6-month T-bill rate, inflation rate immediately decreases till 4th month, afterwards it shows a slight recovery up to two months. However, after 6th month the price level starts falling and the trend remains persistent and lies below zero line till the end of entire horizon. Such response of inflation to policy rate remains insignificant. This predicts that traditional interest rate channel has trivial impact on inflation rate in Pakistan. [¶]

The response of output to interest rate shock is instantly positive for 3 months period, which is opposite to the economic theory. The reason could be due to the limitation of available data as we utilized data on industrial production index rather than real GDP. After three months it decreases and becomes negative in 7th month. After 12th month it turns to be positive, peaked in 16th month and afterward the response starts decreasing and becomes negative around 18th month. This trend of manufacturing production index exhibits volatility, however, the response seems to be short lived. We observed no consistent trend by the response of output to interest rate shock. Afrin (2017) found similar results in case of Bangladesh.

The GIRF of nominal effective exchange rate to interest rate shock remains significant throughout the forecast horizon of 24 months. The immediate effect of increased interest rate is depreciation of Pakistani currency relative to the US dollars. The trend of depreciation is persistent throughout the forecast period. Mundell (1960) states that positive interest rate differential in domestic country leads to constant appreciation of exchange rate however our results show opposite to that model. Weak external sector can accounts for depreciation of rupee in terms of dollar. Javid and Munir (2010) found the similar trend of exchange rate response to interest rate shock. The GIRF response of private sector credit to monetary policy shock is negative and significant. As per Catão and Pagan (2010) the reason could be that interest rate affects credit through two channels. One is inter temporal effect in which shock to interest rate widens the spread between deposit and lending rate that results in a fall in credit. Second channel is intra-temporal, that positively affects the balance sheets of firms due to appreciation of domestic currency as a result of contractionary monetary policy. In our analysis we can observe that inter-temporal effect of monetary policy dominates the latter. The GIRF of credit to 6-month T-bill rate shock suggest that increasing interest rate causes to decrease in credit level in the economy.

5.3.2 Generalized Forecast Error Variance Decompositions Analysis (GFEVDs)

The GFEVDs analysis classifies comparative importance of dependent variables in clarifying the fluctuations in the explanatory variables. The GFEVDs results of over a 24 months horizon presented in Table 3. We can observe in Table that oil price variations are persistent and most significant over the entire horizon of 24 months and they contribute to the large part of fluctuations

---

inside the unit circle or not. Table shows that estimated SVAR model is stable. Hence, we can safely go for IRF analysis of structural model. AR roots table and AR roots graph of estimated SVAR system can be provided on demand.

[¶]Malik and Ahmed (2010) and Khan and Ahmed (2016) also found similar results and concluded that SBP does not follow the Taylor Rule (i.e. interest rate) while formulating the monetary policy strategy.

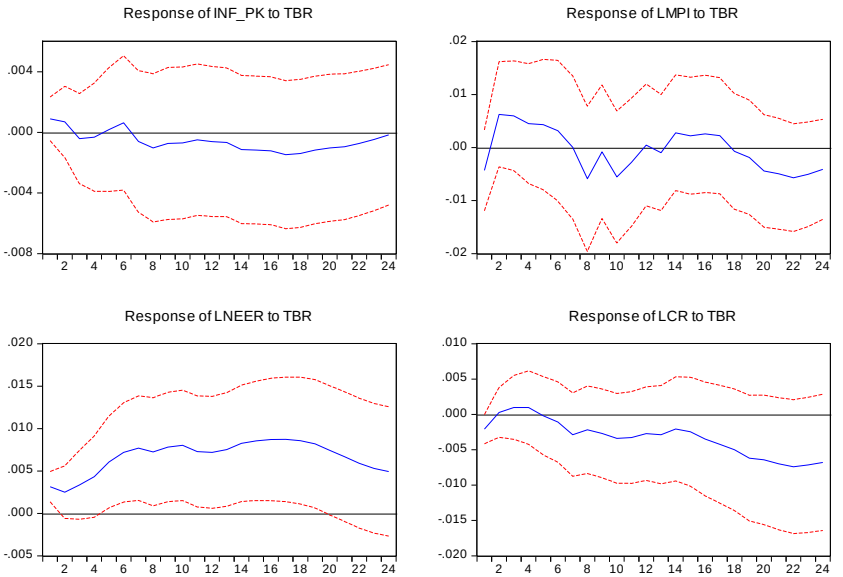

Figure 3: GIRFS of a Positive One S.D Shock to T-bill Rate

ranging between 0.04% in first month to 25.4% at the end of twenty four months period. After oil prices, private sector credit and inflation explain the maximum variations in monetary policy rate effectively. With respect to the contribution of exchange rate, fluctuations in explaining policy rate shock, we can see that exchange rate fluctuations are 8.3% in first month and gradually decrease over time. After sixth month period, it decreases to 2.0% and then ultimately 1.7% at the end of forecast horizon. The result shows that nominal effective exchange rate exhibits a decreasing trend in explaining fluctuations in monetary policy rate. Looking at the variations in private sector credit and inflation, both show significant variations to interest rate shocks. The fluctuations in credit are 7.7% in sixth month, kept on increasing and reached to 18.7% in twenty fourth month period. Inflation shows comparatively mixed trend in explaining the policy rate shock. It is 18.5% in sixth month, going up to 20.1% after eighteen months and again moved down to 17.14% at the end of forecast horizon; while the contribution of output variations is minimum in explaining interest rate fluctuations. We can observe from table (3) that interest rate shocks are not a prominent source of variation in output. It varies between 0.0 to 0.9% in 24 months that is almost near to zero. Kim (1999) also found similar results that monetary policy shocks do not explain fluctuations in G-7 countries. The study of Javid and Munir (2010) also supported our results that interest rate shocks are not dominant source of fluctuations in output in Pakistan. In a nutshell contribution of interest rate shock to oil price fluctuations (i.e. 25.43%) is highest followed by private sector credit (i.e. 18.7%) and inflation (i.e. 17.1%). While the effect of MPI, exchange rate and share price is almost insignificant.

5.3.3 Credit Shock

The response of inflation seems to be negative to one unit positive shock to private sector credit in the impact period. However, the response starts increasing after about third month, peaked in seventh month and thereafter the response remains positive and constant through the

Table 5.3: GFEVDs of T-Bill Rate

Period	S.E.	OP	NEER	TBR	CR	SP	MPI	INF
1	0.076449	0.045507	8.301717	91.63876	0	0	0	0
6	0.233987	6.622916	2.028126	62.67	7.70907	0.479753	0.706966	18.51612
12	0.313357	16.82713	1.027571	41.78201	13.84924	0.544247	1.196325	22.91883
18	0.340799	23.87724	0.905576	33.32404	16.22036	1.328716	0.912312	20.19522
24	0.356727	25.43212	1.683839	27.95334	18.72341	2.977877	0.925997	17.14109

forecast horizon. The positive shock to private sector credit shows inflationary pressure on the economy as price level starts increasing, though, the extent of this increase in not much high, however, it remains persistent throughout the whole forecast horizon.

In response to positive innovation to credit, exchange rate shows significant movements. In the first 6 months period currency starts depreciating but after 6 months exchange rate starts to respond with a lag by appreciating to some extent. After 12 months the trend starts repeating itself and currency starts depreciating and then again appreciating so net effect of movements in exchange rate is nullified. Similarly, output responds aggressively to credit shock and starts increasing initially. After fourth month it starts decreasing, then it moves in the downward direction in the 8th months period and trend keeps on repeating itself till the end of 24 months. The positive shock to credit means increased amount of money that can be loaned out to private sector. Increase in loans puts positive pressure on investment that ultimately increases the output level of the economy. The GIRF of output towards positive credit shock shows the same trend but the responses are not persistent over the time. In response to positive shock to credit central bank increases its policy rate to maintain its goal of price stability. As private sector credit increases the equity price and cash flows also increases, in response to this increased price of equity SBP raises interest rate to keep a stable relationship between prices. To sum up, the credit channel with regard to monetary policy in Pakistan shows significant impact on macro variables. Agha et al. (2005) also confirmed the effectiveness of credit channel as monetary transmission mechanism for the Pakistans economy. The variance decomposition analysis of private sector credit is reported in table 4.

Table 5.4: GFEVDs of Private Sector Credit

Period	S.E.	OP	NEER	TBR	CR	SP	MPI	INF
1	0.076499	0.104105	0.039299	2.271815	97.45572	0	0	0
6	0.233987	7.121357	0.965408	0.806522	82.2395	1.479382	6.312327	0.14893
12	0.313357	18.36634	2.829982	4.908807	61.02545	3.422923	7.079175	1.36247
18	0.340799	14.05404	5.626832	7.093059	53.75282	2.991913	5.81689	9.860109
24	0.356727	10.37678	6.35245	13.15089	41.42969	2.939121	5.89375	18.78111

Table 4 shows that inflation substantially contributes to explain variations in the credit shock. In the first six months of forecast horizon, fluctuations in inflation were 0.14% which increase to 1.36% at the end of twelve months. We can clearly observe from FEVD of credit that inflation significantly effects in the longer horizon. In 18th month fluctuations in inflation are

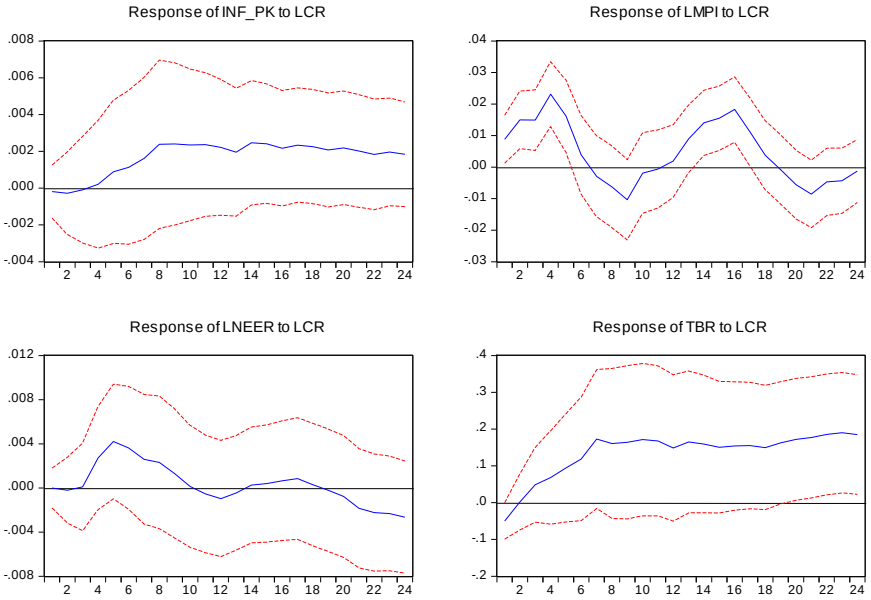

Figure 4: GIRFs of a Positive Unit Shock to Private Sector Credit

9.8% which got doubled in the 24th month. The significant effect of variations in price level to credit shocks shows the importance of credit channel in determining the inflation level of the economy. After inflation the short term interest rate fluctuations contribute most to the credit innovations. The trend of policy rate is significant over the longer horizon and it varies from 2.2% in first month to 13.1% at the end of forecast horizon.

Besides, oil prices also contribute substantially to credit shocks. The variation in oil price in first month is 0.10% which keeps on rising till the end of 12 months. The fluctuation after 12 months is 18.3% and after that it starts decreasing and reaches to 10.37% at the end of forecast period of 24 months. The significant variations in the oil price as a result of credit innovation show that oil price effectively impacts the supply side of our domestic industry. The analysis of output variations to credit shock shows small but pretty significant response to credit shock. The initial impact of output fluctuations is 6.3% and 7.07% in the sixth and twelfth month, respectively. After 12th month the trend goes down and ends up at 5.89% in 24th month.

5.3.4 Asset price shock

The reaction of output towards the shock of share prices shows that response remains significant but quite short lived for whole 24 months. The impact effect of output is positive, peaked in 6th month and then starts decreasing till 8th month. The effect of increased share prices on output works through the wealth effect. It positively affects the value of financial assets hence increasing their wealth. The consumption and investment patterns change because of less financial distress and good economic conditions (Mishkin, 1995). The increased expenditures on durables and housing ultimately increase the output of the economy. After 8th month output shows significant and consistent response towards share prices shock throughout the whole

forecast period.

The response of nominal effective exchange rate towards share prices volatility is contradictory to what theory explains. The impact effect of exchange rate is slightly negative, which starts increasing after 4th month and after period of eight months it shows sharp positive movement, get its peak value in 14th month. The trend of exchange rate, till 14th month shows depreciation of currency and after that the trend changes. It is depicted that exchange rate may start appreciating after the period of 14 months. The traditional theory says that when share prices increase there is inflow of foreign funds, as investment has more returns so the domestic currency will appreciate in terms of dollars. But Dimitrova (2005) introduced an assumption to the Mundell-Fleming Model and called it J-curve effect. The results of GIRF also show consistency to the J-curve effect.

Policy rate shows short lived movements towards share prices volatility. The impact effect of increased share prices is decreased in policy rate. After about three months interest rate starts increasing for a short time and gets a peak in 9th month. The effect of policy rate is inconclusive till 9th month however after that it shows a constant decreasing trend. The negative relationship between interest rate and share prices also accounts for the decreasing interest rate; however, there is no persistent effect of policy rate towards increased equity price that shows weak transmission of monetary policy through asset price channel. The variance decomposition analysis of share prices is reported in Table 5. It shows the variance explained by variables due to share prices shock.

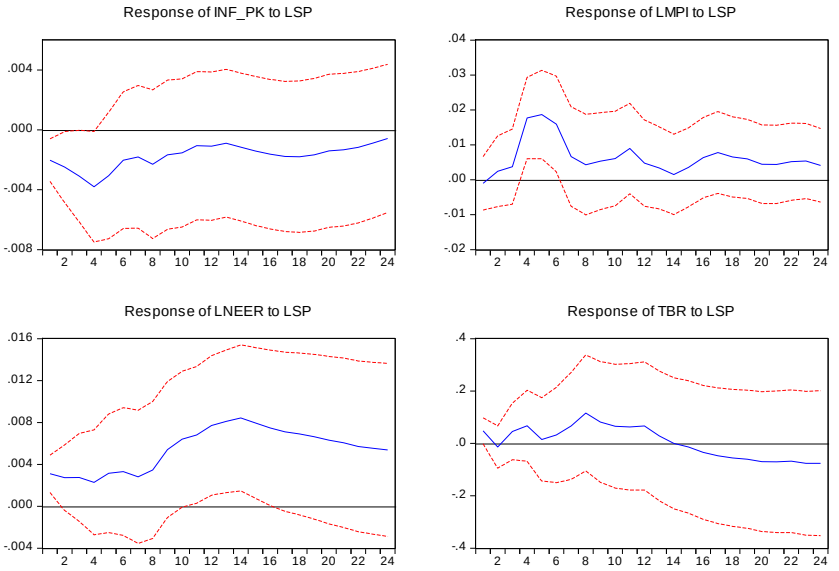

Figure 5: GIRFs of a Positive Unit (one S.D) Shock to Share Prices

Table 5 shows that inflation accounts for the most variation in response to share prices innovations. Starting from 0.00% it gets the value of 32.99% in 12 months and then reaches to 39.00% in 24th month. Exchange rate and oil prices explain 6.9% and 4.4% variations, respectively; while output, credit and policy rate do not significantly explain the variance of share prices.

Table 5.5: GFEVDs of Share Prices

Period	S.E.	OP	NEER	TBR	CR	SP	MPI	INF
1	0.076499	2.176756	8.239131	0.341278	0.777656	82.67308	0	0
6	0.233987	7.856139	6.989459	0.72532	8.448304	44.1804	0.678376	16.88171
12	0.313357	3.870583	9.539029	0.608754	5.083972	30.51045	0.324164	32.99253
18	0.340799	3.916193	7.747519	1.272147	3.954358	27.98279	0.310907	39.6498
24	0.356727	4.490936	6.957141	2.061791	3.804474	28.42366	0.511473	39.00813

5.4 Oil Price Shock

Next GIRF shows the response of output to oil price shock. It depicts that reaction of output to oil price variation is short lived. MPI shows some significant increase in the first half of forecast horizon but after that the effect almost dies out. Javid and Munir (2010) also found out that oil price variations do not significantly affect the output level of our economy. Afrin (2017) found the same trend of output towards oil price variations for Bangladeshs economy.

The goal of monetary policy is not limited to maintain stable prices only, it has multiple objectives. So central bank does not react very harsh to the foreign shock (Afrin, 2017). The GIRF shows the reaction of policy rate to positive oil price shock. In response to increased prices due to oil price shock, central bank raises its interest rate but not very immediately. We can see the sharp rise in policy rate after 4 months of shock. After 7 to 8 months interest rate stops reacting to oil shock and the trend remains consistent with little variations till the end of forecast horizon. The last GIRF plots the response of private sector credit to the shock in oil price. It significantly affects the private sector credit as increased cost of production causes the firms to demand more credit. The variance decomposition analysis of oil price shock is reported in table 6.

Table 5.6: GFEVDs of Foreign Shock (Oil Prices)

Period	S.E.	OP	NEER	TBR	CR	SP	MPI	INF
1	0.076499	100	0	0	0	0	0	0
6	0.233987	82.28834	3.089779	0.124702	4.001877	7.063211	0.868518	0.539353
12	0.313357	66.45175	5.868151	1.824203	9.722263	5.358059	0.5877	6.728261
18	0.340799	63.59451	5.822453	1.737263	10.54126	4.353769	0.633102	9.216056
24	0.356727	60.42872	5.427447	1.63996	11.85203	5.071671	1.222124	8.773788

It is evident from the table that credit contributes to the highest variation to oil price volatility. Starting from 0.00% in the first month its value is 9.7% at the end of 12 months. The variations in next 12 months are not as volatile. The variance varies from 0.00% to 11.8%. The fluctuations in inflation seem significant in longer horizon. After 12 months the variations varies from 6.7% to 9% starting from 0.00% in 1st month. The variations in MPI and interest rate do not contribute much to oil price shock. Analysing FEVDs and GIRFs it is clear that foreign factors play important role in variation of domestic variables.

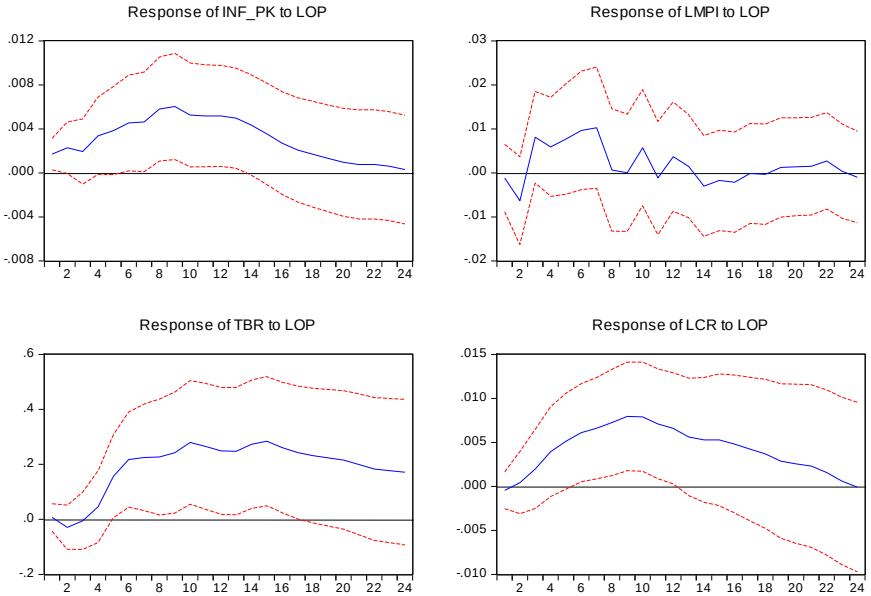

Figure 6: GIRFs of a Positive Unit (one S.D) Shock to Oil Prices

6 Conclusion

In this research, we have investigated monetary policy transmission channels with special emphasis on credit and asset price channels in Pakistan. We have also analysed the impact of external shock, that is, oil price shock on inflation, output, exchange rate and interest rate in Pakistan. For the analysis of short-run dynamics, we applied the Structural Vector Autoregressive (SVAR) methodology using monthly data over the period 2000M7 to 2016M12. Evidence based on GIRFs it is concluded that private sector credit significantly influences the inflation and output level in Pakistan, while share prices contributes maximum towards the output level only. They did not display any noteworthy effect on inflation. However, the traditional Taylor type rule (interest rate channel) is not found to be effective in transmitting monetary policy shocks on the price level. Our results support the earlier findings of Malik and Ahmed (2010) and Khan and Ahmed (2016). They also found the similar results for interest rate channel of monetary policy. Analyzing the GIRF of inflation, output, exchange rate and interest rate to private sector credit, it is evident that transmission channel of monetary policy that works through its effect on private credit is most optimal for achieving the objectives of monetary policy, that is, price and output stability. Agha et al. (2005) and Chaudhry et al. (2012) found similar results for Pakistans economy that credit channel of monetary policy transmission is non-trivial in case of Pakistan. Afrin (2017) also found the similar results for Bangladesh economy. The author concluded that credit channel plays an effective role to achieve the stated goals of monetary policy in Bangladesh. Moreover, considering GIRFs of inflation, output, exchange rate and private sector credit to oil price shock, it is clear from the results that foreign variable proved to be an important driver in effecting domestic macro aggregates. Oil price shocks significantly affect the price level, output, exchange rate and credit in the short-run. Hence, monetary policy in

Pakistan gets affected by the domestic as well as foreign variables that affect economic conditions of Pakistan. Javid and Munir (2010) also stated that oil price seemed to be an important variable in transmitting monetary policy shocks on other variables. By summing up, the current interest rate targeting framework does not work efficiently to influence the domestic price level and it may not act as suitable target variable for monetary policy. Our results suggest that credit channel is most vital to transmit its effects on inflation and output level in Pakistan economy.

6.1 Policy Recommendations

The outcomes of this study provide some important policy implications. The results suggest that interest rate channel is ineffective to stabilize inflation and output level in Pakistan thats why SBP should not limit its attention towards interest rate. Second, credit channel of monetary transmission proved to be more powerful to transmit effects of monetary policy on real sector of economy. The role of bank lending is prominent because non-bank sources of financing are very low in Pakistan. So SBP should add credit as target variable in their monetary policy reaction function. Third, besides credit, output shows a significant reaction towards asset price shocks. Therefore, SBP should keep in mind credit and share prices, while framing information set of monetary policy. Since private sector credit effects output thorough investment level, while share prices also acts as important indicators of economic growth through wealth effect. Fourth, in addition to domestic variables, it is evident that monetary policy of Pakistan is constrained by foreign variables as well. Our results suggested that external shocks in terms of oil prices and foreign prices affect macro variables such as interest rate, exchange rate, inflation and output significantly. Therefore, monetary policy requires the inclusion of foreign variables in the reaction function of SBP. Concluding the results, we can say that macro variables that is; inflation and output gets affected by both external and internal shocks, hence, SBP may consider both domestic and foreign variables as important determinants of monetary policy and should add these variables in its reaction function. Proper model specification, considering all foreign and domestic constraints will not only improve the outcomes but will also reduce the bias.

References

Afrin, S. (2017). Monetary policy transmission in bangladesh: Exploring the lending channel. *Journal of Asian Economics*, 49:60–80.

Agha, A. I., Ahmed, N., Mubarik, Y. A., Shah, H., et al. (2005). Transmission mechanism of monetary policy in pakistan. *SBP-Research Bulletin*, 1(1):1–23.

Aleem, A. (2010). Transmission mechanism of monetary policy in india. *Journal of Asian Economics*, 21(2):186–197.

Black, L., Hancock, D., and Passmore, S. W. (2010). The bank lending channel of monetary policy and its effect on mortgage lending.

Blanchard, O. and Galí, J. (2010). Labor markets and monetary policy: A new keynesian model with unemployment. *American economic journal: macroeconomics*, 2(2):1–30.

Boivin, J. and Giannoni, M. (2008). Global forces and monetary policy effectiveness. Technical report, National Bureau of Economic Research.

Catão, L. and Pagan, A. (2010). The credit channel and monetary transmission in brazil and chile: A structural var approach. *Documentos de Trabajo (Banco Central de Chile)*, (579):1.

Chaudhry, I. S., Qamber, Y., and Farooq, F. (2012). Monetary policy, inflation and economic growth in pakistan: Exploring the co-integration and causality relationships. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 6(2):332–347.

Chuku, C. A., Akpan, U. F., Sam, N. R., and Effiong, E. L. (2011). Oil price shocks and the dynamics

of current account balances in nigeria. *OPEC Energy Review*, 35(2):119–139.

Cukierman, A. (2019). The impact of the global financial crisis on central banking. In *The Oxford Handbook of the Economics of Central Banking*, page 171. Oxford University Press.

Dimitrova, D. (2005). The relationship between exchange rates and stock prices: Studied in a multivariate model. *Issues in political Economy*, 14(1):3–9.

Dungey, M. and Pagan, A. (2009). Extending a svar model of the australian economy. *Economic Record*, 85(268):1–20.

Javid, M. and Munir, K. (2010). The price puzzle and monetary policy transmission mechanism in pakistan: Structural vector autoregressive approach. *The Pakistan Development Review*, pages 449–460.

Khan, M. A. and Ahmed, A. (2011). Macroeconomic effects of global food and oil price shocks to the pakistan economy: A structural vector autoregressive (svar) analysis. *The Pakistan Development Review*, pages 491–511.

Khan, M. A. and Ahmed, A. M. (2016). Conducting monetary policy in south asian economies: an investigation. *The Pakistan Development Review*, pages 161–190.

Kishan, R. P. and Opiela, T. P. (2000). Bank size, bank capital, and the bank lending channel. *Journal of Money, credit and banking*, pages 121–141.

Kuttner, K. N. and Mosser, P. C. (2002). The monetary transmission mechanism: some answers and further questions. *Economic Policy Review*, 8(1).

Leeper, E. M. (1997). Narrative and var approaches to monetary policy: Common identification problems. *Journal of Monetary Economics*, 40(3):641–657.

Malik, W. S. and Ahmed, A. M. (2010). Taylor rule and the macroeconomic performance in pakistan. *The Pakistan Development Review*, pages 37–56.

Mishkin, F. S. (1995). Symposium on the monetary transmission mechanism. *Journal of Economic perspectives*, 9(4):3–10.

Montes, G. C. and Machado, C. C. (2013). Credibility and the credit channel transmission of monetary policy theoretical model and econometric analysis for brazil. *Journal of Economic Studies*.

Mundell, R. A. (1960). The monetary dynamics of international adjustment under fixed and flexible exchange rates. *The Quarterly Journal of Economics*, 74(2):227–257.

Qayyum, A. (2008). Does monetary policy play effective role in controlling inflation in pakistan.

Sims, C. A. (1980). Macroeconomics and reality. *Econometrica: journal of the Econometric Society*, pages 1–48.

Sims, C. A. et al. (1986). Are forecasting models usable for policy analysis? *Quarterly Review*, (Win):2–16.

Surico, P. (2007). The monetary policy of the european central bank. *Scandinavian Journal of Economics*, 109(1):115–135.

Woodford, M. (2010). Robustly optimal monetary policy with near-rational expectations. *American Economic Review*, 100(1):274–303.

Jinnah Business Review
July 2020, Vol. **8**, No. 2, pp. 116-132

The Dynamic Effects of Innovation, FDI, & Trade Liberalization on Services Sector: An Evidence from Developed and Developing Economies

Muhammad Zubair Chishti*[1] & Dr. Farrukh Mehmood[2]

[1]*Zhengzhou University, Henan, People's Republic of China*
[2]*Pakistan Institute of Development Economics, Islamabad, Pakistan*

Abstract. The current study is a bid to explore the dynamic effects of Innovation, FDI, and trade openness on services sector in selected developed and developing economies for the period of 1992 to 2016. For computing the empirical findings, this study deploys the static as we all dynamic panel data estimation approaches. The results reveal the significant role of GDP per capita and FDI in the growth of services sector. However, the services sector incurs the detrimental repercussions on the account of trade liberalization. These findings also demonstrate that, in both samples of economies, the services sector does not respond to the productivity differential. Furthermore, innovation exhibits a significant association with the growth of services sector in the case of developing economies.

Key words: FDI, Trade Liberalization, Innovation, Developed and Developing Economies, Services Sector, Panel Data Analysis.

1 Introduction

A services sector plays a vital role in the development process of an economy. The economy is considered as services based-economy if it has relatively higher services share in total consumption, production and employment as compared to manufacturing and agriculture sectors. The services sector affects the economic growth directly through its increasing contribution to the output, employment and trade and indirectly through productivity growth and creating linkages with other parts of the economy (Baumol, 1967; Clark, 1940; Fisher, 1935). In services-based economies, services are not used only as final product but also as an intermediate input that is used to link different economic activities and make the economy function smoothly (Berlingieri et al., 2014). The growing importance of services sector and its impact on different parts of the economy has made this sector as the primary source of growth and job creation even in developing countries (Ghani and O'Connell, 2014). The most frequent use of services as an intermediate input in other parts of the economy have enhanced the overall productivity and efficiency of the economy as it is witnessed from OECD countries. Similarly, a slowdown of

*Corresponding author.
Email: chishtimz9@gmail.com

services sector productivity has brought down the overall productivity of these economies from 4% to 2% over the period 1995-2015 (Jones and Yoon, 2008). The importance of services sector in global perspective is apparent from its rising contribution in output, employment and trade. Services sector constitutes 68% of total world output, 39% of total world employment and 20% of world total trade. The services sector is characterized as the fastest growing sector not only in world economy as a whole but also in different economic groups separately. Services share in total GDP is 47% in low-income countries, 53% in middle-income countries and more than 70 per cent in high-income countries (WDI Report, 2014). The services exports reached to $4.7 trillion with the fastest growth rate of 7 percent compared to 2 percent growth rate of the merchandise exports by 2014 which has provided great support to the world trade (WTO Statistics, 2014). This sector has also proved attractive for foreign direct investment as it has received $1.3 trillion by the year 2014 (UNCTAD 2014).

Over the last decade, the increasing share of the services sector in GDP and employment and GDP has grabbed the attention of economists around the world. Different studies have addressed the subject issue from different angles. For example many of the studies have addressed the subject matter in the context of a single indicator as a major variable of interest, i.e. some studies investigate either the impact of per capita GDP on services sector growth (Ajmair and Ahmed, 2011; Estrada et al., 2013; Nayyar, 2009; Salam et al., 2018), some investigate the impact of FDI on services sector growth (Agya and Wunuji, 2014; Chakraborty et al., 2006; Iram and Nishat, 2009; Sen, 2011); whereas, some studies examine the impact of either GDP, productivity, trade openness or innovation on services sector growth (Mitra et al., 2013; Ramaswamy and Rowthorn, 1993; Sapprasert, 2006; Singh and Kaur, 2014; Vamvakidis and Dodzin, 1999). Most of the aforementioned studies are related to advanced countries. There are few cross country studies that look into factors affecting the services sector growth such as Wu (2007) focuses on China and India, while D'agostino et al. (2006) use a panel of EU countries for investigating the determinants of services sectors growth. However, according to the Russo et al. (2001) as well as Schettkat and Yocarini (2003), thanks to the diverse nature of economic development of both developed and developing countries, the role of factors affecting the services sector growth may not be the same, rather it may affect the services sector growth in both of the countries differently.

The current study contributes to accessible literature in different ways; first, unlike many previous studies that used a single indicator as a variable of interest, this study intends to investigate the impact of many factors that affect the services sector. Secondly, in the light of the studies of Russo et al. (2001) and Schettkat and Yocarini (2003),which predict different impacts of these indicators on developed and developing economies, we present a comparative picture of factors affecting the services sector growth that will help us identify factors, which are important both for developed and developing economies together and those which are important for developing or developed economies only.

2 Theoretical Underpinnings

Fisher (1935) and Clark (1940) were the pioneers who developed a theoretical base for the determinants of change in the whole structure of an economy. They were of the views that in the first phase of economic development, the sectoral share of agriculture in total output and employment fall, while the sectoral share of industry rises. In the second phase with further growth of an economy, the sectoral share of industry in total output and employment falls, while

the sectoral share of services begins to rise. According to Fisher (1935), the sectoral structural transformation of an economy is due to some of the characteristics of services. It includes the relatively high-income elasticity of services as compared to goods and the persistent use of services which are used not only as primary inputs but also as secondary inputs. Due to relatively higher income elasticity and more need-satisfying nature of services as compared to goods, when income of the people increases they will prefer to purchase more services as compared to goods. Similarly, services being used as an intermediate input connect different economic activities and complete the production process. The other sectors, therefore, highly depend on services sector for their growth and development (Chenery et al., 1975). Baumol (1967) suggests that an increase in income is not the only factor behind the services sector growth, in fact the per-worker productivity difference between manufacturing sector and the services sector is also one of the main reasons. The lower per worker productivity in services sector makes this sector to employ more labour which increases services output in nominal terms rather than in real terms. Besides the factors suggested by Fisher (1935), Clark (1940) and Baumol (1967), there are some other factors that can affect the services sector growth. These other factors are outsourcing of services activities by the manufacturing firms, demographic factors and the social and economic reforms. According to Schettkat and Yocarini (2003), as an economy adopts more specialized pattern of production, each subtask of production is done with specialized firms. Since most of manufacturing firms outsource their services activities to be done with specialised services firms it results in increasing demand for services. The demographic factors like population growth, rural-urban migration and female participation in labour force increase both demand and supply of services Sabolo (1975). The social and economic reforms such as good governance, trade openness and innovation, particularly in developing economies are also considered as the main forces behind growth in the services sector Mehta (1985).

3 Empirical Evidence

Different empirical studies have suggested different factors as determinants of growth in the services sector. Income per capita, Productivity difference, Innovations, FDI and trade openness are the most common factors suggested by different empirical studies as determinants of services sector growth. We present here a brief empirical literature, on each of them. Fisher (1935) and Clark (1940) established the hypotheses that highlight the factors responsible for services sector growth. The contribution of these two great researchers has given the name of Clark-Fisher theory or Clark-Fisher hypothesis. According to this theory, income per capita is the key determinant for the rising share of services in total output and employment. This hypothesis has empirically tested by number of empirical researchers. The empirical study of Schettkat and Yocarini (2003) suggests that income per capita is the main factor that affects services sector growth. As income per capita increases, the consumers final demand tends to shifts from goods to services. The countries with relatively higher per capita income have experienced higher share of services in output and employment. The same results have also been confirmed by Ajmair and Ahmed (2011); Estrada et al. (2013); Nayyar (2009); Salam et al. (2018). Summers (1985) suggests that though income per capita has significantly positive effect on services sector growth but this is a nominal income effect rather than real income effect. Renuka and Kalirajan (2002) empirically examined that how much higher the income elasticity of services is. They found that in fact services have positive income elasticity but it is not that much higher as was suggested by the previous empirical studies.

The hypothesis about the lower per worker productivity in services sector presented by Baumol (1967) has also empirically tested by number of researchers. Ramaswamy and Rowthorn (1993) found that services sector is less productive as compared to manufacturing sector. Hence, there occurs a productivity gap between these two sectors. To cover the productivity gap, the services sector hires additional labour with higher wages. This increase in wages is reflected in the price of final services that causes services value added to grow in nominal terms rather than in real terms. Similar results were also confirmed by Kim (2006). However, Mitra et al. (2013) suggest that these are only a few sub sectors that are less productive while the services sector as a whole is not so much lagged behind manufacturing sector with respect to per worker productivity. Similar results were suggested by Lages and Fernandes (2005); Maroto-Sánchez (2012); Triplett and Bosworth (2003). Furthermore, Berman et al. (1994); Griliches (1992) suggest that due to conceptual problems related to the definition and measurement of per worker productivity, the services sector has mistakenly considered less productive. But now as most of the measurement errors related to the definition and measurement of productivity have been solved so the services sector is no longer seems to be less productive.

IQBAL et al. (nd) suggests that innovations have not only a positive effect on output and employment but it also have a significantly positive effect on labour productivity in both services sector and manufacturing sector. Sapprasert (2006) found that if the technological and non-technological innovations are collectively employed to the services firm, it will have a significant role in the enhancement of services firms performance. Licht et al. (1999) suggest that the innovative firms perform better than non- innovative firms. Innovations play an important role for both demand side as well as supply side of services. On one hand, it improves the quality of services while on other hand it introduces new modes of services provision.

Different studies have empirically intended to assess the effect of FDI on services sector growth and their results are different as well. Agya and Wunuji (2014) found a two way causality between FDI inflow and services sector growth. They found that FDI plays a supportive role for the development of services sector by providing financial as well as technical assistance but once the services sector grows it also enhances FDI inflow from abroad. They suggest that FDI inflow in services sector will increase services productivity. Similarly, when services sector becomes more productive, it will be able to attract more FDI from abroad. Iram and Nishat (2009) also found a significantly positive effect of FDI on services sector growth. However, Chakraborty et al. (2006) suggest that though foreign direct investment inflow obviously have positive effect on services sector growth but the effect is not significant. Furthermore, some of the empirical studies like Sen (2011) suggests a one way causation from services sector growth towards FDI rather than from FDI towards services sector growth. FDI may have either positive or negative effect on services sector growth, it depends on the direction of the flow of FDI towards different sectors. Hijzen et al. (2008) suggests that when the major share of FDI is directed towards services sector, it has a significant positive effect on services sector growth. But when major share of FDI is directed towards manufacturing sector, it shows the adverse effect on services sector growth.

There are several studies that have pointed out the positive effect of trade openness for services sector growth. Singh and Kaur (2014) suggest a significantly positive effect of trade openness on services sector growth. They suggest that in case of more free trade, the services share in total trade increases. However, the findings of Vamvakidis and Dodzin (1999) are different, they suggest that an attempts for the more open trade by reducing some of the trade barriers mostly increases trade in goods rather than trade in services. The positive or negative effect of trade openness for services sector growth depends on the income level of the trading partner.

El Khoury and Savvides (2006) found that if the trading partner is a country with higher level of per capita income then in case of freer trade services share in total trade will rise but when the trading partner is a country with lower level of per capita income they will increase commodity share in total trade by reducing services share in total trade.

4 Empirical Model

The current study follows the empirical model developed by Inman (1988) with some modifications.

$$SER = \beta_1 GDPP + \beta_2 PDIF + \beta_3 z \tag{1}$$

Where SER represents services value added growth which is determined by GDP per capita annual growth (GDPP), per worker productivity difference between manufacturing sector and services sectors (PDIF) and sum of the exogenous demand shocks (z). we insert in equation(1), the other possible independent variables such as Innovation, FDI net inflow, and trade openness, through vector of exogenous demand shocks (z) and check that whether these factors significantly determine growth in services sector or not.

$$SER = \beta_0 + \beta_1 GDPP_{it} + \beta_2 PDIF_{it} + \beta_3 INN_{it} + \beta_4 FDI_{it} + \beta_5 TOP_{it} + e_{it} \tag{2}$$

Equation (1.1) represents a panel data model for the determinants of services sector growth in a sample of selected countries. Where i in the subscript represents ith cross sections and t in the subscript represents tth time periods. The current study also includes an additional terms through which the explanatory variables affect the services sector growth in interaction with these factors.

$$SER = \beta_0 + \beta_1 GDPP_{it} + \beta_2 PDIF_{it} + \beta_3 INN_{it} + \beta_4 FDI_{it} + \beta_5 TOP_{it} + C_1 PDIF * GDPP + C_2 INN * FDI + C_3 FDI * HC + C_4 TOP * GDPP + e_{it} \tag{3}$$

Equation (1.2) includes the additional terms, i.e. PDIF*GDPP shows the effect of productivity difference on services sector growth in interaction with GDP per capita growth. INN*FDI is the effect of innovations on services sector growth in interaction with FDI inflow. FDI*HC is the effect of FDI inflow on services sector growth in interaction with Human Capital. Finally, TOP*GDP is the effect of trade openness on services sector growth in interaction with GDP per capita.

4.1 The selection of Sample and the Time Period

The current study uses a panel data set for a sample of 14 countries. The sample is further divided in to two groups, where a sample of seven developed countries (France, Germany, Italy, Japan, UK, US and Russia) belongs to a group of industrialised eight countries (G8) and the other sample of seven developing countries (Bangladesh, Egypt, Indonesia, Iran, Malaysia, Pakistan and Turkey) belongs to a group of developing eight countries (D8). The data period 1992-2016 covers 25 years and the data source is World Bank database (2016). The selection of these two specific samples of countries is based on the fact that they have an economic and social interaction which is necessary element in determining the factors effecting services sector

growth in these countries. Furthermore, the selection of seven countries from each group is due to the data availability on different variables for these countries. One country from each group (Canada and Nigeria from developed and developing countries respectively) has been dropped due to lack of data availability on different variables for these two countries. Similarly, the selection of data over 1992-2016 is, because only for this specific period the data is available for all the variables included in the model.

4.2 Variables Construction

The current study estimates two equations, i.e. equation (1.1) and equation (1.2). the equation (1.1) uses services value added annual growth as a dependent variable, while GDP per capita growth, productivity difference between manufacturing and services sector, innovations, FDI and trade openness as an explanatory variables. The equation (1.2) is a different variant of equation (1.1), it also uses services value added annual growth as a dependent variable; while beside the explanatory variables mentioned above this equation uses some additional explanatory variables that is PDIF*GDPP, INN*FDI, FDI*HC and TOP*GDPP.

Most of the variables like services value added annual growth, GDP per capita growth, innovations, foreign direct investment and trade openness have directly taken from World Bank Database (2016) while Productivity difference between manufacturing sector and services sector have been constructed by subtracting per worker productivity in services sector from per worker productivity in manufacturing sector. Furthermore the additional explanatory variables included in equation (1.2) i.e., PDIF*GDPP, INN*FDI, FDI*HC and TOP*GDPP have been constructed by multiplying each of the two terms. For example the variable PDIF*GDPP is obtained by the multiplication of Productivity difference between manufacturing sector and services sector and GDP per capita annual growth rate, and so on see table 1 in appendix.

4.3 Estimation Procedure

The estimation procedure includes the use of both the static panel data estimation technique as well as the dynamic panel estimation technique. The Static Panel Data estimation technique includes Pooled OLS model, Random Effect model and Fixed Effect model while dynamic panel data estimation technique here includes only Difference GMM. The Pooled OLS model is based on the assumption that there is neither any significant cross section effect nor any significant temporal effect indicating that all intercept coefficients are same. The random effect model keeps a common intercept for all the cross sections and follows the assumption of the random unobserved individual component. However; the fixed effect model allows intercept for each cross section to be significantly different.

4.4 Endogeneity Issue and its Solution

The economic theory suggests a reverse causality from services sector growth towards FDI and GDP per capita as well. In case of endogeneity issue, the use of static panel data estimation techniques will lead us towards biased estimation. The appropriate choice here is the use of instrumental variable technique that is Difference GMM estimator. The difference GMM estimation technique presented by Arellano and Bond (1991) treats the issue of endogeneity as well as heteroscedasticity. It eliminates the time invariant country specific effect by taking first difference of the level equation and then using this first difference of the level equation as an

instrument. The use of first difference of level equation as an instrument is considered weak instruments. Blundell and Bond (1998) therefore, provided System GMM an extended version of Difference GMM that once take level equation as an instruments for lag equation and then taking lag equation as an instruments for level equation also. But this is beyond the scope of this study and if the instruments are valid then difference GMM is better option and no need to further move for System GMM. The instruments are considered to be valid if it having correlation with endogenous variables Cov (, x) 0 but no correlation with error term Cov (, u) = 0. The selection of valid instruments is necessary to obtained more consistent and efficient estimation with Instrumental variable technique (GMM).

5 Estimation Results

Table (2) contains the results obtained for the combined sample of selected developed and developing countries. The current study begins to estimate equation (1.1) with static panel data estimation techniques that is Pooled OLS model, Random Effect model and Fixed effect model. We have used Brush pagan Lagrangian Multiplier test to choose between Pooled OLS and Random effect model. While the selection between Random effect model and fixed effect model is based on Hausman model specification test. The Breusch-Pagan LM test failed to reject the null hypothesis of no random effects for the combined sample of selected developed and developing countries and suggest pooling the data and estimating the model with Pooled OLS estimation technique. The Hausman specification test could not reject the null hypothesis and prefers fixed effect model over random effect model. Although, results obtained with Pooled OLS, Random effect and fixed effect models are almost according to the theory but still the model needs to be estimated with Dynamic panel data estimation technique that is Difference GMM which can better treat the issue of endogeneity and provide more accurate results. When we estimate equation 1.1, for the combined sample of selected developed and developing countries with Difference GMM; so, out of five explanatory variables only the two variables that is GDP per capita and innovations have appeared with significant coefficients at 1% and 10% respectively. The positive sign of these two coefficients indicate that each of them have increasing effect on services sector growth.

Although, the other factors like Productivity difference, FDI net inflow and trade openness also matter for the growth of services sector but currently each of them could not show a significant effect. The insignificant effect of these variables may be due to the reason as we have combined the data of two different samples that are developed countries and developing countries so they may suffer from aggregation bias. To know the real nature of the effect of these factors on services sector growth, it is necessary to analyse the whole sample into two separate groups, i.e. sample of chosen developed and selected developing economies.

Table 3 and table 4 shows the results obtained for chosen developed and selected developing economies respectively. For each of the two samples we estimate regression for equation (1.1) with Difference GMM estimator. The results show certain improvement for each of the two samples. In case of developed countries, out of five explanatory variables, the three variables (GDP per capita, FDI and trade openness) show significant effect. Besides, in chosen developing economies, four out of five variables (GDP per capita, FDI, innovations and trade openness) demonstrate the association with services sector growth significantly.

The coefficient of GDP per capita has appeared significant with positive sign in case of both samples of selected developed and selected developing countries. It indicates that services in

Table 5.1: Results for a combined sample of developed and developing economies

Independent Variables	Static Estimation			Dynamic Estimation
	Pooled OLS	RE	FE	Diff- GMM
SERt-1				-0.06448
				-0.23
GDPP	0.5925098	0.5271118	0.4571263	0.7894068
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
PDIF	2.18	8.57	2	-5.95
	-0.96	-0.985	-0.651	-0.425
INN	-2.3	-3.64	-3.89	0.0000268
	-0.106	-0.082	-0.383	(0.056)*
FDI	-0.0451025	0.0364163	0.0932442	-0.1229849
	-0.672	-0.735	-0.385	-0.602
TOP	1.471964	0.3989544	-6.108935	-3.461909
	(0.005)***	-0.588	(0.000)***	-0.641
Observations	336	336	336	308
R^2	0.31	0.3	0.02	
B-P LM test	0			
p- value	-1			
Hausman test		21.9		
P- value		-0.0005		
Instruments				47
AR2 test				-1.02
p-value				-0.306
Sargan test				56.49
p-value				-0.054

these countries are considered more luxuries and more need satisfying as compared to goods, hence, when income per capita increases in these countries, the public tends to further increase their demand for services as compared to goods. The coefficient magnitude of GDP per capita in a sample of selected developing countries (0.76) is greater than the coefficients magnitude of GDP per capita in selected developed countries (0.60). It indicates that the income elasticity of services is higher in selected developing countries as compared to the selected developed countries. These results are in accordance withEstrada.et.al,(2013)that reporta significant positive association between GDP per capita and services sector growth.

Table 5.2: Results for selected developed economies

Independent Variables	Static Estimation			Dynamic Estimation
	Pooled OLS	RE	FE	Diff- GMM
SERt-1				0.0062811
				-0.949
GDPP	0.7708793	0.7708793	0.7677959	0.60684
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
PDIF	-0.0006287	-0.0006287	-0.0014522	0.007428
	-0.402	-0.401	-0.527	-0.28
INN	0.0210341	0.0210341	0.2747879	0.4745105
	-0.859	-0.859	-0.476	-0.512
FDI	0.2428669	0.2428669	0.1388773	0.2619307
	(0.002)***	(0.002)***	-0.128	(0.037)**
TOP	-3.24761	-3.24761	-4.163366	-9.476171
	(0.001)***	(0.001)***	(0.028)**	(0.000)***
Observations	175	175	175	161
R2	0.691	0.691	0.6643	
B-P LM test	0			
p- value	-1			
Hausman test		5.63		
P- value		-0.344		
Instruments				27
AR2 test				1.21
p-value				-0.226
Sargan test				66.56
p-value				-0.13

Productivity difference between manufacturing sector and services sectors could no more show a significant effect on services sector growth in both chosen developed and selected developing economies. The insignificant effect of productivity difference suggests that the services sector has never been less productive as compared to manufacturing sector. In fact there were some errors related to the definition and measurement of services sector productivity, which has shown the services sector lesser productive as compared to manufacturing sector (Maroto-Sánchez, 2012). Although, there are few categories of services that are lagged behind in productivity as compared to manufacturing sector but services sector as a whole does not have the

Table 5.3: Results for selected Developing economies

Independent Variables	Static Estimation			Dynamic Estimation
	Pooled OLS	RE	FE	Diff- GMM
SERt-1				-0.1221
				-0.144
GDPP	0.8109663	0.8109663	0.7694365	0.76875
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
PDIF	0.0000855	0.0000855	0.0000963	0.0002094
	-0.796	-0.796	-0.762	-0.554
INN	0.5650983	0.5650983	1.107889	0.8672283
	(0.004)***	(0.003)***	(0.000)***	(0.081)*
FDI	0.2032876	0.2032876	0.2000556	0.3142237
	(0.092)*	(0.090)*	(0.088)*	(0.026)**
TOP	0.238635	0.238635	-7.882495	-7.549656
	-0.618	-0.617	(0.000)***	(0.056)**
Observations	175	175	175	161
R2	0.6177	0.619	0.1173	
B-P LM test	0			
p- value	-1			
Hausman test		21.9		
P- value		(0.0005)***		
Instruments				47
AR2 test				0.9
p-value				-0.368
Sargan test				51.44
p-value				-0.127

Values in the parenthesis are P-values.
****, **, * represents significance at 1%, 5% and 10% respectively.*

productivity related issues (Mitra et al., 2013). Furthermore, due to technological advancement and introduction of new modes of production, the per worker productivity in services sector has been increased and the productivity difference between manufacturing sector and services sector has been narrowed in last two decades (Triplett and Bosworth, 2003).

Although, services sector growth does not respond to innovations in case of developed countries but its effect on services sector growth is significant in case of selected developing countries.

These results are in line with Wang (2013), which suggest that after World War II the role of innovations have increased in developing countries which have smaller size market while its role has decreased in developed countries with large size of market. The main reason behind insignificant effect of innovation on services sector growth in case of developed countries is that the development of new technology involves high expenses and uncertainties. To have more cost effective innovations, the technologically advanced countries sought innovation opportunities off-shore in developing countries (Paeth and Mannig, 2013). Hence, role of Innovations is more important in developing countries rather than in developed countries.

The coefficient of FDI for both selected developed and developing countries has appeared significant with positive sign that indicates its supportive role for services sector in both sample of selected developed and selected developing countries. FDI inflow brings modern technology that improves human capital in host country and introduces new modes of services provision. For developed economies, FDI is a source of financial inflow while for developing countries foreign direct investment is not only the source of financial inflow but also a complete package of technology transfer, skills and technical know-how. FDI inflow provides relatively greater support to the developing countries, this is obvious also from the coefficient magnitude of FDI in a sample of selected developing countries (0.31) which is greater than the coefficient magnitude of FDI in a sample of selected developed countries (0.26).The supportive role of FDI for services sector growth has also suggested by Jain and Ninan (2010).

Trade openness exhibits significant with negative impact in case of both samples of selected developed and developing countries. It indicates that as these countries experience high degree of trade openness it increases foreign demand for their goods rather than services. Hence, both of these two groups of countries need to maintain the degree of trade openness at such a threshold level that could increase trade in goods without decreasing trade in services. As the coefficient magnitude of trade openness is relatively greater in case of selected developed countries (-9.4) as compared to the coefficient magnitude in case of selected developing countries (-7.4). So it is obvious that services trade in selected developed countries is more sensitive to the degree of trade openness as compared to the selected developing countries. Our results are in accordance with Vamvakidis and Dodzin (1999).

While moving towards equation (1.2) the results slightly change with respect to signs and significance. Table 5 contains the results obtained by estimating the equation (1.2) that includes the interaction terms as well. The results obtained by estimation of equation (1.2) for combined sample of developed and developing countries show that the explanatory variables do not have any significant effect on services sector growth in interaction with other variables. The coefficient of PDIF*GDP, INN*FDI, FDI*HC and TOP*GDP all are insignificant. While moving towards selected developed countries and selected developing countries separately, the results show some improvement. The effect of productivity difference in interaction with GDP per capita growth (PDIF*GDPP) possesses no significant association with services sector growth in a sample of selected developed countries and also in sample of selected developing countries. The effect of innovation on services sector growth in interaction with FDI has found significant positive in case of both samples of selected economies. It indicates that when services sector become more innovative it can easily attract foreign direct investment from abroad. The effect of FDI in interaction with Human Capital has found significant positive in case of both selected developed and selected developing countries. The positive effect of FDI in interaction with human capital suggest that as innovations increases it improve the human capital by providing new skills and technical know-how which causes the growth of services sector.

Although, the effect of innovations without interaction term was insignificant for services

Table 5.4: Results for interaction

Independent Variables	Estimation results based on GMM		
	Combined	Developed	Developing
SERt-1	-0.0439	0.2289874	-0.02208
	-0.452	-0.104	-0.678
GDPP	-0.55742	-0.38408	0.57037
	-0.376	(0.075)*	(0.000)***
PDIF	0.00014	0.00059	9.02
	-0.429	-0.932	-0.647
INN	2.08847	-3.15227	1.65546
	(0.045)**	-0.134	0.099*
FDI	2.84428	-19.06457	6.8949
	(0.012)**	(0.003)***	(0.001)***
TOP	-5.90729	6.484798	-8.70583
	(0.497-)	(0.010**)	(0.000)***
PDIF*GDP	-0.00003	-0.00033	-2.03
	-0.369	-0.392	-0.642
INN*FDI	-0.06412	0.73335	0.82739
	-0.778	(0.004)***	(0.001)***
FDI*HC	-0.02124	0.1115578	-0.00248
	-0.293	(0.060)*	-0.869
TOP*GDPP	0.82844	0.738815	0.15751
	-0.139	(0.012)**	(0.005)***
Observations	308	154	155
Instruments	24	68	46
AR2 test	-1.21	0.53	-1.33
p-value	-0.226	-0.59	-0.185
Sargan test	17.34	97.35	55.2
p-value	-0.239	(0.0.001)	-0.021

Values in the parenthesis are P-values.
****, **, * represents significance at 1%, 5% and 10% respectively.*

sector growth in a sample of selected developed countries but using innovation with interaction term this effect has become significant. Similarly the coefficient of trade openness in interaction

with GDP per capita TOP*GDPP is significant positive. The sign of the coefficient has changed from negative when it was used without interaction of GDP per capita in equation (1.1) to the positive sign in the current equation (1.2). The positive sign of TOP*GDPP indicates that as the degree of trade openness increases it increases the trade in services which further has positive effect on income per capita and then on services sector growth in case of both selected developed countries and selected developing countries.

6 Conclusion

On the basis of empirical results, the current study concludes that GDP per capita, trade openness and FDI are the possible factors which affect the services sector growth in selected developed countries. While in case of selected developing countries these factors are GDP per capita, trade openness, FDI, and Innovations. Further, Innovations carry the significant impact on services sector growth only in case of selected developing countries while the productivity gap between manufacturing sector and services sector has no significant effect on the growth of services sector in both selected developed and developing countries. GDP Per Capita, FDI net inflow and Innovations having positive effect while trade openness has negative effect on the growth of services sector. The current study also examined the effect of these variables in interaction with other variables. Through these interactive variables, the explanatory variables affect services sector growth. In case of selected developed countries innovations in interaction with FDI, FDI in interaction with human capital and trade openness in interaction with GDP per capita have shown significant positive effect on the services sectors growth. However, in case of selected developing countries only the two variables that is Innovation in interaction with FDI and trade openness in interaction with GDP per capita have shown significant positive effect on services sector growth. Furthermore, the productivity difference in interaction with GDP per capita (PDIF*GDPP) is insignificant in both the sample of selected developed and developing countries.

When the explanatory variables are used in interaction with other variables, our results change slightly with respect to signs and significance of different variables. The innovations which was significant only in case of selected developing countries (when it was used without interaction with FDI)but now it has significant positive effect on services sector growth in interaction with FDI (INN*FDI) in both the samples of selected developed countries as well as in the sample of selected developing countries. The coefficient of FDI in interaction with human capital is insignificant in case of the sample of selected developing countries, however it was significant when it was used without interaction with human capital.

6.1 Policy Implications

As FDI has significant positive effect on services sector growth in both selected developed and selected developing countries. FDI inflow can enhance the process of human capital development, enhance labor efficiency by providing latest skills and technical know-how as well as it also creates new jobs. FDI is a source of financial and technology transfer to the recipient countries which have a spillover effect on growth and development of the economy as a whole. Developing countries need to focus on measures that are helpful to attract FDI from abroad, particularly, in sectors which are more knowledge intensive and require high technology and research & development. Furthermore, our empirical results indicate that despite of relatively

higher share of service in output and employment, the productivity of this sector is still lagging behind the manufacturing sector. The relatively lower productivity of the services sector is due to relatively less innovative activities practiced in services sector. The services sector remained deprived of innovations practices because of the traditional view that considers services sector mostly as not innovative. But the reality is not so, although the innovations in services may have some hurdles as services activities are of more heterogeneous nature where some of the services categories are not innovative but most of the services categories are knowledge intensive which can be made more productive by services innovation. The services sector can perform an important role particularly in developing countries whose structure of output and employment has been shifted from agricultural and industrial goods to the production of knowledge intensive services. The productivity of this sector can be enhanced by product innovations (introducing new goods or services), process innovations (introducing new production techniques) and marketing innovations (the implementation of new marketing strategy of goods and services). The innovations in services can be promoted through technology development and introducing new ideas of production. Hence, there is a need to give proper attention to innovations in services by designing appropriate innovation framework that focus mainly on innovations in Knowledge intensive services sectors.

References

Agya, A. A. and Wunuji, E. A. (2014). Effect of foreign direct investment on china economic growth: A granger causality approach. *IOSR Journal of Economics and Finance*, 2(4):56–63.

Ajmair, M. and Ahmed, U. (2011). Services sector reforms in pakistan-impacts and implications. *European Journal of Scientific Research*, 65(3):329–341.

Baumol, W. J. (1967). Macroeconomics of unbalanced growth: the anatomy of urban crisis. *The American economic review*, 57(3):415–426.

Berlingieri, F., Bonin, H., and Sprietsma, M. (2014). *Youth unemployment in Europe: Appraisal and policy options*. ZEW Gutachten/Forschungsberichte.

Berman, E., Bound, J., and Griliches, Z. (1994). Changes in the demand for skilled labor within us manufacturing: evidence from the annual survey of manufactures. *The Quarterly Journal of Economics*, 109(2):367–397.

Blundell, R. and Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of econometrics*, 87(1):115–143.

Chakraborty, C., Nunnenkamp, P., et al. (2006). Economic reforms, foreign direct investment and its economic effects in india. Technical report, Kiel Working Paper.

Chenery, H. B., Syrquin, M., and Elkington, H. (1975). *Patterns of development, 1950-1970*, volume 75. Oxford University Press London.

Clark, C. (1940). The conditions of economic progress, mcmillan.

D'agostino, A., Serafini, R., and Ward-Warmedinger, M. E. (2006). Sectoral explanations of employment in europe-the role of services.

El Khoury, A. C. and Savvides, A. (2006). Openness in services trade and economic growth. *Economics Letters*, 92(2):277–283.

Estrada, G. B., Acharya, Y., Batten, A., Brimble, P., Doung, P., Gulamov, M. I., Hossain, M. Z., Mellor, D. P., Park, D., and Rahman, M. S. (2013). The service sector in lower-income asian economies. *Asian Development Bank Economics Working Paper Series*, (347).

Fisher, A. G. (1935). The economic implications of material progress. *Int'l Lab. Rev.*, 32:5.

Ghani, E. and O'Connell, S. D. (2014). *Can service be a growth escalator in low-income countries?* The World Bank.

Griliches, Z. (1992). Introduction to" output measurement in the service sectors". In *Output measurement in the service sectors*, pages 1–22. University of Chicago Press.

Hijzen, A., Görg, H., and Manchin, M. (2008). Cross-border mergers and acquisitions and the role of trade costs. *European Economic Review*, 52(5):849–866.

Inman, R. P. (1988). *Managing the service economy: prospects and problems*. Cambridge University Press.

IQBAL, J., SALAM, M., and NOSHEEN, M. (n.d). The determinants of services sector growth: A cross country analysis.

Iram, S. and Nishat, M. (2009). Sector level analysis of fdi-growth nexus: A case study of pakistan. *The Pakistan Development Review*, pages 875–882.

Jain, S. and Ninan, T. (2010). Servicing indias gdp growth. *Indias Economy Performance and Challenges, Essays in Honour of Montek Singh Ahluwalia*, pages 328–65.

Jones, R. S. and Yoon, T. (2008). Enhancing the productivity of the service sector in japan.

Kim, H.-J. (2006). The shift to the service economy: Causes and effects. *Institute for Monetary and Economic Research*.

Lages, L. F. and Fernandes, J. C. (2005). The serpval scale: A multi-item instrument for measuring service personal values. *Journal of Business Research*, 58(11):1562–1572.

Licht, G., Ebling, G., Janz, N., and Niggeman, H. (1999). Innovation in the service sector. *Selected Facts and Some Policy Conclusions. Paper Prepared for the Experts Group on Innovation Policy*.

Maroto-Sánchez, A. (2012). Productivity in the services sector: conventional and current explanations. *The Service Industries Journal*, 32(5):719–746.

Mehta, M. (1985). Urban informal sector: Concepts, indian evidence and policy implications. *Economic and Political Weekly*, pages 326–332.

Mitra, D., Ranjan, P., Eichengreen, B., and Gupta, P. (2013). Exports of services: Indian experience in perspective. *Indian Growth and Development Review*.

Nayyar, G. (2009). The demand for services in india. a mirror image of engel's law for food?

Paeth, H. and Mannig, B. (2013). On the added value of regional climate modeling in climate change assessment. *Climate dynamics*, 41(3-4):1057–1066.

Ramaswamy, M. R. and Rowthorn, M. B. (1993). *Centralized Bargaining, Efficiency Wages, and Flexibility*. International Monetary Fund.

Renuka, M. and Kalirajan, K. (2002). How incomeelastic is the consumers demand for services in singapore? *International Economic Journal*, 16(1):95–104.

Russo, G., Gorter, C., and Schettkat, R. (2001). Searching, hiring and labour market conditions. *Labour Economics*, 8(5):553–571.

Sabolo, M. Y. (1975). *The service industries*. International Labour Office.

Salam, M., Iqbal, J., Hussain, A., and Iqbal, H. (2018). The determinants of services sector growth: A comparative analysis of selected developed and developing economies. *The Pakistan Development Review*, 57(1):27–44.

Sapprasert, K. (2006). The impact of ict on the growth of the service industry. *Centre for Technology, Innovation and Culture (TIK) University of Oslo*.

Schettkat, R. and Yocarini, L. (2003). The shift to services: a review of the literature.

Sen, C. (2011). Fdi in the service sector–propagator of growth for india?

Singh, M. and Kaur, K. (2014). Indias services sector and its determinants: An empirical investigation. *Journal of Economics and development Studies*, 2(2):385–406.

Summers, L. H. (1985). Taxation and the size and composition of the capital stock: An asset price approach. Technical report, National Bureau of Economic Research.

Triplett, J. E. and Bosworth, B. (2003). Productivity measurement issues in services industries: Baumol's disease has been cured. *Economic Policy Review*, 9(3).

Vamvakidis, M. A. and Dodzin, M. S. (1999). *Trade and industrialization in developing agricultural economies*. Number 99-145. International Monetary Fund.

Wang, C. (2013). The long-run effect of innovation on economic growth. *School of Economics UNSW, Sydney*, 2052.

Wu, Y. (2007). Service sector growth in china and india: A comparison. *China: An International Journal*, 5(1):137–154.

Appendix A1

Table .1: Variables Included and Their Expected Signs

	Dependent variable:	**Services Value Added Annual Growth (SER)**		
S.no	**Variables name**	**Notations**	**Construction of Variable**	**Expected sign**
1	**GDP per capita**	**(GDPP)**	GDP/ total population (annual growth)	Positive
2	**Productivity gap between manufacturing sector and services sector**	**(PDIF)**	(Per worker productivity in Manufacturing sector) (Per worker productivity in services sector)	Positive
3	**innovations**	**(INN)**	Patents applications filed from abroad + patents applications filed from inside the country	Positive
4	**Foreign Direct investment inflow**	**(FDI)**	Foreign Direct Investment Inflow % of GDP	Positive/Negative
5	**Trade Openness**	**(TOP)**		Positive/ Negative
6	**Productivity gap between manufacturing sector and services sector in interaction with GDP per capita.**	**PDIF*GDPP**	Productivity difference between manufacturing sector and services sector multiplied by GDP per capita annual growth.	Positive
7	**Innovations in interaction with Foreign Direct Investment**	**INN*FDI**	Total number of patents applications filed multiplied by foreign direct investment net inflow % of GDP.	Positive/ Negative
8	**Foreign Direct Investment in interaction with Human Capital**	**FDI*HC**	Foreign direct investment net inflow % of GDP multiplied by net enrolment rate secondary % (both male and female).	Positive Negative
9	**Trade Openness in interaction with GDP per capita**	**TOP*GDPP**	trade openness multiplied by GDP per capita annual growth	Positive/ Negative

Jinnah Business Review
July 2020, Vol. 8, No. 2, pp. 133-137

CONTRIBUTOR'S GUIDELINES

Abstract. .
The management of Jinnah Business Review (JBR) encourages researchers to prepare their articles in accordance with the following guidelines and submit their manuscripts online, preferably. Before submitting your articles online, you will have to transform your article in to our Journals template; and for this purpose, you can use a specimen provided for the article on our research center's website (www.jbrc.pk) as a base. .

AIMS AND SCOPE

Jinnah Business Review (JBR) is the academic research journal of the Jinnah Business Research Center of Capital University of Science and Technology, Islamabad (Pakistan). The Journal publishes theoretical and empirical research papers in management, finance, human resource management, marketing and economics, and all other related disciplines of management and social sciences. Its primary focus is on empirical studies with an emphasis on the policy relevance of the findings.

JBRs goals are to inform the academic, business, and public policy communities of the results of relevant current research; to provide expert analysis of current events and reviews of literature in the field; and to add to the business literature material suitable for academics, executives, and professionals.

New innovative concepts, ideas and practices about businesses, industry, and management related disciplines are therefore welcomed. The submitted articles are undergone through a two-tiered review; the first evaluation is carried out by the JBR Editorial Advisory/Working Committee consisting of members from each relevant discipline, and the second review by peer referees and experts working in the related fields in Pakistan and abroad.

INSTRUCTIONS FOR AUTHORS

The Editors welcome preliminary inquiries about manuscripts for possible publication. There is no standard fixed length for articles, but a 15 20 A4 pages, with 12-fonts and 1-line space article would suffice. Manuscripts should be prepared according to the following style rules (deviations from these rules can cause publication delays).

Content, Length, and Formatting

It is the author's responsibility to make the submitted paper readable, relevant, and interesting, before submission and consideration by referees. This require.

Length

All submitted papers must be formatted according to the instructions below, and must be no more than 15 20 US letter pages, as defined earlier. This page limit includes all parts of the paper: title, abstract, body, bibliography, appendices and tables.

Abstract

An abstract not exceeding 250 words comprising the following is required in the following format:

Authors name (s) and affiliation

a) Email address

b) Title and abstract content

The abstract content should clearly state:

a) Research questions and/or objectives

b) Methodology

c) Scope of investigation/findings

Full paper

a) A4 size paper

b) Margins must be 1 inch on all sides

c) Font size 12 Times New Roman (body text)

d) Title, subtitles, abstract and references single spaced; body text 1 $\frac{1}{2}$ - line spaced

e) Referencing, graphics & tables will be considered in the total page count.

f) Do not include page numbers, header & footer.

g) Maximum 15 20 pages

h) Other formatting details see next section

Tables and Figures

a) All unessential tables and figures should be eliminated.

b) Tables must be submitted in Microsoft Word table format, and should be created using Times New Roman text, 10 point size. APA-style provided elsewhere must be preferred.

c) Figures must be clearly produced in black and white. All text included in figures should be Times New Roman (10 point minimum).

d) Each table and figure should fit on a single page. Tables and figures may be oriented horizontally (landscape) or vertically (portrait) within the allotted space.

e) Each table and figure should be submitted on a separate sheet and identified with a table or figure number and a descriptive title.

f) Legends and titles on tables and figures must be sufficiently descriptive such that they are understandable without reference to the text.

g) For data not generated by the author(s), the source of the data should be given (in short form) below the table or figure and listed in full in the references.

h) Every table and figure must be referred to in the text. Each table and figure will appear in the journal after its first mention in the text.

File type

All papers are to be submitted as a single MS WORD file, formatted for 8.5" x 11" paper. It is essential that submitted papers print without difficulty on a variety of printers.

Anonymity Requirements for Double-Blind Reviewing

All research papers submitted to JBR will undergo a "double-blind" reviewing process: the program committee members and referees who review the paper will not know the identity of the authors. To ensure anonymity of authorship, authors must prepare their manuscript as follows:

a) Authors' names and affiliations must not appear on the title page or elsewhere in the paper.

b) You must also use care in referring to related past work, particularly your own, in the paper. The following types of statements must be avoided:
In our previous work [1,2], we presented two algorithms for ——— In this paper, we build on that work by ——— .

Footnotes and References

a) Footnote material should be incorporated into the text whenever possible. If footnotes are necessary, the note number should be typed in the text and superscripted. The notes should be collected at the end of the text as endnotes.

b) References should be (a) integrated into the text in short form and (b) collected together at the end of the article. APA format needs to be followed.

i) In-text, citations should be placed in parentheses and noted as follows:

For book or academic journal - (last name of author[s], date); such as: (Hill, 1988); (Beatty, 1989; Feltham, et al. 1991; Leland & Pyle, 1977).
If no author, cite journal, institution, or publisher. For works with three or more authors, list the first author followed by et al. as shown above. For multiple citations, alphabetize citations by first authors last name.

ii) The full bibliographic information in the references should be composed as follows:

For book - author[s]. year. book title. edition number [if applicable]. location: publisher. Such as: Yin, R.K. (2003). Case Study Research:
Design and Methods. 3rd Edition. Thousand Oaks, California: Sage Publications, Inc.

For edited volumeeditor[s] (ed[s].). year. book title. edition number [if applicable]. location: publisher.

Such as: Nelson, R.R.(ed.).(1993). National Systems of Innovations: A Comparative Analysis. Oxford: Oxford University Press.

For chapter in edited volume - author[s]. year. chapter title. in editor[s] (ed[s].). book title, pp. chapter page numbers. location: publisher.

Such as: Groenewegen, John and Jack Vromen (1997). Theory of the firm revisited: New and neo-institutional perspectives. In Lars Magnusson and Jan Ottosson (eds.) Evolutionary Economics and Path Dependence, pp. 33-56. Cheltenham, UK: Edward Elgar.

For article in academic journal - author. year. article title. journal title. volume number (issue number): page numbers.

Such as: Black, J. S., Gregersen, H. B. & Mendenhall, M.E. (1992). Toward a Theoretical Framework of Repatriation Adjustment. Journal of International Business Studies 23 (4): 737-760.

The author(s) should make sure that there is a strict one-to-one correspondence between the in-text citations (including citations in footnotes, tables, and figures) and the list of references in the References.

Copy Preparation

JBR accepts manuscripts via internet or post or e-mail. All hard-copy submissions must be accompanied by a disk or CD containing an electronic version of the manuscript. The manuscript should be prepared using a recent version of Microsoft Word and should utilize standard fonts and symbols. Ideally, such a manuscript should be formatted with regard to the following guidelines:

a) Do not use tabs except in tables.

b) Do not indent block quotations.

c) Do not hyphenate or otherwise break words across lines.

d) Use headings sparingly and logically. Do not use more than three levels of headings. Use consistent formatting for each heading level employed.

Copyright Transfer

a) Submission of a paper will be held to imply that it contains original unpublished work and is not being submitted for publication elsewhere.

b) Submission of a paper also implies that, upon acceptance of an article by the journal, the author(s) will transfer copyright of the article to the publisher. The transfer will ensure the widest possible dissemination of information.

c) It is understood that submission of the paper for publication has been approved by all of the authors and by the institution where the work was carried out; it is further understood that any person cited as a source of personal communications has approved such citation.

Miscellaneous

a) Papers must be in English. Use American spelling instead of British (e.g., labor, not labour). Use the American terms such as billion (one billion = 1,000,000,000; one trillion = 1,000,000,000,000), rather than lakhs and crores.

b) Spell out all numbers from one to ninety-nine, unless:

i) the number contains a decimal point, e.g., 6.2 and 0.12.

ii) the number precedes a percent sign or a unit of measure, e.g., 47% and 16m.

c) Italicize and define non-English words at their first occurrence; at subsequent occurrences, format the word in roman (no italicized) type.

d) A short abstract of the paper should always be included with the submission.

e) Please keep a copy of everything sent to JBR, both hard copy and electronic copy, and bear in mind that the electronic version received at JBR will be considered the master copy. The Editors do not accept responsibility for damage to or loss of submitted papers or electronic media.

f) A short note listing each authors institutional affiliation, current address, telephone numbers, e-mail address, and other relevant biographical information, including publications and a photograph should be provided.

g) Any manuscript that does not conform to the above instructions may be returned for the necessary revision before publication.

h) Each author is entitled to one copy of the issue in which his or her article appears.

Note:

Editor reserves the right to amend, abridge or otherwise alter the contents of the paper to make it suitable for publication. However every endeavor will be made not to affect the spirit or effectiveness of the paper.

JINNAH
BUSINESS RESEARCH CENTER
Capital University of Science and Technology
Islamabad Expressway, Kahuta Road, Zone-V,
Islamabad, Pakistan

ISSN 2070-0296
9 772070 029007