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# THE IMPACT OF WORK ENGAGEMENT ON EMPLOYEE MENTAL WELL-BEING

Romana Pervaiz Khokhar<sup>1</sup> and Nadia Ayub<sup>2</sup>

## Abstract

*The purpose of this study was to investigate the impact of work engagement on employee mental well-being. On the basis of the literature review, it was hypothesized that 1). There would be an impact of work engagement on the well-being of the employee, and 2). There would be a gender difference in work engagement and mental well-being of employees. Data for this study was taken from large to mid-size organizations from three large industries within Karachi: 1) Banking, 2) Telecommunication, and 3) Manufacturing. A total of 449 (373 males, & 76 females) participated in this study. Work engagement was assessed by the DDI Work Engagement Survey (Wellins., Bernthal, Phelps, 2012) whereas Mental Well-Being was measured using The Warwick-Edinburgh Well-Being Scale (Stewart-Brown, Janmohamed, 2006). The result was analyzed by using Linear Regression to test hypothesis one and t-test was used to assess hypothesis two. The research results do not support the two stated hypotheses. The implication of the study for businesses and organizations are the tangible and intangible benefits on employee well-being. The insights gained would indicate that work engagement is a major component to, and provides for (increased) levels of mental well-being of employees, thereby resulting in a productive and effective workforce. Employees, as a consequence, have a balanced approach towards work and life with fewer overall work concerns.*

**Keywords:** Employees, Mental Well-Being, Work Engagement, Effective Workforce.

**JEL Classification:** M190

## Introduction

Workplaces are diverse. Whether in the public or private sector, they vary in size, type of activity and in the cultural traditions of the organization. In spite of these differences, the work life has been, and remains, an essential part of adult life (Lyubomirsky, King, & Diener, 2005a). Intertwined with economic and personal connections, work offers a secure livelihood as well as an astute sense of self-affirmation and self-worth leading to strengthening of the self-esteem.

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Work is an essential part of social integration and community living, and consequentially it is integral that employees feel committed to the organization (Shuck & Reio, 2011). In the past, extensive literature has been reviewed and analyzed to understand the relationship(s) between the psychological aspects of work life (CIPD, 2006).

There are manifold benefits associated with both high work engagement and well-being scores. An organization's success depends on maintaining and sustaining a talented and productive workforce working within a stable environment, and delivering high quality products and services (O'Malley, 2000). In the future, changes in the economy and global competition will increase the challenges present in the nature of work, technology infusion and demographics changes (Robinson, Perryman, & Hayday, 2004). Chandler and McEvoy (2000) studied a lingering question in management research: is there a consistent set of principles or practices that can be said to universally represent a holistic view to managing employees and increasing mental well-being? Research, studies and theories suggest that used in combination as well as separately, HR practices remain associated with improved organizational performance (Boxall, 1996).

Well-being has been researched extensively in the last 20 years. The research offers multiple theories as to the meaning, definition and constructs of mental well-being (Sumner, 1996). Thomas (2009) argues that mental well-being is elusive, difficult to define and often hard to measure. Work engagement has been defined concurrently as an employee attitude and behavior, and organizational phenomenon. (Tiberius & Hall, 2010). However, the definition notwithstanding, in nearly all of the descriptions engagement is construed and linked with employee mental well-being (Yousuf-Morgan & Bockorny, 2013).

Lewis, Donaldson-Feilder and Tharani (2011) offers a definition of work engagement as an approach focused on what one does (thinking), feeling good about oneself within the assumed role and the organization (feeling), and acting in a positive manner and commitment towards organizational values and objectives (acting). There are multiple factors that have an impact on the environment. These elements continue to make demands on mental capital and well-being, and at the same time offer opportunities for people to develop and flourish (Bamberger & Meshoulam, 2000). Challenges within the environments – global and national - have forced organizations to relook at their ability to evolve with time and cater to the changing requirements of both employees and customers. Such changes, imperative for growth and profitability, refer to systems, structures and processes as well as skills and abilities of staff.

The changing nature of work implies that today, as organizations expand and shrink in accordance with market demands, the workplace is becoming increasingly unpredictable with a decrease in job security and increased layoffs. Extensive changes and developments have occurred in the work place during the past decade. Caliskan (2010) found that employees who were involved in a change program and communication strategy reported significant increase in self-evaluated

performance. The emergence of knowledge on the nature of work, motivation of employees and business fundamentals has resulted in a growing need to further explore and determine the capabilities of employees – both psychological and physical – in order to perform the assigned tasks (Weehuizen, 2008).

Within the context of internal and external factors and the changing climate, an important issue is how organizations can gain a higher level of commitment from their employees. High levels of organizational commitment result in and encourage loyalty, decrease levels of absenteeism and increase levels of productivity (Bunting, 2004). For a number of employees change causes feelings of uncertainty and unease given the nature and future existence of their jobs. These changes are on-going and together with a shrinking labor market, contribute to a heightened sense of job insecurity. Budhraj (2008) states that employees are often unable to cope with increasing demands, limited resources, and a (perceived) lack of control. Organizational instability causes some employees to shift their commitment from increasingly transient work organizations to seek relative stability with other organizations, within the domain of their occupations (Johnson, 2004).

The evolving mix of cultures, altering family structures, developing patterns of migration and increasing need for communication drive the need to connect with greater access across cultural groups and generations (Wellin & Concelman, 2005). Several aspects of emotional capital and mental well-being could be affected by learning through life, developing approaches to flexible work and encouraging the involvement of baby boom generation in a continued fashion (Eichinger & Lombardo, (2005). The cycles of opportunities, social cohesion, togetherness across generations will be required as a result (Tatli, Ozbilgin, & Worman, 2006)

“What drives an employee to go to work each day?” Employees choose a course of action and engage in certain behaviors and attitudes due to internal and external forces of motivation (Newstrom, 2007). Workplaces are designed with the objective of creating sustainable environments functioning optimally. Employees who are committed to the organization’s goals and values are further motivated to contribute to the organizational success (Ulrich, 1997a). As such the level of commitment, or the lack thereof, can influence the employee’s sense of mental well-being. Engagement programs or processes therefore have the objective of improving the mental and physical health of employees (Dollard & Bakker, 2010).

Studies indicate that one of the fundamental methods for employee retention is to develop engaged employees through investment in their mental well-being. Bevan (2010) noted that a large number of employers, particularly in large organizations, were adopting measures to promote and support health and mental well-being of their workers in order to improve productivity and endurance (Corporate Leadership Council, 2004). The subject of mental well-being has been studied extensively in the last decade (Diener, Suh, Lucas, & Smith, 1999; Kahneman, Diener & Schwarz, 1999). In recent times there has been great interest in work engagement and employee mental well-being

(Stratham & Chase, 2010). However, there has been considerable variance in the approaches towards the subject of mental well-being (Spector, Cooper, Sanchez, Schmotkin, & Ryff, 2002).

In sum, This study explores the evidence regarding linkages between employee mental well-being and work engagement. The definition of work engagement as an employee attitude has strong implications for, and overlaps with, mental well-being and health (Schaufeli, Taris, & van Rhenen, 2008). Engagement is defined as a set of actions (or the associated intensity of action) and it is possible therefore that actions will influence mental well-being (Keyes, Shmotkin, & Ryff, 2002)

This study will assist to identify the threats pervading the mental well-being. The threats in this case can be psychological as well as emotional. The two hypotheses of the study are as follows:

1. To determine if there will be an impact of work engagement on mental well-being.
2. To determine gender differences in measurements of mental well-being and work engagement.

## **Methods**

### ***Sample***

Data for the study was collected from employees of four organizations. The participants consisted of permanent staff at various levels within the organizations. Questionnaires were distributed and sent to the researcher via email. Prior to completing the questionnaire, the participants were informed that participation was voluntary and that all information would be treated confidentially. The participants selected for the study were mid to junior level managers. Exclusion criterion in the research study were based on the following: Top Line Management and Leaders and Contract Staff. A total of 700 questionnaires were distributed of which 449 completed questionnaires were returned. The returned questionnaires indicated a response rate of 64%.

### ***Measures***

Each participant received a Consent form, a Demographic form and a copy of the two scales utilized for the study. The details of the scales are as follows:

**1. The DDI Work Engagement Survey** (Development Dimensions International Inc.). DDI states engagement as “the extent to which people enjoy and believe in what they do and feel valued for doing it.” To assess engagement, the DDI E3® Employee Engagement Survey, a 20 item scale was used. Responses from participants were elicited on a 7-point Likert scale ranging from 1= strongly disagree to 7 = strongly agree. All questions were scored positively. The score was calculated by totaling the scores for each item. A high engagement score indicates a high level of work engagement.

DDI's engagement value proposition includes five fundamental areas: Empowerment, Teamwork and Collaboration, Development Plans, Support and Recognition and Satisfaction and Loyalty. The scale offered five characteristics: Short, Valid, Reliable, Limited Flexibility and Actionable.

**2. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)** was developed to capture a broad concept of positive mental well-being. It covers most aspects with 14 positively worded items of positive mental health, including positive affect (feelings of optimism, cheerfulness, and relaxation), satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, mastery and autonomy). A 5-point Likert scale (none of the time, rarely, some of the time, often, all of the time) offers a score for each item from 1 to 5 respectively, giving a minimum score of 14 and maximum score of 70. All items were scored positively. The overall score for the WEMWBS is calculated by totaling the scores for each of the 14-items, with equal weights. A higher WEMWBS score indicates a higher level of mental well-being.

## Results

All data was analyzed in SPSS v.21. Frequencies and descriptive statistics were calculated for the demographic variables. To test hypothesis one i.e., There will be an impact of work engagement on employee mental well-being, linear Regression model was applied. Second hypothesis i.e., There will be gender differences in the mental well-being and work engagement of employees, was assessed by applying t-test.

As per the findings of the study of the first hypothesis, the regression model predicts the outcome variable is not significant. This indicates the statistical insignificance of the regression model that was applied. Here,  $P \geq 0.0005$  which is more than 0.05. (See table 2). The second hypothesis was assessed by applying t-test. According to the results both Mental Well-being ( $t=-.331$ ,  $Df=447$ ,  $p > .05$ ) and Employees Engagement ( $t=-.259$ ,  $df=447$ ,  $p > .05$ ) are not statistically significant.

Table 1.

*Represents Demographic Information of the Respondents (n=449)*

Demographics	Variables	Frequency	Percentage
Age	18-25	157	35%
	26-40	180	40%
	41-45	63	14%
	46-50	27	6%
	50+	22	5%
Gender	Female	76	17%
	Male	373	83%

(Table Continued...)

Marital Status	Married	287	64%
	Single	162	36%
Family	Joint	81	18%
	Separate	368	82%
Children	0	166	37%
	1 to 3	238	53%
	4 to 6	40	9%
	7 and above	4	1%
Work Experience	1 to 5	180	40%
	6 to 10	31	7%
	11 to 15	139	31%
	16 to 20	72	16%
	20 +	27	6%
Industry	Banking	225	50%
	Telecom	99	22%
	Services	76	17%
	Manufacturing	9	2%
	Other	40	9%
Area of Work	Sales	153	34%
	Administration HR	81	18%
	Information Tech	45	10%
	Finance	31	7%
	Other	139	31%

Table 2.

*Analysis of Variance for Linear Regression with Employees Engagement as predictor of Mental Well-being*

Model		SS	Df	MS	F	Sig
1	Regression	8.128	1	8.128	1.417	.234a
	Residual	2563.306	447	5.734		
	Total	2571.434	448			

a. Predictors: (Constant), Employee Engagement

b. Dependent Variable: Mental Well-being

Table 3.

*Coefficients for Linear Regression with Employees Engagement as predictor of Mental Well-being*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
1		B	Std. Error	Beta	23.209	.000
	(Constant)	58.389	2.516		-1.191	.234
	Employee Engagement	-.027	.023	-.056		

a. Dependent Variable: Mental Well-being

Table 4.

*Summary of Linear Regression with Employees Engagement as predictor of Mental Well-being*

Model	R	R Square	Adjusted R Square
1	.056a	.003	.001

a. Predictors: (Constant), Employee Work Engagement

b. Dependent Variable: Mental Well-Being

Table 5.

*The Mean Difference between Male and Female on the Variable of Mental Well-being*

	Gender	N	Mean	Std. Dev	t	df	Sig
Mental Well-being	Female	75	55.48	2.468			
					.331	447	.741
	Male	374	55.38	2.384			

Note. According to the results Mental Well-being is not statistically significant ( $t = -.331$ ,  $df = 447$ ,  $p > .05$ ).

Table 6.

*The Mean Difference between Male and Female on the Variable of Employees Engagement*

	Gender	N	Mean	Std. Dev	t	df	Sig
Employees Engagement	Female	75	109.49	5.298			
					-.259	447	.796
	Male	374	109.66	4.866			

Note. According to the results Employees Engagement is not statistically significant ( $t=-.259$ ,  $df=447$ ,  $p > .05$ ).

### Discussion

This section comprises of the summary of the research findings and strategic recommendations for leaders, managers and employees within an organization in order to understand and support importance of work engagement and mental well-being. Improved standards may be established for organizations in the context of present and approaching challenges. These challenges are complex and demanding and constitute of both external and internal influences. Awareness, anticipation and management of such factors provides the backdrop that can assist organizations develop and nurture the future growth and well-being of employed staff in accordance with the requirements of the staff.

An absence of mental well-being affects not only the individual on a personal basis but also affects areas linked to increased productivity in the work place – namely motivation, satisfaction and fulfillment. Low job output/performance is a growing reality and organizations need to manage this issue successfully with a systematic approach to mitigate the possible outcomes originating from the above stressors within the workplace, because the truth is, low job performance is a phenomenon that is increasingly becoming more problematic. The research goal of the study was to understand the impact of work engagement on well-being. This section places the research results of the study in context of obtained results. Two hypotheses were developed for this research study and statistical analyses were performed using linear Regression Analysis and t-test. The findings from the study are presented below:

*H1*: There will be an impact of work engagement on employee mental well-being.

Results from the present study nullify the stated hypotheses and are not consistent with the stated hypotheses. Therefore, the hypothesis is rejected. This research study examined the impact of work engagement on employee mental well-being at the workplace. The literature review presented in the earlier sections on employee engagement and mental well-being cited theoretical and academic perspectives whereby the relevance, significance and linkages between the two topics were examined.

The primary contention internationally (and in certain cases nationally) has been that mental well-being and employee engagement factors overlap to a great extent, have elements that offer a modicum of duplication (as opposed to segregation) and create a mutually influencing environment. Since work hours occupy a large percentage of waking hours, it was hypothesized that a congenial or otherwise a non-congenial work environment would have an effect on and directly influence mental well-being.

The review below presents views as to reasons and perspectives as to why there is a clear segregation of employee work engagement and mental well-being: changing employee perceptions leading to an enrichment of mental well-being in spite of lower engagement scores. Sennett (1998) argued that, with increased complexities within the work environment and external pressures work dissipation has taken the place of pride amongst workers. The short-term perspective and gains have taken the place of the long-term outlook. As a result, instant gratification has become the norm and is no longer the exception with a parallel erosion of feelings of pride and loyalty. Commitment, therefore, as a result of the changed workplace, has been replaced with an employee solicited “what’s in it for me” approach. Employees realize today that there is no dearth of workers and they can often be replaced easily. As a result, Sennett argues that people altruistically selfish and their interests lie in their own well-being most of the time. Therefore, most of life and decisions is sustained out of a desire to be focused on the self and remains personal.

The repercussions of this particular mind-set are multi-fold: the notion of the self-taking precedence and being the center of all activities including work, the erosion of loyalty and commitment towards the organization, the resilience and accountability factors imbued for the individual rather than accountability at the organization. Employees strive to seek identity and self-actualization (Maslow, 1943), we often see a reversion of employees towards basic and fundamental concerns in the turbulent work environment today. Prospects of good governance, able leadership, good management and fulfillment of employee concerns require a sustainable approach towards creating employee engagement.

With the changes in the social, environmental, legal and work factors, it can have envisaged that in this era a visible change is occurring in the domain of the work environment with a redefinition of the traditional psychological contract between the employer and employee. Social norms, technological developments, demographic patterns, competitive global and national organizational demands and changing expectations of employees will change the landscape of how organizations function and how employees adapt (Sparrow & Cooper, 2003). Changing requirements in allocation and distribution of factors such as empowerment, autonomy and job challenges can shift employment patterns since these requirements may be very difference from those of the earlier generation in the country (Park, 2004 to 2013).

Zuboff (2010) argues that there are potential opposing views and turbulence as workers move towards their own interests and organizations follow the path to greater profits at the expense of employee concerns. The ethical and organizational values stand in varying conflict to employee personal values thereby raising inevitably dynamic changes in employee perceptions regarding trust, loyalty, engagement and obligations of both parties (Guest, 2004). Studies have shown that the measurement of engagement is somewhat related to, but does not predict performance beyond the traditional attitude of satisfaction and commitment (Christian, Garza, & Slaughter (2011)). Cause and effect therefore between the two elements, performance and engagement, is dubious at best as most

studies have not demonstrated cause and effect. Schaufeli and Bakker (2010) state that: “Instead of presenting scientific evidence it is merely stated in (consultancy) reports that a positive relationship between employee engagement and company’s profitability has been established”.

The challenges of validity and thereby application of employee engagement scores to new concepts are: an accurate and agreed upon definition of employee engagement, measurement of engagement, understanding if indeed engagement is a new phenomenon as opposed to earlier definitions of commitment and loyalty and scientific evidence of the potential impact and value of employee engagement (Briner & Denyer, 2012). In a given culture, the degree to which an employee experiences satisfaction in their work organization indicates important aspects of organizational effectiveness and employee well-being. Support provided from the manager and the amount of autonomy given will lead to overall work satisfaction, task engagement and psychological well-being. (Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. Usunov, J. & Kornazheva, B. P. (2001)

Self-esteem is defined as the ability to maintain a positive perspective of the self (Branden, 1994). Employees with a high self-esteem are presumed to have a high sense of mental well-being and are psychologically happier and healthier and feel good about themselves and their life (Taylor & Brown, 1988). Such employees are able to cope effectively with challenges and negative feedback in spite of the social environment and enjoy life with a clear perspective even if it does not have a substantial impact on career success, productivity and other measures of life. Employees with low self-esteem are perceived to be psychologically distressed and perhaps even depressed (Tennen & Affleck, 1993).

Research evidence indicates that a high self-esteem helps to develop a defense mechanism which prevents external and organizational slights from having an adverse effect on the well-being of the individual (Mecca, Smelser, & Vasconcellos, 1989). Coopersmith (1967) defines self-esteem as the evaluation which the individual makes and maintains about his capabilities and worth. Self-esteem is therefore the judgment a person holds of his own worth. Self-esteem is thus an attitude regarding the self and is related to personal beliefs the individual holds related to knowledge, skills, abilities and social relationships.

Humans are driven by a need to survive. As such resilience plays a vital role in the quest for survival, facing challenges and face adverse events in challenging times. The capacity to mobilize characteristics enabling individuals to prevent, tolerate, overcome and be enhanced by adverse events and experiences is referred to as resilience (Mowbray, 2011). Resilience is important on a personal level as employees face an uncertain future and garner inner strength required to respond to an uncertain environment. In most events people build a set of tolerance and resistance and accommodation as we experience them and over time become immune to them. Our responses are generally based on our evaluation of the event, the severity of the newness of the event as our minds strive to accommodate.

Our primary risk and threat is ourselves as we experience distress on a regular basis and try to maintain control of ourselves at the same time. As a result of the conflicts ensuing, we develop mechanisms to manage for sustained well-being. The concept of self-efficacy has been gaining credence as a precursor to health maintenance. (Stretcher, DeVellis, Becker, & Rosenstock, 1986). According to Bandura (1982), self-efficacy affects aspects of behavior and the individual perception of capabilities to manage the task. The amount of effort expended is directly proportionate to the relevance of the task. Self-efficacy impacts, to a great extent, an individual's emotional reactions to stress, distress and (situational) thought patterns. One of the ways self-efficacy is developed is through "vicarious learning" learning that occurs through observation of events and people. Similarly, information and communication can have an influence on individuals – depending upon the credibility of the source.

*H2:* There will be gender differences in the mental well-being and work engagement of employees.

The hypothesis is rejected as there were no significant differences in the mental well-being of females as compared to the male population. The results in this case showed that mental well-being and employee engagement scores were high in both genders i.e. males and females. Consistent with research, men high in self-esteem engage successfully in future work performance behaviors, whereas women high in self-esteem engage successfully in future social behaviors. (Stein, Newcomb, & Bentler, 1992). It appears that males gain self-esteem from getting ahead whereas females gain self-esteem from getting along. With this perspective it may provide a sense of achievement for women to maintain continuity at the workplace as opposed to success and higher achievements in terms of positions.

Studies indicate that women tend to be more satisfied than their male counterparts within the work environment (Aston, 2009). Women are observed to be happier than men at the workplace (Fredrickson, 2001) and this can be attributed to the greater demands placed on men as primary bread-winners. A great many women experience lower self-worth as a result of perceptions of competence, autonomy and psychological safety and security (World Health Organization, 1998). When considering the approaches women take towards the work environment and the greater emphasis on the home life, it is easy to understand the inability of many women to maintain an appropriate balance between work and personal life. It is due to the multiple responsibilities, the social aspects and cultural expectations from women that their role at work cannot be retained as a primary focus. In light of this, the work environment takes a secondary role. The expectations of being the nurturer at home, the familial pressures of being the care-taker and adult care-giver place women in a position to earn money when required without focusing too much on the daily grind of work. Involvement at the workplace is therefore stymied.

### *Limitations of Study*

There are number of limitations of the study. A number of variables and constructs have been included in the study. However, there are other areas associated with the subject of work engagement and mental well-being that can be included further and could not have been earlier due to time and resource constraints. Considerable research has been conducted on engagement with focus on the relationship between engagement and organizational factors such as leadership, supervisory support and job design. There is an additional requirement to review the sociological perspectives of engagement and well-being as relating to cultural values, structural imperatives and power relations, impact of economic crisis and cross-national differences (Kelliher, Hope-Hailey & Farndale, 2013 & Arrowsmith & Parker, 2013). A Qualitative review of the participants by way of Focus Groups and Interviews would yield additional and valuable information for assessment and review of the reasons and exact thought process and understanding of the questionnaire. There is a requirement to gauge employee perceptions of the concepts of well-being and work engagement. Future research would benefit from qualitative study in the cultural context of Pakistan on the subject in order to ascertain there is clear understanding and astute comprehension of the subject matter on both employee engagement and mental well-being.

### **Conclusion**

The research results do not support the two stated hypotheses. Employee work engagement does not impact mental well-being thereby indicating that employees are able to maintain a balance between the two entities i.e. work environment and mental well-being. The organization is a powerful influencer of employee behavior and actions and workplaces that strive to optimize human resource to support employees also promotes programs that are based on quality and geared towards employee well-being. There is a growing concern that levels of mental ill-health and mental well-being in the workplace are insufficiently recognized by employers and therefore inadequate practices are employed to address the ensuing consequences. Within every culture there exists a certain level of bureaucracy which discourages open and effective work cultures to pave the way for further and incremental improvements in mental and physical health. The result is that employees are reluctant to express their feelings, doubts and thoughts regarding their levels of engagement for fear of the bureaucracy, employer lash-back and reprisals.

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# A COMPARATIVE STUDY ON LIQUIDITY MANAGEMENT, OPERATING PERFORMANCE AND FIRM VALUE

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## Abstract

*Managing liquidity is fundamental for expanding businesses. Without it, firms will face failure/bankruptcy. This study aims to scrutinize the association of liquidity management with operating performance and firm value by comparing different Pakistani non-financial sectors and to find this impact for the firms having high and low market value. The data is collected for 10 years i.e. 2004-2013. Panel data methodology is used. The results show that liquidity management negatively and significantly impacts both variables in the non-financial sectors. Furthermore, high and low market value firms differ significantly in terms of size, cash conversion cycle, performance and market value. Hence, firms need to manage liquidity by converting inventories and receivables into cash quickly, and making late payments to improve performance and firm value.*

**Keywords:** Liquidity Management, Working Capital Management, Operating Performance, Profitability, Firm Value, Size.

**JEL Classification:** G300

## Introduction

Liquidity management is the capacity of a firm to meet cash demands through ongoing cash flows. If a firm is not capable to maintain liquidity, it cannot earn profits as poor liquidity management means that firm have idle cash and that cash cannot be used in profit generating activities. Moreover, the firms face difficulties to operate their daily operations effectively (Panigrahi, 2013). Operating performance is an accounting measure which tells about firm's profitability. Firm value defines the firm's market position. Traditionally firm's main focus was on capital structure and long term capital budgeting but now they shifted their focus to efficient Working Capital Management (Wang, 2002). For liquidity management, current assets should possess short life span (idle cash need to be utilized

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in money generating projects) and quick transformation into other assets forms (Barad, 2010). It is crucial to have efficient WCM in order to accomplish goal of shareholder's value creation (Johnson & Soenen, 2003).

Profitability and liquidity are the main objectives of all organizations. By dropping the investment in current assets, company's productivity can be increased but it may face bankruptcy/insolvency. Hence, firms cannot ignore liquidity to earn high profits. The trade-off between both is the best solution. Teruel and Solano (2007) argued that investment in working capital (WC) depicts that risk and return (profitability) are traded-off. WC decisions that enhance returns also possess high risk. WC decisions are negatively correlated to risk so there must be tradeoff between both.

Resource based theory explained that resources are the firm's strength or weakness. If resources are managed effectively the firm's productivity, its performance and value can be improved (Wernerfelt, 1984). Agency theory explains the conflicting behavior of principal and agent but these conflicts can be reduced if the management takes care of the firm's performance and there is well structured/formalized management system. Reduction in these problems will lead firms towards better performance (Nayak & Greenfield, 1998). Transaction theory explains the investment in the short and the long term resources. The theory argues that firms should invest in maximum profits generating projects. These transactions should be efficiently managed to enhance the value of a firm (Main & Smith, 1992).

Liquidity management is considered vital for the business survival. It is essential for the firms to take care of their liquidity because without managing liquidity they can fail to make profits. Rehman and Anjum (2013) explored the impact of WCM on profitability and reported that WCM and liquidity are positively associated to each other but WCM negatively impacts profitability. Similar results were presented by Arshad and Gondal (2013).

Liquidity management has two dimensions i.e. time needed for converting current assets into liquid assets and certainty of price realized (Bhunia & Brahma, 2011). Liquidity management is more important for the small size firms because usually they face more liquidity problems (Abuzayed, 2012). As they have lesser finance available, they must hold liquid assets to operate their daily transactions and to save them in emergency. Comparatively, Moss and Stine (1993) argued that large firms can easily get finance from money and capital market because they enjoy financial economies, so, they can hold fewer liquid assets with them. To manage firms, we must go for a balance between profitability and liquidity management (Smith, 1980; Joshi, 1995; Deloof, 2003). The firms having more liquid assets will face low risks as they will have resources available to pay short term debts in emergency situations. But the firms having no cash or liquid asset; will face more risks (Bolek, 2013). Different researchers proved that if liquidity is not managed firms will face negative profitability and firm's value. Considering CCC as a proxy for liquidity, they reported that liquidity management is

negatively and significantly associated with operating performance and firm's value (Wang, 2002; Afza & Nazir, 2007; Raheman et al., 2010; Mansoori & Muhammad, 2012). Based on these researches we developed following hypothesis:

*H1*: Liquidity management significantly impacts firm's operating performance in the non-financial sector.

*H2*: Liquidity management significantly impacts firm's value in the non-financial sector.

Many researches proved that for different sectors the relationship of liquidity management with operating performance and firm value is different. Some revealed positive relationship and some proved that negative relationship exists (Raheman et al., 2010; Mansoori & Muhammad, 2012). In order to test this contradiction, we hypothesized as:

*H3*: Liquidity management and its impact on firm's operating performance and value differ across industries in Pakistani non-financial sectors.

The main focus of current study is to explore that how liquidity management impacts firm's operating performance and its value in Pakistani non-financial sectors. Furthermore, to analyze the sector-wise differences in terms of aforementioned variables and also to analyze these differences between firms having high and low market value.

This study is beneficial for the management of the organizations as they are responsible for wealth maximization. They will take preventive measures to avoid liquidity risks. Policy makers will make future investment decisions by allocating sufficient budget to the current assets to avoid liquidity issues. The investors will decide whether investment in a particular company is beneficial or not. Financial analysts will confidently analyze firm's financial position and decision makers will find out the income generating opportunities for idle cash.

### **Research Methodology**

There are 439 non-financial firms listed in Karachi Stock Exchange (KSE) of Pakistan. These firms are categorized in 26 sectors. Only the listed firms possessing complete required data were included as sample and rest of the firms were excluded resulting in 118 firms as a final sample. For analysis purpose, firms were categorized into 7 sectors on the basis of similar characteristics. The data was collected for ten years i.e. 2004-2013. The firm's financial data was collected from official websites of firms and also from annual reports. For collecting data about market prices, KSE's daily quotations were used. Mainly, financial statements were used for collecting data. The detail of firms in sectors is given in table 1.

Table 1  
*Number of Sample Firms in non-financial sectors*

Sr. No	Sectors	No. of firms
1	Energy Sector	17
2	Chemicals and Pharmaceuticals	15
3	Engineering Sector	22
4	Electronics and General Industries	21
5	Food and Beverages	18
6	Personal goods (Textile)	17
7	Miscellaneous	08
8	Total	118

Source: Website of Karachi Stock Exchange

This study contains three variables i.e. liquidity management, operating performance and firm value while firm size is taken as control variable. The proxies and measurement to calculate these variables are as follows:

Table 2

Variables	Proxies	Abbreviation	Measurement	Reference
<b>Liquidity Management</b>	Cash Conversion Cycle	CCC	ICP + RCP – PDP	(Wang, 2002)
	Inventory Conversion Period	ICP	Inventory/ (COGS/365)	-
	Receivables Conversion Period	RCP	Account Receivables/ (Sales/365)	-
	Payable Deferral Period	PDP	Account Payable/ (Cost of Goods Sold/365)	-
<b>Operating Performance</b>	Returns on Assets	ROA	EBIT/Total Asset	(Wang, 2002)
			(Book value of total debt + Market value of equity)/ Book value of total asset	(Nazir & Afza, 2009)
<b>Firm Value</b>	Tobin's q	Q		(Wang, 2002)
<b>Size</b>	Sales	Sales	Natural Log of Sales	(Wang, 2002)

Pearson Correlation alongwith Regression analysis is used for investigating the relationship of liquidity management with both variables. We have analyzed the correlation between (1) liquidity management and operating performance, and (2) liquidity management and firm value and then

applied the regression analysis. Firms are classified in two categories on the basis of market value measured by Tobin's q using the cutoff point 1, i.e. Tobin's  $q > 1$  (firms with high investment opportunities and high growth potential) and  $q \leq 1$  (firms with low investment opportunities and low growth potential) and comparative analysis is made by using t-statistics. Panel data methodology is used for this purpose. The fixed effect model has been applied based on Hausman test and likelihood ratio.

Following models are used to determine the association of liquidity management with operating performance:

$$ROA = \beta_0 + \beta_1 (CCC) + \mu$$

$$ROA = \beta_0 + \beta_1 (CCC) + \beta_2 (Size) + \mu$$

To determine the impact of liquidity management on firm's value, following models are used:

$$\text{Tobin's } Q = \beta_0 + \beta_1 (CCC) + \mu$$

$$\text{Tobin's } Q = \beta_0 + \beta_1 (CCC) + \beta_2 (Size) + \mu$$

Where ROA=Return on Assets; CCC=Cash Conversion Cycle; Size=Size of the firm; Tobin's Q=Firm's Value;  $\beta_0$ =Intercept;  $\beta_1$ =Coefficient of CCC;  $\beta_2$ =Coefficient of Size;  $\mu$ =Error term.

## Results and Discussion

The descriptive analysis, correlation analysis and regression results are included in this section. The results of descriptive analysis for all variables are in Table 3.

Table 3  
*Descriptive Statistics for All Variables*

Var.	Sectors	Total Sample	Energy	Chem. and Pharma	Engg	Electr. and Gen. Ind.	Food and Bever.	Personal goods and Textile	Misc.
	Mean	16.40	-18.20	5.30	0.10	7.70	16.60	72.10	59.40
	Std. Dev	82.90	72.40	65.60	92.60	74.80	74.30	54.00	117.10
	Max.	402.20	190.40	196.30	402.20	202.80	270.80	232.10	377.70
CCC (in days)	Min.	-376.60	-213.10	-193.50	-376.60	-208.10	-156.80	-125.60	-236.00
	Mean	0.13	0.15	0.18	0.13	0.10	0.14	0.12	0.09
	Std. Dev	0.14	0.21	0.13	0.10	0.10	0.18	0.09	0.16
	Max.	1.90	1.90	0.68	0.49	0.37	0.82	0.44	0.38
ROA (%age)	Min.	-0.88	-0.27	-0.16	-0.24	-0.17	-0.88	-0.10	-0.55

(Table Continued...)

	Mean	1.61	1.38	1.45	1.15	1.41	2.10	1.25	3.82
	Std. Dev	2.72	0.63	0.65	0.56	2.25	3.03	1.36	7.92
	Max.	43.37	3.90	3.75	3.58	25.38	34.30	10.95	43.37
Tobin's Q (ratio)	Min.	-1.29	0.53	0.49	0.00	0.33	0.19	-1.29	0.60
	Mean	0.16	0.18	0.16	0.15	0.15	0.15	0.15	0.14
	Std. Dev	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.02
	Max.	0.21	0.21	0.19	0.19	0.18	0.18	0.18	0.19
Size (natural log)	Min.	0.00	0.15	0.11	0.00	0.12	0.10	0.12	0.10

The descriptive statistics shows that the mean, standard deviation, minimum and maximum values for CCC, ROA, Tobin's Q and Size. The lowest CCC i.e. -18.2 is for the Energy Sector and the highest i.e. 72.1 is for Personal Goods and Textile Sector. Year-wise descriptive statistics are given in Appendix 1 also shows that energy sector has the lowest CCC throughout the period. It indicates that energy sector is able to convert their liquid assets into cash quickly and they delay their payments. The returns are also high for chemical and pharmaceutical sector, energy sector and food sector (0.18, 0.15 and 0.14 respectively) which shows that these sectors are also performing better. Both tables proved that lowest returns are for the miscellaneous sector and electronics and general industries (0.09 and 0.10 respectively). This shows that these sectors are unable to generate high profits. The lowest firm value is for engineering and textile sector. These results explain that delaying the cash conversion means the profits are forgone. Similarly, low CCC leads the energy sector towards high profits and for miscellaneous sector the CCC is high so profitability is low. Energy sector has the largest size so they have more opportunities to invest in profitable projects so they are generating high profits. Moreover, these results proved that substantial differences exist among sectors in terms of liquidity management, operating performance and firm value. So, we accept our third hypothesis.

To test the co alignment among all variables it is essential to find the association between these variables. Table 3.1 presents the correlation of CCC with ROA Tobin's Q for all sectors and on overall sample basis.

Table 3.1

*Correlation coefficient of CCC, ROA and Tobin's Q*

Sector's Name	CCC-ROA	P-value	CCC-Q	P-Value
Whole Sample	-0.07	0.020	-0.10	0.000
Energy	-0.17	0.030	-0.33	0.000
Chemical and Pharmaceutical	-0.01	0.890	0.06	0.450
Engineering	0.07	0.300	0.04	0.570
Electronics and Gen. Industries	-0.07	0.320	-0.15	0.030
Food and Beverages	0.09	0.230	-0.12	0.120
Personal goods and Textile	-0.24	0.000	-0.46	0.000
Miscellaneous	-0.12	0.300	-0.24	0.040

The results explain that CCC is negatively correlated to ROA for overall sample and for all

sectors except Engineering and Food and Beverages Sectors. ROA is the measure of operating performance so if the CCC increases it shows that firms take more time to collect cash so they are unable to invest in other projects. Due to the discussed fact, their operating performance decreases. The relationship is also significant for overall sample and also for some sectors. Furthermore, CCC and Tobin's Q are also negatively correlated for whole sample and also for all sectors except chemical and pharmaceutical sector and Engineering sector. By completing CCC quickly firms can enhance their value. The relationship is also significant for overall sample and also for most of the sectors.

Table 3.2 presents the results for liquidity management and operating performance for the whole sample and also for high ( $Q > 1$ ) and low ( $Q < 1$ ) market value firms. The results depicts that CCC has negative relation with ROA for whole sample and for low market value. Moreover, this relationship is significant in both cases. These results are in accordance with the studies of Tufail (2007), Wang (2002) and Raheman et al. (2010). Literature also proves that positive and significant relationship exists between profitability and size for the whole sample and for the high market value firms (Raheman & Nasr, 2007; Usama, 2012). It is logical because large firms has more investment opportunities so they are able to earn high profits. The firms with low market value have insignificant positive relationship between liquidity management and profitability. Based on these results, we conclude that liquidity management has significant negative impact on firm's operating performance in the non-financial sector so if firms collect early payments from the customer, keep inventory for less time and delay payments to suppliers it results in better corporate performance. Hence, we prove our first hypothesis.

Table 3.3 explains the regression results for liquidity management and firm value for the whole sample and also for the high and low market value firms. These results show that in case of high market value firms, there is insignificant positive relationship between Tobin's Q and CCC as previously studied by Lyrroudi and Lazaridis (2000). But, significant negative relationship exists between Tobin's Q and CCC for whole sample and also for low market value firms. The empirical evidence is provided by Nazir and Afza (2009). Moreover, the relationship between size and firm value is negative and significant for low market value firms. It seems logical because decreasing the CCC will lead a firm toward improving its value. Similar results were presented by other researchers (Eljelly, 2004; Ghosh & Maji, 2004) which clarifies that liquidity management has significant impact on firm value in the non-financial sector. Hence, we prove our second hypothesis.

Table 3.2

*Regression results for liquidity management and operating performance*

Dependent Variable: ROA												
Total Sample					Tobin's Q >1				Tobin's Q <1			
Without Size												
	Coeff.	Std. Error	T-Stat	P-Value	Coeff.	Std. Error	T-Stat	P-Value	Coeff.	Std. Error	T-Stat	P-Value
Intercept	0.13	0.00	38.08	0.00	0.15	0.00	36.40	0.00	0.12	0.01	20.47	0.00
CCC	-0.02	0.01	-2.19	0.03	0.00	0.00	0.49	0.62	-0.04	0.01	-4.64	0.00
	R Sqr	0.45	Adj. R Sqr	0.39	R Sqr	0.55	Adj. R Sqr	0.50	R Sqr	0.24	Adj. R Sqr	0.16
F-test	7.33		0.00		10.86		0.00		2.88		0.00	
With Size												
	Coeff.	Std. Error	T-Stat	P-Value	Coeff.	Std. Error	T-Stat	P-Value	Coeff.	Std. Error	T-Stat	P-Value
Intercept	-0.19	0.08	-2.48	0.01	-0.15	0.09	-1.74	0.08	-0.02	0.17	-0.14	0.89
CCC	-0.02	0.01	-2.39	0.02	0.00	0.00	0.21	0.83	-0.04	0.01	-4.71	0.00
Size	2.11	0.50	4.19	0.00	1.90	0.56	3.43	0.00	0.94	1.12	0.85	0.40
	R Sqr	0.46	Adj. R Sqr	0.40	R Sqr	0.56	Adj. R Sqr	0.51	R Sqr	0.24	Adj. R Sqr	0.16
F-test	7.53		0.00		11.05		0.00		2.83		0.00	

Table 3.3

*Regression results for liquidity management and firm value*

Dependent Variable: Tobin's Q												
Total Sample				Tobin's Q >1				Tobin's Q <1				
Without Size												
	Coeff.	Std. Error	T-Stat	P-Value	Coeff.	Std. Error	T-Stat	P-Value	Coeff.	Std. Error	T-Stat	P-Value
Intercept	1.66	0.06	27.30	0.00	2.02	0.09	23.87	0.00	1.07	0.07	15.42	0.00
CCC	-0.29	0.13	-2.21	0.03	0.00	0.04	0.09	0.93	-0.29	0.10	-2.75	0.01
	R Sqr	0.54	Adj. R Sqr	0.49	R Sqr	0.56	Adj. R Sqr	0.51	R Sqr	0.26	Adj. R Sqr	0.18
F-test	10.47		0.00		11.42		0.00		3.22		0.00	
With Size												
	Coeff.	Std. Error	T-Stat	P-Value	Coeff.	Std. Error	T-Statistics	P-Value	Coeff.	Std. Error	T-Stat	P-Value
Intercept	3.19	1.36	2.34	0.02	0.32	1.53	0.21	0.84	12.99	1.93	6.72	0.00
CCC	-0.29	0.13	-2.16	0.03	0.00	0.04	0.01	0.99	-0.17	0.10	-1.62	0.11
Size	-9.92	8.83	-1.12	0.26	10.81	9.70	1.11	0.27	-79.56	12.89	-6.17	0.00
	R Sqr	0.54	Adj. R Sqr	0.49	R Sqr	0.56	Adj. R Sqr	0.51	R Sqr	0.32	Adj. R Sqr	0.25
F-test	10.39		0.00		11.28		0.00		4.20		0.00	

In order to compare the results, data is divided into two groups on the basis of high and low market value of the firms. For the first group Tobin's Q is greater than 1 and the second group has Tobin's Q less than 1. For both groups average ROA, CCC, Tobin's Q and size has been calculated and t-statistics results are obtained as in Table 3.4.

Table 3.4

*T-statistics for High and Low Market Value Firms*

Variables	Groups	Mean	Std. Deviation	P-value	T-value
ROA	High Market Value(Q>1)	0.15	0.01		
	Low Market Value (Q<1)	0.11	0.02	0.00	6.79
CCC	High Market Value(Q>1)	5.42	4.47		
	Low Market Value (Q<1)	28.80	9.04	0.00	-7.34
Tobin's Q	High Market Value(Q>1)	2.03	0.23		
	Low Market Value (Q<1)	0.99	0.14	0.00	12.25
Size	High Market Value(Q>1)	15.74	0.50		
	Low Market Value (Q<1)	15.02	0.39	0.00	3.57

The results indicate that the mean of ROA is greater for high market value firms and their standard deviation low. The P-value indicates that significant differences exist between high and low market value firms in terms of profitability. These results clarify that firms having  $Q>1$  will have higher profits. Similarly, the mean and standard deviation of CCC for these firms is significantly lower as compared to the firms having  $Q\leq 1$ . It shows that high market value firms will have shorter CCC as they collect cash quickly. The mean of Tobin's Q for the firms with  $Q>1$  is significantly higher as compare to those firms having  $Q\leq 1$ . The mean and standard deviation of size are higher for the firms having  $Q>1$ . It shows that the firms who have higher market value are larger as compared to the low market value firms. T-values for size also show that significant difference between two groups.

### **Conclusion**

The results of the study found that liquidity management, operating performance and firm value differ across industries in Pakistani non-financial sectors. From descriptive statistics it is found that energy sector has low CCC, high returns and firm value as compared to other sectors.

The results also conclude that there is significant negative relationship of CCC with ROA and Tobin's Q. Therefore, firms need to manage liquidity to improve profitability and value. If firms decrease their CCC their profitability and value can be enhanced. Size has positive relationship with operating performance and firm value. Furthermore it is also found that significant difference exists for the high and low market value firms in terms of size. Large firms have more opportunities and resources to improve profitability and value so firms must try to increase their size.

Our sample can be one of the limitations as only 118 firms are selected because of non-availability of data. The time period can be extended from ten years to get some new insights. A comparative study can be done by comparing financial and non-financial firms of different of Asian countries or non Asian countries. Different proxies can also be used in future study. Some other variables like capital structure, asset turnover and solvency ratios can be added in the model to enhance the accuracy of the relationship.

Table 3.5  
*Year-wise Statistics Analysis of All Variables*

Var	Years	Sample	Energy	Chem and Pharm.	Engg	Elect and Gen ind	Food and Bever.	Textile	Misc.
CCC	2004	11.00	-24.30	4.00	-3.29	10.10	-1.48	61.30	62.10
	2005	16.60	-25.60	-1.98	5.40	8.01	5.60	84.60	74.40
	2006	16.50	-28.80	1.54	12.20	8.31	23.30	68.40	48.50
	2007	15.00	-21.40	4.29	1.82	13.30	11.40	70.00	44.10
	2008	22.60	-32.90	18.90	10.20	14.60	25.00	80.60	74.70
	2009	18.30	-15.00	3.96	7.51	16.90	13.30	63.30	64.20
	2010	16.20	-3.21	10.60	-3.97	-1.88	11.60	71.90	62.10
	2011	25.10	0.25	18.10	-6.38	11.10	34.70	74.80	87.40
	2012	11.50	-7.74	0.90	-16.40	-0.06	14.00	71.10	47.50
	2013	11.20	-22.80	-7.32	-6.39	-3.11	28.90	74.80	28.60
ROA	2004	0.14	0.17	0.16	0.14	0.14	0.14	0.10	0.06
	2005	0.14	0.16	0.15	0.15	0.14	0.17	0.09	0.04
	2006	0.15	0.17	0.15	0.16	0.13	0.17	0.11	0.10
	2007	0.12	0.15	0.17	0.14	0.09	0.13	0.09	0.12
	2008	0.13	0.27	0.15	0.12	0.04	0.13	0.10	0.16
	2009	0.12	0.13	0.16	0.11	0.07	0.19	0.10	0.12
	2010	0.12	0.12	0.17	0.12	0.04	0.18	0.15	0.08
	2011	0.13	0.11	0.26	0.11	0.09	0.15	0.16	0.06
	2012	0.11	0.12	0.17	0.10	0.12	0.09	0.10	0.08
	2013	0.14	0.11	0.21	0.13	0.15	0.09	0.16	0.10
Tobin Q	2004	1.44	1.44	1.42	1.06	1.45	1.70	1.24	2.36
	2005	1.49	1.47	1.48	1.28	1.39	1.72	1.29	2.34
	2006	1.58	1.55	1.63	1.24	1.35	1.89	1.61	2.23
	2007	1.60	1.51	1.67	1.39	1.32	2.10	1.33	2.40
	2008	1.62	1.38	1.62	1.42	1.19	2.15	1.49	2.94
	2009	1.39	1.19	1.31	0.98	0.94	1.68	1.00	4.51
	2010	1.53	1.25	1.23	1.05	0.91	1.50	1.06	6.69
	2011	1.97	1.28	1.25	0.94	2.02	3.50	1.04	6.04
	2012	1.62	1.30	1.24	0.97	1.52	2.03	1.10	5.20
	2013	1.85	1.47	1.67	1.18	1.98	2.75	1.37	3.48
Size	2004	0.15	0.17	0.15	0.14	0.14	0.14	0.14	0.14
	2005	0.15	0.17	0.15	0.15	0.15	0.14	0.14	0.14
	2006	0.15	0.17	0.15	0.15	0.15	0.15	0.15	0.14
	2007	0.15	0.18	0.15	0.15	0.15	0.15	0.15	0.14
	2008	0.15	0.18	0.15	0.15	0.15	0.15	0.15	0.14
	2009	0.16	0.18	0.16	0.15	0.15	0.15	0.15	0.15
	2010	0.16	0.18	0.16	0.16	0.15	0.15	0.15	0.15
	2011	0.16	0.18	0.16	0.16	0.15	0.15	0.16	0.15
	2012	0.16	0.18	0.16	0.16	0.16	0.15	0.15	0.15
	2013	0.16	0.18	0.16	0.16	0.16	0.15	0.16	0.15

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# A CRITICAL ASSESSMENT OF AMARTYA SEN'S COMPARATIVE MODEL OF GLOBAL CAPITALIST ECONOMIC JUSTICE

Asad Shahzad<sup>1</sup>

## Abstract

*This paper investigates Amartya Kuman Sen's comparative model of justice and assesses the prospects for the provision of distributive/economic justice at the global level. Sen proposes his non-transcendental view of justice in the context of his proposed 'global democracy'. This work argues that Sen's model of global non-contractarian distributive/economic justice does not seem to have chances of success in a world divided into various nation-states. Sen does not endorse the possibility or desirability of a world capitalist state, and renounces the idea of replication of nation-state mechanisms and apparatuses at the global level.*

**Keywords:** Injustice, Comparative Justice, Human Rights, Democracy.

**JEL Classification:** G010

## Introduction

The UNO and the national leaders of various nation-states are well-aware that across the globe, almost three billion people are deprived of at least one basic human need: lack of access to food, drinking water, shelter, basic health services, not to mention education—and dignity (Hulme, 2016). In 'our' world that is rich in resources and technology, "more than 800 million people go hungry each night, 19,000 children die each day from easily preventable health problems and more than 58 million primary school-age children do not attend school (Hulme, 2015: 1). One avoidable child death, caused by preventable diseases, is taking place every five seconds all day every day (Hulme, 2016). Most of these deaths are caused by diseases such as diarrhea, pneumonia, or malaria (Singer, 2016). With advanced technology and organization, contemporary agricultural systems produce enough food to feed all 7 billion people on the planet but some 800 million people went to sleep hungry last night, and one billion experience the indignity of having to defecate in the open (Hulme, 2016). A 10 percent reduction combined with a 1 percent reduction in military spending respectively

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in the developing and the developed world “would be sufficient not only to feed all those currently going without enough food, but would also make a significant contribution to ensuring that everyone has a basic education” (Brock, 2009: 92). According to MPI (Multidimensional Poverty Index), 2014 that covered “108 countries, which are home to 78 percent of the world’s population...1.6 billion people are identified as multi-dimensionally poor” (Hulme, 2015: 140). Data collected by various global agencies on poverty is not free of loopholes. Shelterless people and populations such as prisoners, soldiers, as well as students and workers who live in dormitories are among the global poor, but are not included in counting (Milanovic, 2016). There are almost 250 million homeless people who are often missed in data collection sample frames (Sumner, 2016: 43). The above-mentioned facts offer some glimpses of the state of global justice.

In the absence of a world government the provision of distributive justice appears to be no one’s responsibility. Amartya Sen’s comparative model of justice is one of the most significant approaches to the problem of global economic justice. Sen draws on contractarian approaches such as that of John Rawls and comparative approaches such as that of Adam Smith to formulate his own theory of justice. Sen proposes a capability-oriented framework of justice integrated with his theory of human rights that demands ‘global democracy’ for its functioning. However, Sen renounces the idea of establishing a world capitalist democratic state to replicate the mechanisms and instruments of the nation-state at the world level.

### **Amartya Sen’s Comparative Theory of Justice**

#### *Justice in the Context of the Nation State*

Sen classifies diverse approaches to distributive justice in two broad categories: ‘social contract’/contractarian (or transcendental) approach concerned basically with identifying social arrangements that are perfectly just, and the ‘comparative’ approach that mainly accentuates the removal of injustices (Sen, 2009). Amartya Sen’s comparative view of justice draws on the works of Rawls in the contractarian approach and on the works of Adam Smith as well as Kenneth Arrow in what Sen calls comparative approach to justice. A main element that is common in both these approaches is that they are rooted in the Enlightenment tradition (Sen, 2009). It is Sen’s contention that John Rawls’s magnum opus *A Theory of Justice* provides us with the most thorough articulation of the transcendental approach to justice. However, Sen views Rawls’s theory of justice as lacking in not being directly concerned with actual lives of people. He dubs Rawls’s approach as ‘transcendental institutionalism’ whereas Sen’s “concern is more practical, guided by realities of people’s lives and capabilities” (Chatterjee, 2011:989). Whereas the contractarian approaches, such as that of Rawls’s, focus on perfect institutional arrangements, Sen’s theory emphasizes the need to identify and remove cases of injustice, comprehensible by public deliberation among reasonable people (Sen, 2012). However, in neglecting the need for an understanding of a perfect view of justice Sen appears to underestimate the fact that justice is the other side of injustice, and therefore, injustice cannot be

defined as independent of justice. Sen contends that consensus-building on the idea of perfect justice is improbable even among reasonable people whereas it is relatively far more probable for such people to agree on the cases of injustice.

Sen argues that clear cases of injustice need to be identified for the purpose of consensus-building “on the basis of public reasoning” (Sen, 2012). Sen argues that the identification of perfect justice is neither sufficient nor necessary because, for example, three persons are faced with three different choices, say, X, Y, and Z. Suppose that Z happens to be the best choice but it may be so that it is not available (Sen, 2012). The three persons may not have agreement on the primacy between X and Y. Thus, according to Sen, there is no use formulating Z (perfect institutions). What is needed is to choose between X and Y and to eradicate injustice on such ranking (Sen, 2012). Sen in his above example appears to be oblivious of the fact that injustice can only be defined with reference to Z whose existence is at least conceptually indispensable.

Sen’s line of reasoning appears to denote that if an elector has to make a choice between two contenders (both undesirable), then, to imagine the prospects of a third contender with better moral attributes is not necessary because the two accessible (but undesirable) contenders are considered satisfactory. It is by having the idea of the most desirable contender that an elector can reasonably decide as to which one of the two available contenders is more desirable. Thus, it seems that Sen’s conception of comparative justice is ambiguous because the significance of advancement of justice cannot be comprehended without having at least some level of comprehension of the idea of ‘ideal justice’ (Hinsch, 2011:372).

Sen formulates the idea of capabilities in lieu of Rawls’s primary social goods<sup>2</sup>. Sen (1999a) holds that heterogeneity of people is not given due consideration by the contractarian approaches. Sen problematizes the question of equal distribution. Sen proposes a framework for the development of a social minimum through his idea of the equality of ‘basic capabilities’ (Sen, 2008). Basic capabilities constitute a subset of all capabilities. Equality of basic capabilities implies a person being able to do certain basic things (Sen, 2008). Sen defines ‘basic capability’ as “the ability to satisfy certain elementary and crucially important functionings up to certain levels” (in Robeyns, 2013:417). Although the notion of capabilities incorporates “a very broad range of opportunities, basic capabilities refer to real opportunity to avoid poverty or to meet or exceed a threshold of well-being” (Crocker & Robeyns, 2010:69). In “analyzing social justice,” Sen contends, “there is a strong case for judging individual advantage in terms of the capabilities that a person has” (Sen, 1999a:87). The concept of capability can more broadly be grasped as consisting of the components of ability to do things and potentiality of being as one wishes; potentiality further implies endowments (Dubors & Rousseau, 2008). Endowments include physical capital such as land and durable equipment, financial

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<sup>2</sup> Primary social goods include liberty and opportunity, income and wealth, and the bases of self-respect.

capital such as savings, human capital such as education and health, and social capital such as stable relationships (Dubors & Rousseau, 2008). The presence or absence of 'social opportunities' also plays a crucial role along with a person's ability and potentiality. Thus, individual capacity, endowments, and social opportunities are together given weightage in order to assess people's capability and development policies based on capability (Dubors & Rousseau, 2008:426).

### *Sen's View of Relationship between Justice and Human Rights*

Sen's endorsement of human rights is one of the areas where his comparative approach is analogous to the social contract approach. Three significant and relevant points found in Sen's (2004) outline of human rights are as follows:

1. An appreciation of obligations engendered by human rights demands
2. Avenues and actions essential for the advancement of human rights, for instance, popular agitation
3. Emphasizing the incorporation of economic and social rights along with liberal rights among human rights (Sen, 2004:318-9).

Sen (2004) argues that both liberal rights such as freedom of thought and expression, as well as social and economic rights such as right to education and healthcare are to be understood as obligatory, and, should, therefore, be reflected in the constitution. Sen (2004) holds the view that legislation, though significant, but is not the only path for the promotion of rights. He enumerates three 'routes' playing substantial role in the enforcement of human rights, namely, public recognition, active agitation (including the monitoring of violations) as well as legislation (Sen, 2004). Public recognition and active agitation are imperfect obligations in the scheme of human rights proposed by Sen. These two obligations are parasitic on the tools of public reasoning, appraisal, and social advocacy. Sen cherishes the hope that agitation and recognition routes would ultimately lead to legislation in the context of nation-state. However, the human rights, whether liberal or economic and social, cannot be constitutionalized at the global level without a world state.

Sen's advocacy of the legitimacy of social and economic rights depicts Sen's renouncement of contemporarily prevailing neoliberal/libertarian approach to justice. Sen (2004; 2009) understands that the nonexistence of institutional framework for the economic and social rights does not imply that these rights are unenforceable but rather their importance signifies that they ought to be constitutionalized. Sen thus contends that the "institutional expansion or reform can be a part of the obligations generated by the recognition of these rights" (Sen, 2004:320). However, the constitutionalization of economic and social rights remains parasitic on the Non-Governmental Organizations, mass media, and the agitation by the citizens of a nation-state.

### *Structure of the Capitalist State*

Justice, whether it is distributive, retributive, or civil is established through the institutions and apparatuses of the state. An essential attribute of the state is that it possesses the monopoly of legitimate coercion/violence within its territory (Weber, 1948). Its legitimacy is established as a result of its acceptance by the significant groups in the given society within the given territory. It has the ability to collect taxes (Schumpeter, 1954). It regulates “societal activities by means of a legal apparatus, and government activities by means of a constitution” (Dunleavy, 2007). Weber specifies the functions of the capitalist state: “the establishment of law (legislature), the protection of personal security and public order (police), the maintenance of established law (judiciary), the pursuit of hygienic, pedagogic, social policy, and other cultural interests (the various branches of administration), finally of course also organized external defense (military administration)” (in Anter, 2014:23). Goran Therborn (1978) identifies four essential functions of the national state that it performs through four corresponding apparatuses. Four principal functions of the state are: (i) coercive defense, (ii) political governance (by supreme rule-making), (iii) administrative management, and (iv) judicial regulation of a given social formulation; corresponding to four principal functions, four types of apparatus can be distinguished by: (i) the repressive apparatus (police, military etc.), (ii) the governmental apparatus (i.e. the rule-making legislative and executive bodies, both central & local), (iii) the administration, (iv) the judiciary. These apparatuses and mechanisms of the state mentioned above do not exist beyond the nation state. Sen does not advocate the replication of these mechanisms and apparatuses in the form of a world state or global government for the provision of global justice.

### *Critical Appraisal of Sen's Conception of Global Distributive Justice*

Sen is convinced that “it is really impossible to have a global state” (Sen, 2009:408). Thus, contrary to the contractarian (or the ‘social contract’) approach Sen disapproves the idea of requirement of a world state for providing justice at the global level. Sen integrates his view of human rights with his conception of a ‘global democracy’, which provides grounds to his idea of global distributive justice. Whereas Sen’s view of democracy is integrated with a nation-state at the local level his conception of ‘global democracy’ is independent of a world government. Sen’s ‘global democracy’ does not require ‘global elections’ and ‘world democratic government’. Sen’s ‘global democracy’ is global in that it “is seen in terms of public reasoning” across the globe (Sen, 2009:408). Thus, global democracy does not require coercive institutions and state policies at the global level. Sen is hopeful that articulations and exchanges across borders in the form of “plurality of sources enriches the reach of global democracy” (Sen, 2009:408). Sen’s conception of global justice through ‘global democracy’ implies the pursuit of ‘global democracy’ as an instrument for the promotion and enforcement of human rights in all nation-states.

For Sen (2009), democracy, when conceived of in the context of nation-state, is government

by public discussion whereas ‘global democracy’ is supposed to emerge as discussion across borders at a planetary scale. It is Sen’s contention that justice cannot be provided without the matrix of democracy, for which public reasoning is a basic tool (Sen, 2009). Sen holds that in “today’s world, global dialogue is vitally important for global justice” (Sen, 2009:151). Sen also regrets the “neglect of the global roots of public reasoning” (Sen, 2003:33). Though a world state is a chimera for Sen, he is hopeful about the fruitfulness of ‘borderless public reasoning’ for the provision of global distributive justice. In the face of absence of a world state, Sen proposes the tools of free news-reporting, uncensored public criticism, a free system of news distribution, and open pluralist discussion for the formation of a ‘global democracy’ (Sen, 2009).

Sen tends to rely exaggeratedly on the media and news commentary with little overt recognition that the media spectators are subjected to “a hyperreality of communication and of meaning, more real than the real. Hence the real is abolished” (Baudrillard, 2007:99). The three constituents of the sign, i.e., signifier, referent, and signified have been disrupted in that the media spectacle and reality have both been subjected to implosion. Thus, referent is not signified by the sign any more. Rather than becoming more rational and autonomous the public opinion gets muddled and stupefied by the mass media (Chomsky, 2014). Taylor and Harris (2008) argue that in the “mass-media capitalism of the contemporary mediascape, our conception of an underlying reality behind media representations has become increasingly distorted. This has created a semi-autonomous realm of pseudo-events and the hyperreal” (Taylor & Harris, 2008:45). “Television talk shows,” Abt and Mustazza argue, “represent a new pornography... Pornography generally involves turning people into objects and making public what is private” (Abt & Mustazza, 1997:21). In this scenario, it is ambiguous as to how the mediatized public reasoning (recommended by Sen) would lead to the promotion even of equality of basic capabilities across the world, in a world where the mechanisms and apparatuses of the state that exist at the national level do not exist in the global context.

### *Relationship between Sen’s View of Human Rights and Global Distributive Justice*

Sen advocates the idea of promoting basic rights for everyone throughout the world regardless of national boundaries (Sen, 2004). Rather than recommending the establishment of a world capitalist state Sen (2004) proposes three avenues for the promotion of human rights: agitation, recognition, and legislation (mentioned above). In order to remove injustices across borders Sen (2009) proposes, in the scenario of UDHR 1948, that people living in different countries should identify each other as human beings and not as citizens of various nation-states. “Nationalism is the constitutive element, or the organizing principle, of modernity” (Greenfeld, 2003:4); it appears that Sen is virtually oblivious of this fact. Moreover, Sen virtually disregards the fact that the human rights specified in the UDHR were not embraced in the backdrop of a process of reasoned global deliberation process that Sen recommends. Moreover, the UDHR is not the outcome of active agitation, or public recognition, nor does it reflect universal democratic legislation. Moreover, there appear to be no signs of the route of active agitation for the materialization of the rights embodied in

the UDHR. A legislative frame analogous to national legislatures does not exist at the global level. Sen also does not take account of the issue that a public sphere does not so far exist even at the level of the European Union (Habermas, 1998). Thus, a global public sphere has taken form neither across the planet nor within the transnational/regional boundaries. It is Habermas's (1993) contention that the public sphere has been structurally transformed even at the national level.

Sen's notion of universality of rights is grounded on his mistaken assertion about 'universal values' (Sen, 2009; Sen, 1999b) which implies the ahistoricity of capitalist values. Michel Foucault (1994), for instance, contends that 'human' is not an ahistorical creature; Marxists renounce the legitimacy of natural right to own property; Jeremy Bentham, discredits the validity of rights as mere nonsense. Thus, the idea of providing global justice through 'global democracy' seems to stand on delicate theoretical grounds. Moreover, in the actual world, global military interventionism, triggered on behalf of American interests, operates with no-human-rights-and-democracy mask (Zizek, 2017).

### *Critical Assessment of Sen's Proposed Global Solution*

- Sen's Renunciation of a World Capitalist State

Sen (2009) dismisses the notion of the possibility of a world capitalist state. Sen compares Adam Smith's view of an 'impartial spectator'<sup>3</sup> with Rawls's notion of 'original position', and prefers the former over the latter for establishing a framework for removing specific injustices. Sen holds that Adam Smith's 'impartial spectator' offers the prospects of open impartiality whereas Rawls's 'original position' presents closed impartiality (Sen, 2009). Sen (2009) integrates the thought experiment of the 'impartial spectator' with his notion of universal human rights. It may be noted here that Smith himself did not invoke the 'impartial spectator' tool for the promotion of distributive justice through the universalization of human rights. In Smithian political economy the promotion of economic and social rights depends on Smith's famous (or infamous) 'invisible hand'<sup>4</sup> argument. Whether it is the 'invisible hand' or the night-watchman state (derived from the works of Smith), the direct promotion of social and economic rights is not their agenda. Sen's (1999; 2009) views depict the desirability of nation-states. It may be noted that desirability of the nation-states tends to rule out the establishment of a world state. A key point is that Sen nowhere advocates the replication of the nation-state's apparatuses and mechanisms at the global level whereas he deems them necessary for the provision of distributive justice at the national level.

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<sup>3</sup> "The impartial spectator is a person outside me who looks at me in order to evaluate my behavior...It is our capacity for sympathetic insight into others that allows us to take up the role of impartial spectator towards ourselves" (McLean, 2006:55).

<sup>4</sup> Adam Smith contends that the rich "are led by an invisible hand to make nearly the same distribution of the necessities of life, which would have been made, had the earth been divided into equal portions among all its inhabitants" (in McLean, 2006:52-3).

Sen (2009) contends that the contractarian approach to justice necessarily depends on the existence of a sovereign state for providing justice. What Sen does not appear to realize is that the nation-states that legislate because of the pressures of agitation do not get desovereignized. In the same way agitating groups are not transformed into sovereign bodies. It is Sen's contention that selected cases of global distributive injustice can be eliminated by discussion without government. This conceptualization of discussion without coercive and distributive institutions of government is a vision that tends to disregard the significance of power. Max Weber problematized the nexus between democracy and capitalism and does not see necessary relationship between them (Gerth & Mills, 1948:71). In a world where the global corporation has encroached upon citizens' right to elect desired political candidates the probability of the conversion of Sen's vision into the legislation of social and economic rights appears to be unrealistic. An analysis of late capitalism (since the 1970s) reveals the internal tension between democracy and capitalism (Streeck, 2014). The 'marriage' that took place between democracy and capitalism after the World War II is subjected to gradual dissolution (Streeck, 2014). This marriage, paradoxically, arranged by force, did not survive the implosion of Soviet socialism. It was only for this short-lived interregnum, i.e., the Cold War era, that democracy and capitalism were correlated. In this interregnum the United States and the European states promoted democracy at the national level. No connection between democracy and capitalism is seen before the Cold War era; and that momentary strategic connection has been subjected to continual diminution ever since. The transitory strategic advancement of democratic process was not targeting to provide justice but to indirectly overthrow the Soviet socialist regime.

Thus, it was a part of politics as usual that the United States and other Western democracies, during the Cold War era, did not show reluctance to support authoritarian antisocialist governments (Sen, 1999a). Contemporarily, analogous backing is offered to the governments that show willingness to embrace the agenda of privatization etc. provided by neoliberalism, with agreement on relatively small government. In addition, the 'small' state seeks to win the allegiance of common voters while it works to the benefit of the big businesses. Sen's advocacy of the removal of selected cases of distributive injustices gives the impression of being ideal in that it relies on the defective premise of the presence of a global public and the existence of roots of democracy at the global level. Syriza in Greece, for example, acted contrary to the wishes of the citizens in spite of its anti-neoliberal stance because it was forced to act in consonance with the pressures of the troika, and thus surrendered to the austerity measures finally. "Nation-states built over centuries find that they are too small to impose and enforce rules on today's globalized patrimonial capitalism" (Piketty, 2014:522). The power of the nation-state vis-a-vis global capital has been eclipsed with the result that the state has gone out of the hands of the people it has to give priority to the interests of the multinational firm over the interests of its citizens. The massive power of the global corporation is "leading our democracy towards becoming something of an empty shell...Many corporations have become not just mighty pressures on, but major insider participants in the political process" (Crouch, 2011:ix). Thus, Sen's three routes do not appear to have the potential to effectively work because the prospects for the emergence of a global public sphere and global public reasoning are not auspicious.

## Concluding Remarks

Sen's non-transcendental comparative view of justice essentially seeks to promote justice by eradicating clear cases of injustice without the context of a world capitalist state. Sen seeks to promote justice through his proposed agitation, recognition, and constitutionalization of rights without accepting the need for a world constitution backed by the mechanisms and apparatuses of the framework of a world state. He envisions 'global democracy' anchored in the idea of reasoned public debate at the global level without a world state. Sen's framework of justice ultimately depends on the nation-states for the provision of justice and is oblivious of the well-documented post-Soviet degeneration of democracy further triggered by the upswing of the global firm in the framework of neoliberal agenda. A basic contradiction is that Sen disapproves the replication of nation-state's apparatuses and mechanisms at the global level while he finds their existence to be necessary for the provision of justice at the national level.

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# A DYNAMIC INVESTIGATION OF THE MACROECONOMIC DETERMINANTS OF UNEMPLOYMENT IN PAKISTAN

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## Abstract

*This research is aiming to explore the incidence of macroeconomic variables on the variation in rate of unemployment in the economy of Pakistan through the estimation of dynamic model. Keeping unemployment rate within lowest possible levels is a challenging task for the economists and policy makers. The negative consequences of higher unemployment rates are not only confined to the economic consequences, rather it has direct linkages with numerous other socio-economic factors as well. In order to estimate the extent of long run relationship among the variables we used Johansen co integration test and Vector Error Correction technique is used to explore the short run behavior of the variables. The empirical findings suggest the prevalence of Okun's law and Phillips curve in the short run for the economy of Pakistan. Another important contribution of this study is associated with the magnitude of energy supply and economic uncertainty, and it suggests that the impact is larger for unemployment in the short run while population has large effect in magnitude in the long run.*

**Keywords:** Unemployment, Okun's Law, Phillips Curve, Co-integration, Vector Error Correction.

**JEL Classification:** E340

## Introduction

This study is aiming to explore the behavior of important macroeconomic factors determining the unemployment trends in the economy of Pakistan. On the macroeconomic front the performance of the economy of Pakistan is relatively sluggish for the last few years. There are several factors behind this stagnant economic growth such as the contribution of Total Factor Productivity (TFP) is reported to be around only 18%, lack of capital accumulation due to persistent low savings rates, no innovation and structural change and stagnant export. Persistent high unemployment of human resources in Pakistan not only hinders the utilization of economic potential of available resources but it also has negative consequences for the socio-economic fabrics of the

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society. As far as the theoretical foundation of this research is concerned, we are using the same line of reasoning extended by Kabaklarli, Hazel and Buluş (2011), they reported the existence of inverse relationship between economic growth, gross fixed investment and unemployment rate.

The higher unemployment rate in Pakistan is attributed with higher population growth rate and ever growing supply of labor force. The population of Pakistan, for the year 2000-01, was around 142.86 million and increased to 168.99 million in year 2008-09 and in 2014-15 it was reported to be around 189.19 million. The highest unemployment rate was observed in the year 2003-4 and reported to be around 8.27%. The unemployment rate declined slowly and remained steady around the average of 5 % annually. The labor force observed a growth of 41.38 million in 2000-01 to 61.04 million by the year 2014-15. The crude activity rate also observed an increasing tendency, for the year 2000-01 it was around 28.55% and by the year 2014-15, it was observed to be around 32.30%. For further details, see Table 1.

Table 1

*Trends of Population, Crude Activity Rate, Size of Labor Force, and Unemployment Rate in Pakistan*

Year	Population (Million)	Crude Activity Rate (%)	Labor Force (Million)	Unemployment Rate (%)
2000-01	142.86	28.55	41.38	7.82
2001-02	145.96	28.97	43.21	8.26
2002-03	149.03	29.23	44.12	8.27
2003-04	150.47	30.41	45.76	7.69
2004-05	153.96	30.41	46.82	7.68
2005-06	156.77	32.22	50.50	6.19
2006-07	161.98	31.82	51.55	5.33
2007-08	165.45	32.17	53.22	5.20
2008-09	168.99	32.81	55.91	5.45
2009-10	172.57	32.98	56.92	5.55
2010-11	176.20	32.83	57.84	5.94
2011-12	180.71	32.83	59.33	5.95
2012-13	183.57	32.88	60.34	6.23
2013-14	186.19	32.28	60.09	5.94
2014-15	189.19	32.30	61.04	5.93

Source: Economic Survey of Pakistan (Various Editions), Labor Force Survey (PBS).

The analysis of age specific participation rates and unemployment of labor force, keeping the distinction of rural urban divide, suggests various interesting trends. For instance, Table 2 is depicting that unemployment is not an area specific phenomenon in Pakistan. One distinguishing feature is the higher rate of participation of youth belonging to the lowest quintile of age group i.e. 10-14 years, in the rural as compared to the urban part of Pakistan. The youth of Pakistan is more prone to the unemployment and one important factor behind such phenomenon is the lower human development and lack of technical abilities among the youth along with sluggish trends in employment generation activities.

Table 2

*Labor force participation rates and unemployment rates  
(Age Specific 2014-15)*

Age Group (years)	Labor force Participation Rates			Unemployment Rates		
	National	Rural	Urban	National	Rural	Urban
10--14	9.58	12.6	3.78	9.98	7.97	22.15
15--19	33.5	39.63	22.95	10.11	8.23	15.69
20--24	52.63	56.93	45.61	11	9.48	14.09
25--29	58.56	61.83	53.07	6.09	5.21	7.81
30--34	60.14	64.05	53.57	3.52	3.17	4.21
35--39	62.62	67.23	54.93	1.92	1.77	2.22
40--44	64.63	68.6	57.66	1.97	1.84	2.23
45--49	65.98	71.33	57.13	1.75	1.55	2.17
50--54	65.34	70.27	57.58	3.63	3.1	4.67
55--59	63.77	67.32	57.72	5.78	5.6	6.15
60--64	51.15	56.98	39.6	9.01	6.2	16.97
64 and above	27.56	30.28	21.67	11.12	4.2	32.09

Source: Labor Force Survey (PBS) 2014-15

As far as the creation of new employment opportunities in Pakistan are concerned, services and industrial sectors are playing the leading role. For the last few years the contribution of industrial sector remained sluggish in the creation of new employment opportunities mainly due to lack of capital accumulation in the sector. The labor market statistics suggest that this sector holds a share of 21.5% in the total employment. Additionally, political instability and economic uncertainty has severely affected the economy. The domestic and foreign investors remained reluctant to realize their investment plans in the country, mainly due to the political and economic uncertainty, and the sluggish trends of domestic and foreign capital formation resulted in unemployment and underemployment of human resources. It is also observed that exchange rate sharply increased from Rs. 68 to Rs. 100 since the year 2007, resulting in creation of additional pressure on foreign exchange reserve that further deteriorated the balance of payment. In fact, foreign exchange reserves were less than \$ 3 billion in

2013. All these factors contributed in the sluggish economic performance and higher rate of unemployment in Pakistan and this paper is aiming to explore the impact of these factors through estimation of dynamic model through sophisticated econometric techniques.

This paper is organized as:, section 2 provides a brief review of literature related to the unemployment and its determinants, section 3 is about theoretical framework used to develop a model expressing the relationship between important variables, section 4 is dedicated for econometric model and data sources, analysis of the estimated models and findings are discussed in section 5 and in section 6 we have presented the important policy implications and conclusion.

### **Review of Literature**

Unemployment and its determinants are among the most extensively discussed topics in the field of economics. Various economists, demographers, and sociologists have generously contributed a great deal of literature on this important issue. Most of the economists analyzed the issue of unemployment as a macroeconomic phenomenon and a considerable number of studies are focused to investigate the role of potential GDP, while few investigations remained concentrated on the linkages between current GDP and unemployment rate. Another important dimension of this issue is the output gap between potential and realized GDP, which has significant theoretical effect on unemployment. However, the empirical evidences suggest a varying trend in this regard. The negative relationship between the forecasted GDP and the rate of unemployment is also reported by Ball, Jalles, and Loungani (2014), and they endorsed the existence of Okun's law. While, Maqbool et al. (2013) and Marelli and Vakulenko (2014) also probed this relationship and suggested the prevalence of negative association between the aggregate economic performance and the rate of unemployment. While, Lal et al. (2010) suggested that there is no evidence in favor of Okun's law in most of the Asian countries due to sharp inflationary trends (for more details see Komalasari, 2014 & Eita & Ashipala, 2010). On the similar line of reasoning, Cheema and Atta (2014) suggested the existence of positive relationship between economic uncertainty, output gap, and unemployment.

A considerable number of studies have also explored the effect of geographical and social factors on unemployment. For instance, Msigwa and Kipesha (2013) suggested that education, geographical location, gender, skills and marital status are crucial determinants of unemployment in Tanzania. Another interesting contribution is extended by Darma and Arsyad (2010) they suggested that in developing countries the unemployed people generally attempt to seek employment opportunities in formal sector particularly in government sector and such situation may result in prolonged unemployment. The unemployment trend for highly educated labor force were examined by Jamoussd and Gassab (2011), they concluded that higher education attainment and inadequate job creation are the prime factors behind the rising unemployment rate. Barnichon and Figura (2010) investigated the association between firm's hiring and unemployment with respect to the different phases of business cycle and they reported that the rise in overall economic activities have positive

impact on firm's hiring and negative significant impact on unemployment.

The Philips curve must be vertical in the long run due to the tendency of full employment with only the possibility natural rate of employment in the long run (Friedman, 1968). However, few recent studies, including another study by Friedman, suggested the existence of a positive association among the unemployment and inflation rates (see Haug & King, 2011; Rocheteau et al., 2007; & Dong, 2010). Kumar and Alok (2010) pointed out that labor union bargaining and efficiency wage in the inflationary period reducing employment and confirmed positive relationship between inflation and unemployment. While, Panday (2003) confirmed the claim that trade liberation has significant positive effect on earning and employment as well as on unemployment. Eriksson and Lagerström (2010) stated that high wages demanded by unemployed workers resulted in high unemployment. However, women are willing to get job at lower wages. As suggested by Contini (2010) the pace of new jobs creation, particularly for the youth, primarily depends on the macroeconomic environment of the nation. The nations with relatively better macroeconomic indicators are the nations with lower unemployment rate.

Energy consumption and economic performance are closely associated and deficiency of energy, particularly electricity, can potentially hinder the process of economic growth and prevalence of unemployment. For the first time in economic literature, Kraft and Kraft (1978) extended the causal relationship between energy consumption and economic growth. Recently a great deal of literature, for instance, Sari and Soytas (2007), Huang et al. (2008), Apergis and Payne (2009), and Mishra et al. (2009) also empirically probed the association between energy consumption and its impact on unemployment rate. Many nations, including Pakistan, are facing acute energy shortages and this is hindering their potential economic performance and resulting in unemployment rate.

### Theoretical Model

The relationship between aggregate level of output and rate of unemployment was for the first time highlighted by the Okun's (1962). He empirically investigated this relationship and claimed that if output growth falls by 3% from potential rate, it will increase unemployment by 1%. The relationship between unemployment and output is described by the following equation:

$$\delta(U_t^* - U_t) = (Y_t - Y_t^*) \dots \dots \dots (1)$$

Where,  $U_t$  is representing the rate of unemployment in period  $t$ ,  $U_t^*$  is natural rate of unemployment,  $Y_t$  is growth rate GDP and  $Y_t^*$  is potential output. Similarly, Phillips (1958) empirically found a counter cyclical relationship over the business cycle. The equation representing the Phillips curve can be derived from the short run aggregate supply function as under;

$$Y = Y_p + \alpha (P - P_e) \dots \dots \dots (2)$$

Where, the variable  $Y$  is representing the actual level of output produced by the economy,  $Y_p$  is representing the natural level of output,  $\alpha$  is a positive constant,  $P$  is the actual price level, while  $P_e$  is representing expected price level. After rearranging equation (2) we got:

$$P = P_e + (Y - Y_p) / \alpha \dots\dots\dots(3)$$

If we subtract  $P_{t-1}$  from both sides of equation (3), the equation would show the relationship between inflation and output as under;

$$\pi = \pi_e + (Y - Y_p) / \alpha \dots\dots\dots(4)$$

Since, Okun's law stated that  $(Y - Y_p) / \alpha = \delta(U_t^* - U_t)$ , therefore, we obtain the following equation to reveal the relationship between inflation and unemployment.

$$\pi = \pi_e + \delta(U_t^* - U_t) \dots\dots\dots(5)$$

Where,  $\pi$  is the rate of inflation,  $\pi_e$  is the expected rate of inflation and  $\delta$  is a constant. While, the unemployment rate is expresses through  $U_t$  and  $U^*$  is representing the rate of natural unemployment in the economy.

The relationship between energy crises and unemployment can be derived under assumption that due to energy shortage firms either stop production or shut down their business. In both scenarios, unemployment rate would increase due to scale effect. Let assume that a industry production function faced basic endogenous production function is

$$Y_{it} = A_t f(K_t, N_t) \dots\dots\dots(6)$$

Where  $Y_{it}$ ,  $K$  and  $N$  are output (GDP) of  $i$ th firm in period  $t$ , Capital & Labour respectively and  $A$  is the level of production efficiency or it is called total factor productivity (TFP). There is another factor which may have significant impact on growth, therefore the above equation may be written as

$$Y_{it} = A_t f(K_t, N_t, EG_t) \dots\dots\dots(7)$$

Where,  $EG$  is Electricity Supply, the equation 7 would be transformed mathematically, the model is as under;

$$Y_{it} = A_t K_t^\alpha L_t^\beta EG_t^{1-\alpha-\beta} \dots\dots\dots(8)$$

Where  $\alpha$  and  $\beta$  and  $(1 - \alpha - \beta)$  are share of Capital, labour and energy. The sum of Capital

and Labour and energy is equal to 1 under the assumption of Constant Return to Scale. The equation (8) can be converted into linear function by taking log and obtain elasticity of labour, capital and energy. The production function w.r.t time (t) and simplified as.

$$\ln Y_t = \ln A_t + \alpha \ln K + \beta \ln L + (1 - \alpha - \beta) \ln E_t \dots \dots \dots (9)$$

The equation 9 indicates key determinant of industrial output. If country faced severe energy crises, the industrial sector may be affected resulting cutting down in production. Therefore, scale effect may increase unemployment.

Besides that, there are several other factors which may have significant relationship with unemployment, for instance political and economic uncertainty. The political instability and uncertainty in the economy also hurts the labor market badly. The political and economic uncertainties not only discourage domestic investors but also reduce the FDI inflows and such situation may result in trade deficit and exchange rate instability. In this regard we are intended to gauge the impact of real exchange rate as a determinant of unemployment rate in Pakistan. Furthermore, gross fixed capital formation is also another significant stimulant of economic activities and rate of unemployment. Thus, the theoretical equation for unemployment may be written as follows;

$$U_t = \beta_0 + \beta_1 Y_t + \beta_2 \ln I_t + \beta_3 \ln E_t + \beta_4 K_t + \beta_5 RE_t + \beta_6 \ln Pop_t \dots \dots \dots (10)$$

Where,  $Y_t$  is output gap in period t,  $I_t$  is inflation in period t,  $E_t$  is energy supply in period t,  $K_t$  is gross fixed capital formation,  $Pop_t$  is population and  $RE_t$  is real exchange rate in period t. We expect that all parameters may have inverse relationship with unemployment.

## Methodology

### *Data and Measurement of Variables*

The variables which are used to estimate the model expressed by equation (10) are described as under:

- Unemployment rate is measured in terms of ratio between unemployed labor force and labor force participation.
- Real exchange rate and annual exchange rates are the average annual exchange rates of American Dollar and Pakistani Rupee.
- Annual rate of inflation is calculated through the average annual change in consumer's price index with respect to preceding year.
- In this study we opted to use the annual series of electricity supply as a proxy to capture the effect of variable of energy in our model.
- In order to measure the variable of output gap, we have estimated the regression equation between  $Y_t$  and potential output i.e.,  $Y_p$  then used the following function to calculate output gap;

$$\text{Output Gap } (Y_o) = Y_t - Y_p \dots\dots\dots(11)$$

The annual stock of capital accumulation with respect to previous year's investment is used to measure the value of current capital stock:

$$K_t = I_t + (1-\Phi)K_{t-1} \dots\dots\dots(12)$$

We constructed the indicator of capital stock by combining the initial capital stock concept by applying the procedure extended by Nehru and Dhareshwar (1993) as under:

$$K_t = (1-\Phi)K(0) + \sum_{i=0}^{t-1} (1-\Phi)^i I_{t-i} \dots\dots\dots(13)$$

Where,  $\Phi$  is depreciation rate, and  $K(0)$  is initial capital stock.

In order to estimate the initial value of investment, we need to estimate a linear regression of the log of investment against time ( $t$ ). Then the fitted value of initial investment is used to compute initial capital stock through following expression:

$$K_{t-1} = I_t / (g + \Phi) \dots\dots\dots(14)$$

Where, output growth rate is expressed by  $g$  and  $\Phi$  is representing rate of depreciation of capital. A rate of 4 percent annual depreciation in capital stock is used by Nheru and Dhareshwar (1993) and Collins and Bosworth (1996). The same rate is used here to estimate initial capital stock.

### *Econometrics Model*

We started our analyses by applying the Augmented Dickey-Fuller (1981) test to ensure that the data series has a unit root or not, this exercise is essentially require to determine the order of integration among the variables. After this exercise we can apply Johansson's maximum likelihood multiple co- integration test to evaluate the long run association between the variables. Later, to evaluate the short-run relationship between the variables we are intended to estimate Vector Error Correction Model (VECM). Granger (1986) and Engle and Granger (1987) extended the co-integration technique to estimate the long-run coefficients for consistent time series data. Shintani's (1994) suggested that Johansson method is relatively more reliable than the estimation techniques of Engle-Granger, particularly in the case of multivariate co-integration framework where we estimate Vector Autoregressive (VAR) econometric model. The procedures of estimation of VAR model are explained by Johanson (1988) and Johansen and Juselius (1990). The standard procedure of estimation of VAR model is provided as under:

Consider that  $X_t$  is time consistent data series represented through a vector of an order  $I(1)$ . Then the expression of a VAR of length  $p$  for the series  $X_t$ , would be of following form:

$$X_t = \sum_{j=1}^p \pi_j X_{t-j} + \mu + \varepsilon_t \quad (15) \quad t=1, 2, 3 \dots T$$

The equation (15) can be used to estimate long run association and coefficients for the variables using consistent time series data series for Pakistan.

### Empirical Results

The issue of unemployment has become severe for the last two decades, especially; the rapid growing population witnessed adding 1.2 million young entering in the labor market. The stagnant labor market situation was apparent with sharp rising unemployment. Therefore, the proposed study conducted to seek root causes of unemployment not only in the short run but also the long run. The time series data has been collected to analyse cointegration method for the long run association among the variables and Vector Error Correction Model (VECM) for investigate short run dynamics of unemployment. Table 3 presents the results of Augmented Dickey Fuller (ADF) method.

Table 3

*Augmented Dickey Fuller (ADF) Unit Root Test*

Variable	Estimated Values (First Difference)	Lag (s)
Unemployment	-6.46***	1
Output Gap	-2.91*	1
Inflation	-3.3**	1
Energy Supply	-6.31***	2
Gross Capital Formation	-4.83***	1
Population Growth	-5.07***	1
Real Exchange Rate	-6.44***	2

\*\*\* Significant at 1%, \*\* Significant at 5% and \* significant at 10%

The Augmented Dickey Fuller (ADF) was carried out to conduct unit root test, all variables were unit root at level, therefore, first difference was used to test null hypothesis of unit root. Table 1 indicated that all variables were stationary at 1% and 5% except output gap which is significant at 10% level. The cointegration results are presented in Table 4.

Table 4

*Johansen Co-integration Method*

Maximum Rank	Eigen Value	Trace Statistics	Critical Value (5 %)
0	--	196.3749**	124.24
1	0.8718	112.1667**	94.15
2	0.67648	67.0267	68.52
3	0.58341	32.0009	47.21

\*\* Significant at 5% level

We applied Johansen cointegration estimation procedures to explore the existence of the long run association between the rate of unemployment, output gap, gross fixed capital formation, population growth, energy supply, real exchange rate and inflation. We started our analysis with the null hypothesis of no co-integration between the variables used in our model ( $r=0$ ), however, the trace statistic is 196.3749 which exceeds the 95 % critical value of the trace statistic (critical value is 124.24), it is possible to reject the null hypothesis ( $r=0$ ) of no cointegration vector, in favor of the general alternative  $r \geq 1$ . The findings of Table 4 suggest that we may not reject the null hypothesis of  $r \leq 2$   $r \leq 3$  at significance level of 5 %. Thus, these findings suggest the existence of long run relationship between the variables at maximum rank of 1.

Once cointegration has been observed among variables, we need to find out the magnitude and direction of the co-integration. Table 5 summarized Johansen normalization results as follows:

Table 5  
*Johansen Normalization restriction imposed Results*

Variables	Coefficient	Z Value	$p >  z $
<b>Ygap</b>	0.0831***	13.65	0.00
	-0.0016		
<b>Kt</b>	0.0016	0.07	0.947
	-0.024		
<b>En</b>	-0.0387***	-6.62	0.00
	-0.006		
<b>Pop</b>	0.4715***	10.11	0.00
	-0.047		
<b>RER</b>	-5.663***	128.5	0.00
	-0.0044		
<b>Inf</b>	0.5663***	-7.78	0.00
	-0.071		

\*\*\* significant at 1% level

The results of Johansen normalization revealed that the output gap confirmed a significant long run effect on unemployment. While gross fixed capital formation has no effect on unemployment. The structural behavior of the economy indicated that there is no significant capital formation in the real sector. Therefore, gross fixed capital formation has no relation with unemployment in the long run. Population has positive relation with unemployment, which implies that rising population is exerting negative pressure on the job market and leading to the rise of unemployment in Pakistan.

The uninterrupted energy supply, particularly electricity, at stable prices can significantly

influence economic activities and resulting in new job creation, consequently reducing unemployment. On the other hand, inflation has an inverse relationship with unemployment in the long run in Pakistan, this finding is contradicting with the Friedman theory that inflation and unemployment has positive relation in the long run. The result may be justified on the basis that, Pakistan is a developing country and in the long run it could stills not reach full employment therefore, increasing economic activities may cause inflationary impact but due to economic activities, unemployment may be reduced. Finally, the coefficient of real exchange rate confirmed that increasing economic and political uncertainty witnessed losing confidence of both domestic and foreign investors may hurt the labor market causing unemployment.

Since, the long run relationship has been developed, it is imperative to seek the short run dynamic of unemployment for policy implications. Estimated results of Vector Error Correction Model (VECM) are presented in Table 6.

Table 6  
*Vector Error Correction (VECM) 1974-2013*

Variable	Coefficient	Chi-Square	p> Chi- Square
<b>Ygap</b>	1.83**	292.51	0
<b>Kt</b>	0.06***	32.3	0
<b>En</b>	-0.35***	23.03	0.06
<b>Pop</b>	0.03***	246.4	0
<b>RER</b>	0.91***	20.47	0.015
<b>Inf</b>	-0.46***	23.2	0.006

\*\*\* Significant at 1% level

The estimated results indicated that all variables have significant impact on unemployment in the short run. The coefficient of output gap confirmed the existence of Okun's law in Pakistan; however, the coefficient is slightly lower than the value extended by Okun. It implies that 2% increase in output may reduce unemployment by 1% the in short run. This study also found the traces in support existence of Philips curve in case of Pakistan. As one percent increase in inflation during the period of boom may reduce unemployment by 0.46%. In the long run, gross fixed capital formation has no effect on unemployment, while short run dynamics suggested that gross fixed capital formation has significant positive effect on unemployment. It could be likely because trend of capital formation indicated that most of the capital invested in services sector like telecommunication and banking sectors. These may create job opportunities and decrease unemployment but these sectors may not significantly generate employment in the long run as compared to potential of real sector.

Most of the demographers and population economists are of the view that higher population growth rate is a serious concern not only for the developing countries but also for the global economy. Our empirical evidences concluded that population has significant positive effect on unemployment.

However, the coefficient of population is 0.03 stressed that the effect of population is not a serious threat in the short run because 1% increase in population would raise unemployment by only 0.03% but the problem become severe in the long run because 1% increase in population may raise unemployment by 0.47%. Similarly, economic and political uncertainty has positive relation; the magnitude of uncertainty is 0.91 larger than as compared magnitude of uncertainty in the long run i.e 0.56. It is likely because, in the long run the uncertainty element is minimized. Finally, energy supply measured scale effect confirmed that in the short run, firms would either fire labor or stop production due to acute shortage of energy. The coefficient of energy supply indulged that 1% decline in energy supply may raise unemployment by 0.35%.

### Conclusion

The findings of this research suggest the existence of the long run association among important macroeconomic variables and rate of unemployment for the economy of Pakistan. It is also observed that scale effect and economic uncertainty have more influential effect in the short run as compared to the long run while population has a large significant effect in the long run. This finding also endorses the initiative by the Government of Pakistan's population control policy through reducing the total fertility rate. There are ample evidences suggesting the existence of the Okun's law in the short run; while, no such significant effect is observed in the long run. Gross fixed capital formation has a significant impact on unemployment in the short run, while it has no significant relation in the long run. The tendency of gross fixed capital formation confirmed our findings because most of the investment witnessed in services sector. This sector may create employment opportunities in the short run but in the long run, real sector may significantly contribute in reducing unemployment. Finally, inflation and unemployment revealed inverse relationship as suggested by Phillips in the short run but our findings did not confirm existence of positive relationship between inflation and unemployment.

On the bases of empirical evidences, we may conclude that the objective of alleviating poverty and reducing income inequality may not be achieved unless government may focus on creating opportunities for private sector to actively participate in economic activities, increase energy supply and initiate some population control program to overcome the problem of unemployment. Therefore, government has to design policies to encourage investment in real sector resulting high and sustained economic growth and reducing unemployment.

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# DETERMINANTS OF CAPITAL STRUCTURE OF PAKISTANI LISTED COMPANIES: THEORY VS. PRACTICE

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## Abstract

*Capital structure is a major element for any company as it has an important role in capital budgeting decisions, firms valuation and corporate profit. Pakistan has multiple national as well as multinational companies working at its full pace. This study was aimed to explore the determinants of capital structure using firm level data of multiple companies operating in Pakistan. Fifty companies including national and multinational companies were selected from Pakistan region. Different variables were tested with capital structure. These variables included tax implications, asset tangibility, operating and profitability performance, cost of capital and firm size. The results of this study showed that multiple companies' wishes to enhance firm value for which they tend to preserve financing hierarchy. Pecking order strategy is followed instead of target capital strategy so that control dilution is avoided. Variables directly related to leverage includes profitability and debt and equity cost. However, size of the firm, tax, operating performance and asset tangibility were found to be inversely related. Study revealed that size of the company and asset tangibility is negatively and significantly related to firm's gearing although theories of capital structure suggested it to be positively related. Major impact was noted on capital structure by all the variables included in this research.*

**Keywords:** Debt, Equity, Capital Structure, Financing Hierarchy.

**JEL Classification:** Z000

## Introduction

Capital structure has a major role in a firm as any change in this impacts firm's value. Investors can get significant data from the changes in equity and debt. However, the question still arises regarding choice of firm on equity and debt. Capital structure's different approaches were selected and analysed in this study. Pecking order theory and static trade – off theory of capital structure was selected and explored.

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According to Antoniou et al. (2008) in the static trade – off approach, a company sets a target “debt to equity ratio” and then achieve it gradually. This shows that firm value can be increased by the presence of capital structure that is adequately optimized while reducing outside claims to cash flow stream including bankruptcy cost, taxes as well as agency cost.

In pecking-order theory, debt is favoured over equity and internal to external finances if the firm has to issue securities or bonds. The firm that adopts this type of approach does not follow any specific capital structure. Pecking order is best explained in a way that it is experimented under high taxes, agency costs and transaction costs. Moreover, in this approach, there is more information with the people working inside firm than people outside firm (Shyam-Sunder & Myers, 1999). Managers generally prefer to use pecking order to generate funds so that they do not have to face any under pricing issues.

This research explores financing behaviour of different national and multinational companies in Pakistan that whether they follow static trade-off or pecking order theory framework. Another observation has been made that majority of the smaller firms avoids targeted capital structure. This study explores principles and factors that affect financial decisions in a firm. This will also help in testing differences in financial inclinations among firms, if any. For this exploration, target capital structure and financing hierarchy were chosen.

### **Capital Structure Theories**

Modigliani and Miller (MM) (1958) provided the base for analyzing financial structure effects on the value of firms in equilibrium. They mentioned that the choice between debt and equity financing has no substantial effect on the cost or availability of capital. According to Kim (1978), MM and work of some other authors show that firms increase the use of debt financing if they get reasonable economic benefit by a proportional corporate income tax. The key missing element can be represented by bankruptcy costs as considering these costs in MM’s work may back-up the notion of optimal capital structure (Hirshleifer, 1970; Robicheck & Myers, 1966).

The MM capital structure irrelevance proposition does not incorporate any bankruptcy costs and taxes as they assume perfect and frictionless capital markets (Carpenter & Petersen, 2002). In this simplistic scenario, changes in the capital structure of the company do not affect weighted average cost of capital (WACC) and it remains constant. Moreover, as the increase in debt becomes irrelevant, company stock price is not affected by the capital structure and hence capital structure becomes extraneous to valuation of the company from investor’s view point.

### **Static Trade-off Model**

Firms set a target debt-to-equity ratio which enhances value of the company to the highest level

possible. It does so by reducing overheads of existing market deficiencies including taxes, agency and bankruptcy costs. This approach presents different models that help in stabilizing disadvantages of cost of bankruptcy against tax advantages of debt. Both debt and equity are issued to increase firm value when total agency cost and total external equity is decreased (Jensen & Meckling, 1976).

As per static trade-off theory, book value debt ratios are positively related to return on assets before taxes and interest. It can be assumed that when a firm is in more profit, more income it must have so that bankruptcy is avoided and eventually it can have high leverage ratio. However, the analysis of the industry shows that highly cost effective companies do not make use of leverage although they make huge profits.

### **Pecking Order Theories**

According to this approach, internal financing is given first priority. Outside debt comes on second while equity comes as the last priority. Preference of debt over equity gives the tax advantage of debt to the firm. Firms usually avoid outside fund sources. It is because, this external debt increases unnecessary checking. Moreover, external equity also increases control dilution as well as unwanted screening. However, if the funds are generated internally, these problems are not encountered. According to Krasker (1986) financier faces worst signal by bugger stock issue and therefore, the company faces decline in the stock price. Miller and Rock in the year 1985 mentioned that internal funding dominates over external funding however if we see as a whole, it is a static trade-off model rather than the pecking order.

### **Method**

#### *Sampling and Collection of Data*

Different companies mentioned on Karachi Stock Exchange (KSE) were selected and their financial statements were explored. Annual financial reports were utilized for the collection of financial data. The sampling and collection of data in this study followed the format used in the study presented by Chen (2004) and Kjellman and Hansen (1995).

50 companies were selected for this study. These companies were listed on KSE and had highest market capitalization. Major industrial force was represented by the selected companies; it was assumed that it may be helpful in the assessment of overall leverage in the country.

Companies including banks, investment trusts and insurance companies were not included in this study. It is due to the remarkable differences between the balance sheets of financial versus non-financial companies.

### *Variables Included in the Study*

Variables selected for this study were all quantifiable. Variables including asset tangibility, profitability, operating performance and size of the company vary from firm to firm. Financial reports of different companies were used to collect data which was then measured on a specific scale.

Market data was used for variables like cost of equity & debt, and tax rate. Wide range of variables was selected from the literature as it aids in the identification of similarities and differences while analyzing different capital structure determinants (Chen, 2004). Table 1 shows dependent and independent variables.

Table 1  
*Independent and dependent variables' measurement*

<b>Variables</b>	<b>Measurement</b>
<b>Dependent Variable</b>	
Capital structure (CS)	Ratio of debt to equity (leverage ratio)
<b>Independent Variables</b>	
Firm size (SIZE)	Total assets (debt + equity)
Cost of debt (COD)	Interest rate
Cost of equity (COE)	Dividend yield ratio <b>Formula:</b> Annual dividends per share/price per share
Taxes (TAX)	Average tax rate <b>Formula:</b> Total tax liability/taxable income
Asset tangibility (TANG)	Ratio of tangible to total assets <b>Formula:</b> (total assets - total liabilities - intangible assets – preferred shares)/total assets
Operating performance (FAT)	Fixed asset turnover ratio (revenue/fixed assets)
Profitability (PROF)	Return on capital employed (ROCE) ratio <b>Formula:</b> EBIT/capital employed

### *Model of Research*

This research utilized cross-sectional model of data collection. The sample consisted of data from different companies over a specific time period (Chen, 2004). Quantitative research method is adopted for this study. Financial data of the selected companies were observed and evaluated quantitatively. Collected data was then evaluated using AMOS (Analysis of Moment Structures) and SPSS (Statistical Package for Social Sciences) (Khan & Zafar, 2013). Variables was analyzed using ANOVA, regression and Pearson's correlation.

### *Analysis of Data*

Relationship between independent as well as dependent variables was analyzed using multiple linear regression model (Khan & Zafar, 2013). Standard 5% critical level is considered significant for this model (Kjellman & Hansen, 1995).

### *Regression Equation*

$$\text{Leverage} = \alpha + \beta_1 (\text{Firm\_Size}) + \beta_2 (\text{Debt\_Cost}) + \beta_3 (\text{Equity\_Cost}) + \beta_4 (\text{Taxes}) + \beta_5 (\text{Asset\_Tangibility}) + \beta_6 (\text{Operating\_Performance}) + \beta_7 (\text{Profitability}) + \varepsilon$$

## **Results and Discussion**

Table 2, table 3 and table 4 shows findings of this study. The results showed that dependent variable in capital structure have R-square of 45.9%. This is the level of variance that is in relation with seven independent variables.

Results from ANOVA showed zero percent insignificance between independent and dependent variables. This result showed that the hypothesis can be tested at p-value of <0.01. Correlation coefficients revealed that every independent variable contributes significant variation in the capital structure either directly or inversely.

Means were also calculated for the selected companies. Scores of 3 to 1 for rank 1 to 3 were assigned. Preference for financial hierarchy in generating new funds was indicated by these rankings

Capital structure's dependent variable's descriptive analysis revealed that majority of the companies prefers internal financing over debt and also they prefer debt over external equity. Results also revealed that US practices are being followed by Pakistani banks, companies and also by government. Banks do not have significant influence in Pakistan and companies opt to raise funds internally before selecting the option of external loans. This is in parallel to Pecking order theory. On

the contrary, there is an inverse relation of average tax rate with leverage ratio. This also validates that companies are not following target capital strategy presented in static trade-off model. Rather, firms are trying to avoid the risk in business which increases with increased gearing.

Table 2:  
*Summary*

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1.	0.677(a)	0.459	0.368	1.226

Table 3:  
*ANOVA*

<b>Model</b>		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F-value</b>	<b>Sig.</b>
1.	Regression	53.470	7	7.639	5.084	0.000
	Residual	63.110	42	1.503		
	Total	116.580	49			

Table 4:  
*Preference rankings of financing sources among Pakistani firms*

<b>Financing Source</b>	<b>Mean</b>
Internal funds	2.63
Debt	1.98
Equity	0.55

### *Path Analysis*

No latent variables are used in this study. Variables are observed in relation between dependent and independent variables. This study did not consider correlations among independent variables. However, this study maintained focus on relation between dependent and independent variable.

### *Estimates*

Beta values of this research are shown in table 5. Capital structure and firm size are inversely related. It is best explained as if size of firm goes up by one standard deviation, ratio of debt to equity decreases by 0.159 standard deviation. Conversely, capital structure and debt cost are directly related. Independent variables are shown with their relationship strength and direction.

Table 5:  
*Standardized Regression Weights*

<b>Dependent Variable</b>	<b>Independent Variable</b>	<b>Estimate</b>
CapitalStructure	<--- FirmSize	-0.159
CapitalStructure	<---CostOfDebt	0.048
CapitalStructure	<--- Tax	-0.281
CapitalStructure	<--- OperatingPerformance	-0.113
CapitalStructure	<---Profitability	0.079
CapitalStructure	<---CostOfEquity	0.051
CapitalStructure	<---AssetTangibility	-0.569

Table 6 presents independent variables' estimates of mean, standard error, and critical ratios. P-value is less than 0.001.

Table 6:  
*Mean Values*

<b>Independent Variables</b>	<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>
Firm Size	1.940	0.170	11.411	***
Cost Of Debt	2.760	0.173	15.976	***
Cost Of Equity	1.660	0.145	11.481	***
Tax	2.400	0.164	14.623	***
Asset Tangibility	3.080	0.219	14.053	***
Operating Performance	2.500	0.188	13.305	***
Profitability	2.680	0.190	14.071	***

### *Findings of the Study*

Firm size (total assets) of majority of selected firms was between 20 billion to 50 billion rupees. Only 18% of sample has more than 100 billion rupees worth of total assets.

Most of the selected companies in this study had interest rate between 9-10%. Less than 9% interest was shown by 14% of the selected firms while more than 14% interest was shown by 12% of selected firms. Less than 5% equity cost was shown by most of the selected firms. More than 13% of dividend yield ratio was shown by only two percent of the selected firms.

Majority of the firms were paying tax at an average rate of 31-35%. However, less than 20% rate was paid by 30% of the selected firms. Moreover, more than 60% tangible to total asset ratio was noted of a majority of firms. However, other firms showed this ratio to be less than 30-50%. Some of the companies also showed fixed asset turnover rate to be less than one percent. Capital return was found to be between 10-20% for 34% of the selected companies while others (16%) were generating more than 40% of capital return. Significant debt was noted in comparison to equity for most of the companies when “debt to equity” ratio was evaluated. This revealed that most of the Pakistani companies are following financing hierarchy.

## Discussion

This research revealed that profitability and capital cost have a direct relation with capital structure. Moreover, operating performance and asset tangibility was inversely related to capital structure. The study revealed that no specific theory of capital structure is followed by companies operating in Pakistan. However, majority of the firms showed preference towards financing hierarchy mentioned in “Pecking order theory”.

### *Findings in Accordance with the Theories*

Our research showed that equity and cost of debt are significantly and directly related to capital structure. This is also in parallel to the theories of capital structure. These theories mention that advantage from continuous increase in debt actually decreases with debt increase. However, there is also a slight increase in the cost. Hence, a company that is opting for such kind of strategy would emphasize on this trade-off when deciding about equity and debt level to be used so that the funds are generated (Hsu & Hsu, 2011).

According to the results, leverage and profitability were positively related. High profitability is generally related with a low level of leverage but it is also related to increased chances of taking debt in comparison to taking equity which is in alignment with dynamic trade-off models (Leland, 1994).

Debt and operating performance were found to be inversely related. This is in parallel to the theories present. According to Fama and French (2002) negative effect of productivity on debt is in parallel to pecking-order theory. Findings of this research revealed that majority of the selected companies prefer financing hierarchy.

Debt and taxes are found to be inversely related. This is also in parallel to the given theories. According Titman and Wessels(1988) in capital structure theory there are substitutes of debt financing with tax advantages. Consequently, the firms have less debt where non-debt tax shields are huge in comparison to their expected flow of cash.

### *Findings Inconsistent with the Theories*

In this study, size of the company was negatively affecting gearing. However, according to Harris and Raviv (1991) firm size, investment prospects and asset tangibility are directly related to debt and negatively related to firm distinctiveness, R&D expense, advertising expense, non-debt tax shields and risk of bankruptcy.

In this study, leverage was inversely related to asset tangibility while theory mentions that

more debt can be gained by presenting solid property of the firm as a guarantee (Titman & Wessels, 1988).

### *Managerial Implications*

Capital structure effective utilization is a key to the success of the organization. Companies should maintain their focus in keeping the capital cost as low as possible. Moreover, companies should analyze all the available possible ways to generate required capital when they are starting a new project. Every country has some differentiating factors in their business culture, banks influence in the market, investor preferences, behaviour and attitude of human resource, industry standards, government policies and regulations and the demographics. It is the responsibility of the managers to consider all the factors when they tend to raise capital for any of their projects. These factors are termed as “capital structuredeterminants”. These include asset tangibility, size of company, profitability and performance of other companies in same industry, debt and equity cost and interest and tax implications of the country.

Managers usually follow certain theories regarding capital structure when making decisions in raising equity or debt. Researchers have included different countries in their research including China, USA, South Korea and Finland. These studies evaluated the patterns that their managers follow in the company.

Some developing countries have also conducted similar research. A study conducted in Ghana showed that financial decisions were affected by capital theories. The results in this research showed an inclination towards equity financing (Doku et al., 2011). Another study included the developing countries where they analyzed the determinants of decisions related to formulation of capital structure. The importance of firm level variables is confirmed in accordance with capital structure theories as per the drawn conclusions (Bas et al., 2009). Our study was hence conducted to explore capital structure determinants in Pakistani companies and to uncover the trend of managers in Pakistan in following theories of capital structure in making their choices regarding capital.

Results from our study may help managers in Pakistan to have a better understanding of practices of making decisions on capital structure. It will also help the managers to learn about the theories mostly prevailing in Pakistani market. Our study also introduced some new variables that will positively aid in analyzing new dimensions of capital structure while making important decisions. Moreover, this study may help the State Bank of Pakistan and also the government in forming regulations to assist companies according to their requirements of capital. Furthermore, theorists and educationists in Pakistan may get help in understanding the practicality of already established theories as well as managers' attitude about these theories.

### *Future Research Recommendations*

1. Determinants like operating performance and profitability and asset tangibility were not included in previous researches. These could be included in future research conducted in any other region of the world.
2. Our study, like other similar studies, excluded banks as well as financial institutions as their capital structure is not the same as of general businesses. Research can be conducted on banks and financial companies to explore their capital structure and to uncover what theories these firms and banks usually follow.
3. Small Over the Counter listed Pakistani companies can also be selected for future researches. Also, this research was conducted on firms listed on KSE. Firms listed on Islamabad as well as Lahore Stock Exchange can also be selected for such research to gain a better understanding of the capital structure determinants of overall industry operating in Pakistan.
4. Asset tangibility and firm size showed results opposite unlike the ones present in given theories. These determinants can be explored in more detail so that the cause of this opposite and negative relationship to debt can be understood and discussed in detail in Pakistani firms.

### **Conclusions**

Debt-to-equity ratio of most of the Pakistani companies is less than the standard ratio of 60:40. This shows that firms are not following target debt-to-equity ratio. Moreover, when the size of the company is huge, its leverage would be small. As the equity cost increases, firm raises more debt so that equity cost is reduced. Furthermore, when the debt cost increases, tax shield benefit also increases and consequently the firms increase their debt further. Firms prefer debt more over equity because when the profit increases, companies can comply with obligations of debt with more ease.

Average tax rate, asset tangibility and operating performance were found to be inversely related to gearing ratio. It is justified by the fact that revenue generation and operating performance was markedly improved when interest payments were reduced.

Also, it was found that Pakistani firms prefer non-debt tax shields more which hence decreases leverage and increases average tax rate. Surprisingly, firms that have more tangible assets issued lesser debt. The key reason behind this finding could be the preference of internal debt and avoidance of bankruptcy cost.

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# HOW MEMON, DELHI SAUDAGARAN AND CHINIOTI ENTREPRENEURS CREATE NEW VENTURES?

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## Abstract

*This paper explains how entrepreneurs belonging to Memon, Delhiwala and Chinioti communities create new ventures using family and community resources. Using multiple sources of data including in-depth interviews, community literature, and direct observation, the paper creates a consolidated picture of the process employed and recommended by the entrepreneurs of three communities. A case study approach was used to process and analyze the data. The findings suggest that religious orientation, family culture, family resources, family and community networks play a pivotal role in shaping the process of venture creation. The finding can be helpful for new entrepreneurs planning to start a business in the Pakistani context.*

**Keywords:** Venture Creation, Ethnic Entrepreneurship, Mixed Method Approach, Community Literature.

**JEL Classification:** Z000

Note: This paper is extracted from the doctoral thesis of the first author of this paper.

## Introduction

In Pakistan there are a number of communities known for their entrepreneurial nature. Among them Memon, Delhi Saudagaran and Chinioti are the top three (Saqib, 2016). These communities have been entrepreneurial since many centuries and even dominated the trade and commerce of the sub-continent during the British rule (Suriya, 2011). Looking at the expanse of their entrepreneurial activity, which was spread all over the subcontinent and even beyond (Menning, 1997; Saqib, 2016), one can infer about the depth and breadth of their experience, sophistication of their techniques to initiate and manage large scale enterprises. Despite the richness of their experience, there is negligible research done to understand and document it.

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This paper is extracted from a much broader exploratory study done to understand how Memon, Delhi saudagaran and Chinioti communities in Karachi run and manage their venture in ways which are compatible with their community culture and ideological orientation. This paper will exclusively focus on how entrepreneurs in the respective communities start their ventures using family and community resources, how their ideological orientation and family culture affect their startup strategies. The study is qualitative in nature and uses a case study method to process, analyze and organize the data collected from multiple sources.

The next section will review the brief amount of literature available on ethnic communities in the region. Section 3 discusses the methodology used to explore how the entrepreneurs in the three communities start their business. Section 4 will cover the findings followed by the discussion and conclusion.

### **Literature Review**

The research done so far on the ethnic-family entrepreneurial communities in the Muslim world is limited. Papanek (1972), Levin (1974) and Werbner (1985) have done some work on how communities are organized in the Muslim world, however, their articles are decades old. Dobbin's (1996) work on Asian entrepreneurial minorities, which only discussed Ismaili community and Egbert's (1998) work on Bohra community in Tanzania are relatively more recent. Any similar study on Delhiwala and Chinioti communities in Pakistan who are also known for having a similar orientation was not found. The work of Menning (1997) is also valuable in this context; however, it is not exclusively about the Muslim community, rather Menning has taken an impartial view on all such ethnic groups in Surat City. The following is the review of the limited amount of literature on Muslim entrepreneurial communities.

Respective literature explains how Memon, Dawoodi Bohra, Ismaili (etc.) organize their business, family and community life in a synchronous way. The facilitative environment of family and community makes it easy to start a new business; financial support, social capital, information access, connections with suppliers and potential customers, makes self-employment a preferred career choice for community members. Such a level of support ensures a continuous stream of opportunity creation within the community (Papanek, 1972).

According to Levin, "reputation for being pious Muslims, which has been attached to the Memon contributes greatly to their commercial success" (p. 232) subsequently creating an atmosphere of 'enforceable trust' among the community members. In this context, cultural and religious values play their part in providing a discourse to rationalize the 'reciprocity exchanges'. The communal bond, therefore, also becomes a source of labor, expertise, market intelligence, connections, suppliers, and even capital to develop the business. The trade network within the respective communities also operate on the same lines (Levin, 1974).

Basu (1998) notes that the long-run success of family firms depends on “access to and use of informal (personal and family) sources of capital at the time of business start-up” (p. 317). Apart from that “access to informal sources of information through other family or community members being in the same line of business” (ibid) is another advantage Asian entrepreneurs operating in the UK, including of Pakistani origin, receive from their communities.

Egbert (1998) has made a similar observation about Bohra community operating in Tanzania, in his view the key competitive advantage Bohra entrepreneurs have over other entrepreneurs is “the possibility to receive financial support in the founding phase of business. Loans are provided with extremely favorable conditions” (p. 133). The pool of funds for this loan scheme has been organized by “established entrepreneurs” (ibid), as per the instructions of Bohra’s religious authority, to facilitate other community members in setting up new ventures (ibid). In other communities also personal networks helps in evaluating creditworthiness of a new customer. The same networks are also a source of information about market dynamics and emerging opportunities (Papanek, 1972).

Similarly in Surat city (India) various entrepreneurial communities do business on informal lines (Menning, 1997). The financial and information support which exist within the “extended kin ties and the putative or mythical kinship uniting members of the same caste or religious community” (p. 73) is preferred over “formal and impersonal types of outside support and organization” (ibid) by the community members. Menning notes:

“When an individual has access to zero-interest loans from his family firm or his ethnic community, he has little need to approach lenders such as banks or money-lenders for capital. In the same way, entrepreneurs often prefer to get advice and training from family and caste members rather than relying on external sources like state agencies, vocational schools, and so on.” (p. 73)

Similarly extensive use of family and kinship resources to start and run businesses has been observed in ethnic entrepreneurial communities around the world (Flap et al., 2000; Portes, 1998; Woolcock, 1998). The family and community relationships are a source of information about emerging opportunities in the market (Zimmer & Aldrich, 1987); often family members and young ones are hired as apprenticeship at a lower cost; the immediate and extended family also provide necessary funds to start a venture, often on interest free basis (Flap et al., 2000). Trust, a fundamental lubricant (Putnam, 2000) in business relations, is high in between family members of ethnic communities as compared to that with non-members (Zimmer & Aldrich, 1987).

As a result the transaction cost of doing business is reduced for ethnic entrepreneurs (Aldrich & Waldinger, 1990). The community can provide a customer base for the early stage ventures (Peng, 2005). The inter-community connections of firm owners can help in finding trustworthy suppliers (Dana, 2009), can help access the opportunities within and outside the community (Volery, 2007), and

can provide trusted labor force (Peredo, 2003). The community culture and closely knit networks create social pressures prohibiting the community members to violate ethical norms established in the community (Portes & Sensenbrenner, 1993).

### Methodology

The case study method was used to study the three communities. The case study method can incorporate the use of multiple sources of data including interviews, direct observations and community literature published as monthly magazines and newsletters (Yin, 2003). Furthermore, case study method also encompasses the complexity of a phenomenon and the rationale behind the phenomenon(s) under study (ibid).

The paradigm used to interpret the findings is known as social constructivism where the reality is not assumed to be discovered rather co-created by the respondents and the researcher. Background, values, pre-conceived notions; biases etc. of all participants influence the exploration process (Creswell, 2007; Guba & Lincoln, 1982; Lincoln & Guba, 2013).

We used the transcribed data from 9 interviews of entrepreneurs from Delhi Saudagaran, 8 from Memon and 7 from Chinioti community. The number of respondents from each community fall within Eisenhardt's prescribed limit (Eisenhardt, 1989). Experience of these respondents was treated as a mini-case within the case of the entire community (ibid). Each respondent was asked about his own experience and his observation at the community level. The interviews were conducted in Urdu, which were then transcribed. The transcripts were thoroughly read, and summarized. Summaries which were created in English language were sent to the respondents for verification and consent. However to maintain anonymity of the respondents their names are not mentioned in the case study (Creswell, 2007).

The findings of these interviews, after approval of the respondents, were triangulated with the biographies and literature published in the community magazines (Eisenhardt & Graebner, 2007; Yin, 2003). The exploration from the data was stopped till the point of theoretical sufficiency, that is proceeding any further did not reveal any more constructs, patterns or rationale between the phenomenon under study (Andrade, 2009). The findings were coded and categorized through a highly iterative process of comparing "data with data, data with category, category with category, and category with concept" (Charmaz, 2006: 187). The emerging pattern was articulated in a case study format as recommended by Creswell (2007).

The findings presented below are extracted from the case studies developed for each of the three communities. All findings related to venture creation or creation of a business firm using family and community resources are articulated below. The references to the data are made as follows:

- Transcribed interview recordings are cited as (IAP 5) where 'IAP' is the initial of the

respondent, and 5 is the serial number of the key statement from the transcript compiled in the data set developed in this study.

- Reference to the magazine Saudagar is made as '(Saudagar, Mon 20XX, p. ##)'. All issues of the magazine since 2001 are downloadable from <http://saudagar.pk/download.php>.
- Reference to the Dr. Amjad Saqib book 'Kamyab Log' (Saqib, 2016) was made as (KL, p. ##).
- Similarly references to the Memon magazine were made as (Memon, Mon 20XX, p. ##). Memon magazine until November 2014 can be downloaded from <http://www.wmopc.com/indexma.php>, while magazine after April 2015 can be downloaded from <http://wmoworld.com/the-Memon/>.

## Findings

### *Entrepreneurial Traits*

Starting a business require a number of entrepreneurial traits. The traits highlighted by the respondents and mentioned in the magazine Saudagar, include desire to learn (SAR 8; AB 52; UL 58; IS 13), strong communication with employees and customers (FA 41), courage (FA 40; MF 65), emotional maturity (RS 33), self-control during difficult times (KL, p. 101; MT 23; MN 52), hard working (IAP 20; TP 22; JBS 25), perseverance (TP 16; SAR 35; KL, p. 156; SJ 22; AB 13), humility (FA 32), intuition (FA 27, 45), judgment of character (KS 6), ability to take risk (NS 63; Memon, Sep 2015, p. 6; MF 55), financial management (TP 67), having ones skin in the game (JBS 59), visionary (Saudagar, Feb 2015, p. 13; KL, p. 253; MT 26), self-reliance (Saudagar, Sep 2011, p. 29; May 2012, p. 59), belief in ones Creator to provide sustenance (SAR 56; JBS 14; IO 31), emotional intelligence, self-confidence, street-smartness (WK 69), time management (KL, p. 177, 147), passion (KL, p. 112; Memon, Apr 2016, p. 12), appetite for growth (MF 51), being bold and vigilant (MF 37), good at calculations (IO 87; MT 63), drive for continuous improvement (MF 54), a win-win mindset, honesty of intentions (JBS 58), and ability to remain as stress free as possible to avoid making mistakes (MT 21).

### *Training and Guidance*

One should gain the knowledge of the supply chain before entering into a new line (IS 70; IO 105). It is advisable to gain some experience for a few months in some small business of one's choice and learn how to manage the whole supply chain and the market (WK 67; SJ 58, 60; MT 13; Memon, Nov 2015, p. 4). Market knowledge is also important; spending time as a salesman can help one understand how the market works (FA 10, 20). It may also be recommended to find a job in the SME (Small and Medium Enterprise) sector (IAP 83, 84), in the domain of one's interest, to gain relevant experience (Saudagar, Feb 2016, p. 42). Two of the respondents had many years of job experience before the respondent started their business (KS 1; FA 1). The preliminary knowledge can be gained by consulting a friend or a family member who is already experienced in the domain (IS 69; MA 2).

Mentorship by family or community elders can facilitate during the entire process of setting up a business (UL 2; SJ 9, AB 12). In case of lack of experience, partnership with someone already experienced in the field is another option. Partners can be from one's immediate network, friends and relatives (KS 10; KS 21, SAR 20).

### *Opportunity Recognition*

Business opportunity is identified from the information received from the community network (as mentioned earlier). In many cases the opportunity to start a business was discovered from within the immediate family network (TP 34; IO 4; NS 5). Sometimes the customer is already known to the entrepreneur before starting the business. Often the established entrepreneurs develop the new comers in his family network as his suppliers, and become the first customer as well. This customer bear the teething problems of the new comers as they struggle to produce the desired quantity and quality of product at the right time (IO 3; SAP 58). This suggests that knowing the customer in advance is also important (JV 7; WK 2). The initial customers are also found using ones personal and family connections (FA 30; KS 2; SAR 31). The assurance of the first customer gives confidence to the first time entrepreneurs and minimizes their stress and risk also, subsequently minimizing their chances of failure. Ones network beyond the family and community can also be helpful in finding customers (KS 21, SAR 20).

### *Using and Maintaining Family Goodwill*

Personal and family credibility is important to gain trust of all stakeholders. Maintaining and growing that credibility through honesty and honoring of commitments is crucial. At the time of starting a business family goodwill is one of the important assets for the new entrepreneurs, as mentioned earlier (SAP 11; ARJ 14; MT 4). When starting a business family's or fathers credibility helps getting connected with potential suppliers. Supplier would also give credit if he already knows ones father or family background (MN 22; SAP 19; MT 9). The budding entrepreneur also needs to prove through his conduct with stakeholders that he has the capacity to carry on the goodwill of the family by honoring his commitments with the customers and suppliers (MT 11). Establishing the trust with the suppliers, therefore, is fundamentally important through timely payments (SAP 16; MT 7).

### *Capital Arrangement*

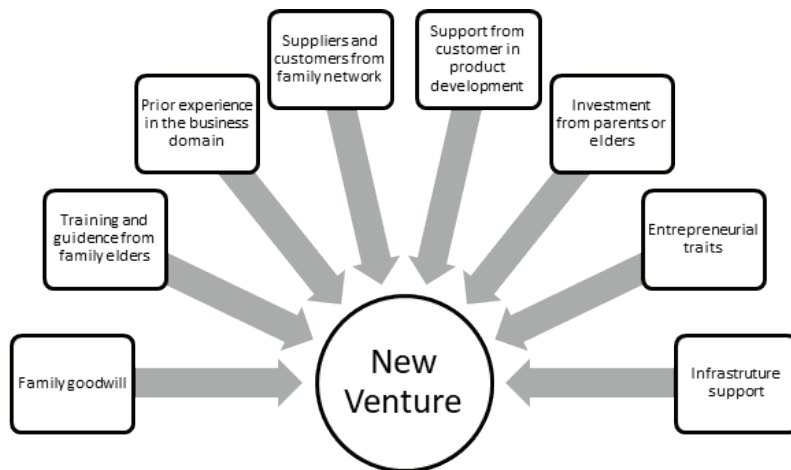
The father is the first investor in many cases (MA 21; SAP 20; MT 4). Other than one's father, father in law can also be an investor. Partnership with some relative or friend can also be done to raise investment (SJ 16; UL 11, 17). If capital is not available within immediate network then the person either save money through brokerage, or by working as an employee for some years (SS 20; SJ 32; JV 12). Due to religious reasons banks are avoided (WK 39; RS 42; ARJ 22). Absence of interest payments on bank borrowing keeps the cost of doing business low. Also the risk of failure is

reduced when using capital from family particularly when the market is uncertain. All respondents suggested that there is no significant difference in business growth when banks are avoided, rather business performance is improved as the entrepreneur operates without the fear of bankruptcy during difficult times (IO 12, 18; AsB 16; WK 64).

### *Improvising Using Available Resources*

It is important to work by hand and getting them dirty to learn the basics of the business (KL, p. 199, 97, 155; WK 28). Minimizing the expenses on any luxuries is advisable as personal expense is also a cost incurred to the business (Saudagar, Jun 2016, p. 72). Keeping the personal expenses low to the minimum is important to keep the cash flow positive (AB 20; SS 3; MT 25). It is recommended that the business is started with the available resources (Saudagar, Dec 2012, p. 68; SAR 21), not more than 50% capital at hand should be invested (NS 62), one must not go beyond his means (JBS 58), and chosen domain must be according to ones skill set (SAR 18). Any unnecessary office expense also needs to be avoided to keep the cost low (JBS 58).

Minimization of cost will increase the net profits, which is reinvested in the business. The growth of the business, therefore, needs to be organic, slow and steady (FA 17; KS 17; IAP 85). Entrepreneurs start from what they have (AB 17; KL p. 95), what they know (KL, p. 93) and what resources are available in their network. Organic growth is preferred through reinvestment of profits. It is emphasized that one should begin with improvising on the resources already available (ARJ 10; IO 102, 108). It's advised to keep the pace slow and steady (MT 24) and keep ones faith in the Al-Mighty as the sole provider of sustenance (MN 37).



*Figure 1: Factors, including community and family resources, contributing to the creation of a new*

venture

The following is the consolidated summary of the steps taken or recommended by the respondents from all three communities:

Step 1: Evaluate yourself, ask what I know, whom I know, who am I, what I have, and what are my passions. Identify means, and do not go beyond them. Know the bird in hand. The knowledge, capital, family workforce, infrastructure support, the connections with stakeholders in the network, goodwill of the family are all resources. Gradually expand by investing the profits. Do not take excessive risks as they increase the chances of failure. Experimentation can be done to test new ideas by leveraging the resources available in the support network.

Step 2: Seek advice from the elders regarding the opportunities which exists in the domain of one's expertise. Knowing the customer in advance reduces the risk of investment significantly. Often opportunities emerge in the process of building a business, sometime in the form of accidents or unprecedented events.

Step 3: Get experience as an apprentice or an employee in someone else's business; market experience can also be gained through brokerage which would also generate returns. Knowledge about the product, production process, competition, and customer is fundamental before starting a business. Working in a smaller business is more beneficial as it is possible to learn about the entire supply chain which is not visible in large scale enterprise.

Step 4: Do not invest all the savings or the money borrowed from father or someone else, have something as a backup in case the business collapse. Work out the affordable loss and invest only that amount. Keep the cost low and work with your own hand as much as possible.

Step 5: Build credibility with the suppliers and goodwill with the customers. Market reputation is one of the important assets an entrepreneur possesses. Commitment to the customer must be honored at all cost. Timely payments to the supplier build trust, and the supplier comes forward with easier credit terms.

Step 6: Expansion is done within the means. Banks are avoided. Partnership with trustworthy community members, friend or close relatives is sought. Customer is sought from the network of family and community. Employees are hired using community references. A family like atmosphere is recommended to keep the employees loyal and motivated. The same criterion of meritocracy is applied for all participating members including the immediate family, relatives, and employees from within and outside the community.

## **Discussion and Conclusion**

The finding of our research complements the existing literature on how family and community facilitates the process of venture creation by providing training, guidance, information, trustable human capital, financial capital, connections with customers, access to credit networks and suppliers, facilitation in opportunity recognition and moral support during difficult times. The trust that exists in family and community networks significantly reduces the transaction cost. These benefits make it pertinent to maintain the bonding with the immediate and extended family, and

community networks. For example, not honoring one's verbal or written commitments can adversely affect the relationships with the concerned stakeholder, and also damage one's reputation in the community network.

The insight regarding the impact of religion and lifestyle on acquisition capital and management of resources in context of ethnic entrepreneurship is an addition to the existing body of literature on the subject. Avoiding of interest bearing loan and using family capital to start a business is not seen as a barrier in the process of business growth, rather a source of entrepreneurial liberation and control. Reinvesting profits while keeping the personal expenses to the minimum is a notable phenomenon, not observed in earlier research. Avoiding banks and reinvestments of profits keep the growth of business steady and stable, while keeping the business resilient during tough times, as believed by the respondents from the three communities. Religious values and lifestyle choices therefore can have an impact on how a business survives during tough times.

The process also comes closer to the effectuation model of entrepreneurship as proposed by Sarasvathy (2001). As suggested in effectuation model, the community entrepreneurs start from their means, and explore the opportunities and using their existing networks and make commitments with potential stakeholders while doing so. However, respondent's experience suggests that overreliance on existing knowledge and experience of elders limits the new comer's capacity to explore into new venues and experiment novel ideas. There were examples in the data where a new comer surrounded with entrepreneurs in a dying or badly performing industry would, therefore, have negligible options as he (or she) would be reliant on the same underperforming network of entrepreneurs.

On the positive side, the relationship within the family and community networks provides a facilitative environment for the new entrepreneur particularly when he or she faces difficult times. For example, a creditor will easily extend the payback time without charging interest, a favor which one cannot expect from a commercial bank. The entrepreneurs in all three communities suggested that the failure rate of new businesses to be less than 20% (IS 51; IS 53; ARJ 89; MN 48), however, there was no published data to back this claim. Even if we assume the failure rate to be twice than what is perceived by respondents, it is significantly better than the venture failure rate of entrepreneurs using a "causal method" (Sarasvathy, 2001) of starting a business (Blank, 2013).

Due to space limitations, the paper sketches a brief outline of the process of venture creation as practiced and recommended by the respondents of Memon, Delhi Saudagaran and Chinioti communities. The brief description points toward the significance of learning from the experience of respective communities of creating a facilitative environment for entrepreneurs. The facilitative environment reduces the chances of failure and preserves the socio-psychological wellbeing of all stakeholders involved. Replication of such an environment can also help in the promotion of entrepreneurial culture and inclusive economic growth.

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# HUMAN RESOURCE OUTCOMES: A META ANALYSIS

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## Abstract

*This manuscript aims to determine the impact of certain human resource (HR) practices on organizational and employee based factors. These factors include organizational performances, employee productivity and turnover intentions. It explored the individual impact of all the non-financial measures that determine the performance and productivity of an organization. A meta-analytical technique was systematically conduct to study the already prevailing empirical evidences. The sample size of the study consisted of 55 articles through a statistical analysis of Fisher Z metric, which is a transformational implementation of the correlation between variables. The results determined that certain HR practices such as employee skills and training have more impact on organizational performance. Moreover, where on one hand HR practices significantly improve productivity of employees on the other hand it has an inverse effect on turnover intentions of employees working within an organization.*

**Keywords:** Organizational Performance, Employee Productivity, HR Practices, Turnover Intentions.

**JEL Classification:** Z000

## Introduction

One of the major determinants of identifying the success or failure of an organization is its performance that has been of a lot of interest for stakeholders. An extremely broad domain that comprises of many financial performance indicators, shareholders return and other product market indicators (Richard et al., 2009). Scholars have laid utmost importance on even some non-financial factors to measure organizational performances such as growth perspectives and customer perspective (Kaplan et al., 2010). This research is specifically conduct by amalgamating certain non-financial factors to identify the impact of HR practices on organizational performances, employee productivity and turnover intentions.

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HR is a broad term, which has multiple measures. These measures are study in the hindsight of meta-analyses. The sole emphasis of this study is on identifying HR practices that specifically effect the interests and performance of internal stakeholder such as employees. Further, the performances will be analyze through productivity levels and intent to leave the organization.

According to meta-analytical techniques,<sup>3</sup>all the previously conducted empirical research studies are gathered and analyzed. The analysis requires some further detailed statistical analysis to determine the relationships of the respective variables under study. For example, HR involves many practices, which are incorporate by organizations differently. This technique will help in analyzing the most significant practices that are adopt by organizations to measure their performances.

The reasons for carrying this research include; firstly, organizational performance measures largely include financial practices such as shareholders return, net profit, retained earnings etc. This study will specifically emphasize only on non-financial measures for optimal managerial results. Secondly, organizational affairs affect both internal and external stakeholders. However, the propensity of interest of these entire stakeholders vary according to the extent of their association with the organization. This study only targets the internal employees of an organization because HR practices are directly influencing them. Therefore, the contribution of this study is conducting a meta-analytical approach on internal stakeholder specifically employees of an organization to study HR practices through non-financial measures of performance, productivity and employees intention to leave.

The research objectives of the study aims at exploring the following:

- An effect of HR practices on overall organizational performance.
- An effect of HR practices on productivity of employees.
- An effect of HR practices on turnover intentions.

## **Literature Review**

### *Organizational Performance*

Organizational performance can be analyze from both financial and non-financial factors (Wood et al., 2012; Paauwe, 2009). The non-financial measures of performance can be categorize into several components. These measures include employee turnover, employee performance, innovation and employee relations (Lee & Tseng, 2011; Sun et al., 2007). Another study measured organizational performance through organizational innovation, which is further categorize into exploration and exploitation (Findikli et al., 2015). These studies clearly depict the role of internal stakeholders (employees and managers) in measuring an organizational performance.

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<sup>3</sup>Initially meta-analysis did not comprise of quantitative procedures for interpreting results but instead scholars conducted narrative reviews; i.e. short summaries of the studies considered relevant.

HR practices are traditionally divide into universalistic approach, contingency approach and configurational approach (Delery & Doty, 1996). According to the universalistic approach, HRs tend to have a direct impact on performances through various practices followed by the department. The contingency approach also confirms a relation between HR and performances through a moderating role of some integral practices. The configurational approach emphasizes on certain practices of HR that act collectively to determine consistency in an organizational performance. These approaches clearly customize the relation that exists between these two variables under study.

### *Employee Productivity*

An organizations success or failure is greatly determine by the employees that work to improvise on the overall productivity. According to Koopman et al. (2002), employee productivity is the most influential way to determine organizational strength and its sustainability. There is a clear distinction between performance and productivity. Scholars consider performance to be a broader measure that includes other factors such as effectiveness, efficiency and quality indicators (Ricardo & Wade, 2001). So, productivity can be consider as a performance measure that affects the efficiency and effectiveness of an organization (Bhatti & Qureshi, 2007).

According to Berry et al. (2012), presentism plays a vital role in reducing an employee's productivity by being available at the work place but not performing well. Productivity and effectiveness are two distinct domains that are greatly influence by HRM innovations. Some important factors that affect them include autonomy and technological advances (Lee et al., 2017).

The existing literature takes into account financial measures to be an authentic source of measuring organizational performance. In order to overcome this gap only the non-financial measures were study in this research in order to determine its impact on the organizational performance. Amongst these non-financial measures, internal stakeholder's perspectives were incorporate in this research study. Furthermore, HR department comprise of a set of practices, which vary according to different organizational policies. This research highlighted the most commonly used HR practices, which included recruitment, teamwork, compensation, communication and training.

### *Turnover Intentions*

Turnover intentions can be categorize into either voluntary or involuntary intentions. A voluntary turnover influences an employee to quit the organization with his or her own free will and without any pressure from internal or external influencers. It might be due to any internal or external factors. On the other hand, involuntary turnover is when an employee is terminate from his designation due to personal conflicts, low performance or any other reason that bothers the employer (Booth & Hamer, 2007). According to Frenkel et al. (2013), both HR and line, managers have a vital role in influencing an employee's turnover intentions. This is because these managers greatly leave an

impact on the employee's job satisfaction levels.

All existing studies have identified several reasons for a high turnover rate but have not highlighted the practices, which can eradicate the problem. According to Long et al. (2017), HR practices can greatly influence an employee turnover rate for an organization. These practices can include employee's career development, training, performance appraisals and compensation schemes.

### **Methodology**

A meta-analytical approach was conducted, which systematically compiles the results of all the previous studies performed by scholars. Studies were selected based on the variables of HR practices, organizational performances, employee productivity and turnover intentions. Therefore, meta-analytical procedures do not require collection of data from participants.

#### *Sample*

As a meta-analytical approach is used in this study, the sample size comprises of articles. The sample size included 55 articles incorporating the studied variables. The relevant articles are study since the time these concepts were vaguely developed. All the relevant articles since the year of 1990 onwards are included in the database for further analysis.

#### *Collection and Classification of Articles*

The specific article collection for this study required amalgamating both published and unpublished works. The databases used for published collection purposes comprise of Science Direct and Jstore. Furthermore, the databases used for unpublished collection purposes include Pro Quest and SSRN.

In order to follow a stringent classification procedure a quantitative synthesis technique was adopted. The first step comprised of classifying the articles into financial and non-financial studies. After short-listing only the non-financial studies, further the studies were arranged according to the viewpoints of internal and external stakeholders. Proceeding all these studies were analyzed and certain common themes and sub-themes were derived from them. Besides this classification, the studies were also selected on the basis to ensure there were only empirical studies and not conceptual ones. Therefore, the total sample of articles for organizational performance are 24, employee productivity have 9 articles and turnover intentions have 22 articles. This makes a combined sample size of 55 articles.

#### *Procedure for Coding*

Coding procedure adopted for the meta-analytical technique include specifying the measures

of each selected variable. Furthermore, the scales measuring every characteristic were identify such as a continuous scale or a categorical scale.

### *Effect Sizes*

Effect sizes are consider an integral root of meta-analytical techniques. It involves a rigorous quantitative analysis of the individual studies been short-listed for the research. There are three types of effect sizes including R index, D index and Odd ratio. This study makes use of R index effect size because a relationship between two continuous variables is aim to be measured. The procedure followed for calculating the effect sizes includes the correlation definition of the study, coding methodology such as a regression equation used to determine the correlation. Moreover, the software used for conducting this research is Comprehensive Meta-Analysis that enables to analyze data effectively and efficiently. The measures observed included correlational values, sample sizes, Q-statistics, effect sizes and heterogeneity indices.

Further analysis was conduct through a Fisher Z metric, which enables to calculate the standard error through transforming the correlation. While making calculations for the standard error there are, two factors kept into consideration including error of correlation and error of sample size. Those studies with a larger correlation have an inverse relation with the standard error that further affects the weighted averages. Moreover, Fisher Z metric is calculate by the following formula:

$$F i s e r Z = 0.5 * \frac{1 + Correlation}{1 - Correlation}$$

### *Definitions*

#### • Human Resource Practices

Human resource have been classify as a set of practices that include selection, teamwork, communication, compensation, training, stability and status reduction (Camps & Luna, 2012).

#### • Organizational Performance

The extent to which a department is successful in achieving its planned targets or stated objectives through efficiency and effectiveness (Asiaei & Jusoh, 2015).

#### • Turnover Intentions

The intention of employees to consciously or willing fully leave an organization (Issa, Ahmad, & Gelaidan, 2013).

- Employee Productivity

The amount of work completed by an employee in a particular amount of time (Ricardo & Wade, 2001).

## Results

### *Correlations and Fisher Z Metrics*

After analyzing the coding sheet for organizational performance, it can be determine there is a significant amount of variations in the sample size selected as given in Table 1. The standard error calculated for organizational performance includes both sample size and correlational considerations. The variations in the sample size is determine through a greater correlational value of 0.48, with a relatively lesser standard error of 0.105. Furthermore, as shown in the table a lesser correlational value of 0.18 will ultimately enhance to a greater standard error value of 0.083. Standard error is calculate by the following formula:

$$SE = \sqrt{(1 - \text{correlation}^2) * SE \text{ Fisher } Z}$$

The effect on standard errors is analyze through Fisher Z metric based on the sample size considerations as given in Table 1. The statistical analysis of these standard error show an increasing trend of the correlational values according to the largest standard error value of 0.084 and the smallest standard error value of 0.046. This analysis can also determine that if the studies selected have a standard error of zero, then the correlational values and Fisher Z metrics for the sample will be the same. Fisher Z metric is calculate by the following formula:

$$SE = \frac{1}{\sqrt{N-3}}$$

Table 1  
*HR Practices and Organizational Performance*

Study Name	Coding	Sample Size	Correlation			Fisher Z		
	Correlation		Correlation	Std. Error	Variance	Fisher Z	Std. Error	Variance
RS007	0.460	145	0.460	0.066	0.004	0.497	0.084	0.007
RS008	-0.130	815	-0.130	0.035	0.001	-0.131	0.035	0.001
RS010	0.170	1084	0.170	0.030	0.001	0.172	0.030	0.001
RS012	0.550	400	0.550	0.035	0.001	0.618	0.050	0.003
RS013	0.439	198	0.439	0.058	0.003	0.471	0.072	0.005
RS024	0.330	830	0.330	0.031	0.001	0.343	0.035	0.001
RS025	0.460	140	0.460	0.067	0.005	0.497	0.085	0.007
RS028	0.126	965	0.126	0.032	0.001	0.127	0.032	0.001
RS032	0.725	260	0.725	0.030	0.001	0.918	0.062	0.004
RS033	0.810	330	0.810	0.019	0.000	1.127	0.055	0.003
RS034	0.171	312	0.171	0.055	0.003	0.173	0.057	0.003
RS042	0.600	138	0.600	0.055	0.003	0.693	0.086	0.007
RS046	0.550	320	0.550	0.039	0.002	0.618	0.056	0.003
RS047	0.221	205	0.221	0.067	0.004	0.225	0.070	0.005
RS052	0.170	2512	0.170	0.019	0.000	0.172	0.020	0.000
RS056	-0.030	301	-0.030	0.058	0.003	-0.030	0.058	0.003
RS057	0.180	226	0.180	0.065	0.004	0.182	0.067	0.004
RS086	0.140	589	0.140	0.040	0.002	0.141	0.041	0.002
RS087	0.010	102	0.010	0.100	0.010	0.010	0.101	0.010
RS094	0.346	165	0.346	0.069	0.005	0.361	0.079	0.006
RS099	-0.260	171	-0.260	0.072	0.005	-0.266	0.077	0.006
RS100	0.563	226	0.563	0.046	0.002	0.637	0.067	0.004
RS103	0.150	52	0.150	0.140	0.020	0.151	0.143	0.020
RS106a	-0.100	266	-0.100	0.061	0.004	-0.100	0.062	0.004

Furthermore, Table 2 shows correlational and Fisher Z metrics values for the relationship between employee productivity and HR practices.

Table 2  
*HR Practices and Employee Productivity*

Study Name	Coding		Correlation			Fisher Z		
	Correlation	Sample Size	Correlation	Std. Error	Variance	Fisher Z	Std. Error	Variance
RS004	0.18	136	0.180	0.084	0.007	0.182	0.087	0.008
RS006	0.33	2174	0.330	0.019	0.000	0.343	0.021	0.000
RS011	0.19	61	0.190	0.127	0.016	0.192	0.131	0.017
RS017	0.457	139	0.457	0.068	0.005	0.494	0.086	0.007
RS020	0.4	206	0.400	0.059	0.003	0.424	0.070	0.005
RS030	0.457	139	0.457	0.068	0.005	0.494	0.086	0.007
RS093a	0.154	1358	0.154	0.027	0.001	0.155	0.027	0.001
RS097a	0.11	416	0.110	0.049	0.002	0.110	0.049	0.002
RS105	0.28	135	0.280	0.080	0.006	0.288	0.087	0.008

According to Table 3, the sample size considerations for turnover intentions affected through HR practices vary between minimum 152 employees and maximum 6625 employees.

Table 3  
*HR Practices and Turnover Intentions*

Study Name	Coding		Correlation			Fisher Z		
	Correlation	Sample Size	Correlation	Std. error	Variance	Fisher Z	Std. error	Variance
RS039	0.17	6625	0.17	0.01	0.00	0.17	0.01	0.00
RS043	-0.13	152	-0.13	0.08	0.01	-0.13	0.08	0.01
RS051	-0.59	189	-0.59	0.05	0.00	-0.68	0.07	0.01
RS055	-0.01	1553	-0.01	0.03	0.00	-0.01	0.03	0.00
RS061	-0.59	189	-0.59	0.05	0.00	-0.68	0.07	0.01
RS062	-0.17	1318	-0.17	0.03	0.00	-0.17	0.03	0.00
RS069	-0.12	187	-0.12	0.07	0.01	-0.12	0.07	0.01
RS088	0.17	1755	0.17	0.02	0.00	0.17	0.02	0.00
RS106	-0.28	266	-0.28	0.06	0.00	-0.29	0.06	0.00

### *Q Statistics*

In order to determine homogeneity in the correlations of previous studies a Q statistical analysis is adopt. According to this analysis, the fixed and random effect models are study through Z values. According to Table 4, the fixed effect model for common effects is 25.512 and the random effect model for true effects is 5.232. These evaluations determine that the null hypothesis for these models are zero. Moreover, the P-value shows a significant positive effect between HR practices and organizational performance measures.

Table 4 further elaborates on the level of dispersion between the effect sizes through a degree of freedom depicting certain amount of heterogeneity. According to the significant P value, there is a certain amount of dispersion prevalent within the effect sizes of these studies. Another analysis of the Q value also determines similar results with a value of 829.60 being significantly greater than the value 23.

Lastly, Tau square statistics and I square are calculate to measure the level of observed variance. The results determine that there is a significant amount of observed variance of 97.2% due to real differences. There is also remaining 2.8% of observed variance due to the random error. This analysis is further support by the Tau square statistics of 0.084 showing prevalent variance between studies.

Table 4

#### *Q Statistics for HR Practices and Organizational Performance*

	Test of null (2-Tail)		Heterogeneity				Tau-squared			
	<i>p</i>		<i>Q</i>	<i>p</i>		<i>Tau</i>	<i>Std.</i>		<i>Variance</i>	<i>Tau</i>
	<i>Z value</i>	<i>value</i>	<i>value</i>	<i>df (Q)</i>	<i>value</i>	<i>I squared</i>	<i>Squared</i>	<i>Error</i>		
Fixed	25.512	0.000	829.60	23.00	0.000	97.228	0.084	0.036	0.001	0.289
Random	5.232	0.000								

According to Table 5, the relation between HR practices and employee productivity is observed through Q statistics that shows a Z-value of 18.8 which, denotes the effect sizes of the fixed effect model to be equal to zero; hence, supporting the null hypothesis. Furthermore, the true effects sizes are depicted through the random effect model value of 6.09. Furthermore, this analysis is supported by the P-value of heterogeneity, which, determines a significant amount of dispersion between the given effect sizes as supported by a Q statistics of 59.63. Lastly, Tau square and I square confirm the variance between the effect sizes. According to I square statistics, 86.5% of the variance between the effect sizes is due to real difference and 12.5% of variance is due to random differences. In addition, the Tau square supports this analysis by showing that 0.016 variance exists in the studies.

Table 5

*Q Statistics for HR Practices and Employee Productivity*

	Test of null (2-Tail)		Heterogeneity				Tau-squared			
	<i>Z</i> <i>value</i>	<i>p</i> <i>value</i>	<i>Q</i> <i>value</i>	<i>df</i> <i>(Q)</i>	<i>p</i> <i>value</i>	<i>I</i> <i>squared</i>	<i>Tau</i> <i>Squared</i>	<i>Std.</i> <i>Error</i>	<i>Variance</i>	<i>Tau</i>
<b>Fixed</b>	18.80	0.000	59.631	8.00	0.000	86.584	0.016	0.013	0.000	0.125
<b>Random</b>	6.090	0.000								

Table 6 shows the fixed effect and random effects model with Z values of 6.786 for fixed and 1.76 for random effects of turnover intentions. However, the P-values for both these models show diverse effects. The P-value shows a diverse relation between HR practices and turnover intentions. Fixed effects model has a significant value determining a positive relation between the variables. Whereas, the random effects model determines that there is no significant relation between HR practices and its impact on turnover intentions. The Q value of 255.768 shows a great amount of observed dispersion between the effect sizes. The extent of observed dispersion is measured through Tau square statistics and I square statistics. The results of I square show that 95% of the variance is due to the real differences and the remaining is due to the random error. In addition, the Tau square supports this analysis by showing that variance exists between these studies.

Table 6

*Q Statistics for HR Practices and Turnover Intentions*

	Test of null (2-Tail)		Heterogeneity				Tau-squared			
	<i>Z</i> <i>value</i>	<i>p</i> <i>value</i>	<i>Q</i> <i>value</i>	<i>df (Q)</i>	<i>p</i> <i>value</i>	<i>I</i> <i>squared</i>	<i>Tau</i> <i>Squared</i>	<i>Std.</i> <i>Error</i>	<i>Variance</i>	<i>Tau</i>
Fixed	6.786	0.000	255.768	12.00	0.000	95.30	0.029	0.018	0.000	0.172
Random	1.76	0.07								

### Findings

The findings depict that HR practices tend to have a significant positive impact on the overall organizational performance. There seems to be a reasonable amount of possibility for achieving the test statistics as the null hypothesis is statistically significant. Moreover, the sample size of employees highlighted great amounts of diffusion between the effects sizes incorporated in this study.

The results further determine that HR practices have a significant positive impact on the productivity level of employees working in the organization. The relation between HR practices and organizational performance also determines similar results accepting the null hypothesis and achieving the required test statistics. Furthermore, the heterogeneity statistics of employee productivity show a great amount of diffusion between the effects sizes incorporated in this study. Therefore, the results collectively show that the practices adopted by the HR department do play a vital role in influencing an employee's productivity levels.

Moreover, unlike the other variables HR practices have an inverse relation with an employee's turnover intentions. The results determine that there are less likely chances of achieving the observed test statistics for turnover intentions, as the null hypothesis is statistically insignificant. This concludes that HR practices can negatively influence an employee who might leave the organization.

### Discussion

HR department within an organization determine some effective and efficient policies and procedures that determine the ways employees will adapt to the organization. Amongst the various measures of HR, some of the most effective ones includes recruitment, training, communication, compensation, teams, stability and status reduction (Pfeffer, 1998). This study specifically aims to

keep into consideration the interests of internal stakeholders of an organization, as they are the ones, which are directly influence by the practices that collectively determine success or failure.

A meta-analytical technique is used which enables to highlight certain HR practices that tend to influence other variables including organizational performance, employee productivity and turnover intentions. The focus of this study was on gathering articles from the developing countries of the world including Pakistan, Sri-Lanka and Bangladesh. The non-financial measures of the variables under study including efficiency, productivity, quality and consistency are consider an integral tool for analyzing employee and organizational performance (Ricardo & Wade, 2001; Ling & Hung, 2010). Therefore, collectively organizational performance, employee productivity and turnover intentions were monitor in order to analyze the overall effectiveness and efficiency of the financial departments.

### Implications

This study has the potential to benefit the HR managers of an organization largely. Firstly, it will enable the HR managers to analyze the most influential practices within their department that greatly influence the organizational performance based on the corporate trends. Secondly, this study will enable the HR managers to also identify those practices or factors that negatively influence an employee overall performance leading towards turnover. Thirdly, this study emphasizes on an alignment between the HR and line managers to gain ultimate success within the organizational environment.

Some recommendations for further researchers include firstly, analyzing these HR practices with some mediating or moderating variables such as organizational citizenship behavior. Even some antecedents can be incorporate in the study for further analysis. Lastly, a larger sample size (total number of studies) in meta-analytical techniques can be adopt to analyze the heterogeneity appropriately.

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# RETURN AND RISK BASED PERFORMANCE OF CONVENTIONAL AND ISLAMIC EQUITY FUNDS: A COMPARATIVE STUDY FROM PAKISTAN

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## Abstract

*This research aims to examine the risk and return based performance of conventional and Islamic equity funds in Pakistan. The data of Islamic and conventional equity funds were analyzed for the period 2008 to 2014. Both risk adjusted and non-risk adjusted measurement techniques were applied. Beta and standard deviations are used for the measurement of risk. The findings of this research reveal that Islamic equity funds outperform their conventional counterparts. Overall Islamic funds are earning higher return than conventional funds whereas they have less risk than conventional funds and the KSE 100 Index. Both funds were found to have the same level of diversification. This study recommends that Islamic equity funds may be used for the purpose of hedging the risk under adverse economic situations.*

**Keywords:** Islamic Funds, Conventional Funds, Islamic Finance, Risk and Return, Performance Measurement.

**JEL Classification:** G200

## Introduction

Islamic investment is different from conventional investment as receiving and paying of interest is prohibited in the former. A Muslim may invest in the stocks which are included in Islamic mutual fund. These funds are like the conventional mutual funds which allow investors, who have shortage of information, expertise or time to administer their assets to flourish from the return of global equity market. Islamic equity funds were not very popular in 1990s till they were approved by Shari'ah scholars as Islamic investment instruments. There is substantial interest amid Muslim investors

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in the Middle East. In spite of its attractiveness investigation on the “risk and return” characteristics of Islamic equity fund is very limited.

The current study focuses on Islamic equity funds and conventional equity funds. Islamic investment is the investment which is permissible according to the Islamic Sharia Board, i.e. which is close to the “Quran” and “Sunnah” (Zaheer & Hasan, 2001). Shanmugam and Zahari (2009) concluded that Islamic investment should fulfill the five main principles (i) prohibition of interest (ii) it should not be excessively uncertain (iii) it should not be speculative (iv) there should be risk and return sharing and (v) investment should not be in unethical industries, i.e. gambling, alcohol, etc. They exhort the Muslim investors not to make investment in futures, options, derivatives and speculative business. Muslims should follow the main five principles of Islamic finance.

For the Islamic equity fund’s investment the criteria are set by the “Dow Jones Shariah Supervisory Board”. The following are the criteria for investment in any company that has:

(Total debt/Twelve months’ average market capitalization) <33%

(Interest bearing securities plus Cash/Twelve months’ average market capitalization) <33%

(Accounts Receivable/Twelve month’s average market capitalization) <33%

The rule of 33% seems to be arbitrary because Derig and Marzbans (2008) argued that the rule of 33% is based on the Hadith of Prophet Muhammad (PBUH) that, “any one of you should not donate more than 1/3rd from his wealth as a charity”. But the authors do not create any link between the rule and existing Islamic investment selection criteria. He argued that the authors take the Hadith out of context.

The sections of this paper are as follows: (i) the next section will focus on the previous studies (ii) after literature review we will discuss the sample and methodology (iii) then results will be discussed and at the end (iv) we will report our conclusions.

### **Review of previous studies**

Abdullah et al. (2007) studied during the period 1992 to 2001 the performance evaluation of Malaysian Islamic mutual trust funds. He compared the Islamic funds with their counterpart conventional funds by taking the sample of 65 equity type of mutual funds and also made a comparison of government and non-government mutual funds. His results show that during the period of financial crisis of 1997 to 1998 Islamic funds are performing better than their counterpart conventional funds and govt. funds are performing better than non-govt. funds. Islamic equity funds are considered less risky as compared to their conventional counterparts and government funds are considered less risky than non-government funds. He stated that government funds have large opportunity for diversification

<sup>4</sup> Different screening criteria used by the different Islamic index providers, like Dow Jones, Standard and Poor’s, FTSE, KSE KMI, and MSCI etc. Ashraf (2013) investigated that this different screening criteria has no effect on the performance of Islamic

stocks.

in government issued securities. Islamic funds are less risky during the period of financial crisis and they are performing better. He reported that overall the market is outperforming both Islamic and conventional funds.

Anwar, et al. (1997) during the period of 1992 to 1995 analyzed the mutual funds' performance of Malaysia and reported that the performance of Islamic funds is better than the market of Malaysia. He also reported that managers of mutual funds are not updated about the timing of the market. He used the Mazuy and Treynor given model for the purpose of investigation of market timing ability of mutual fund managers.

Shamsher et al. (2000) investigated the performance of 41 mutual funds in Malaysia for the period 1995-99. He studied the performance of passive funds management vs. active fund's portfolio performance management. He reported that the performance of both types of funds is below the market. He also reported that the performances of both passive and active funds are not significantly different. The active funds are not performing better than the passive funds. He reported that active fund managers do not time the market.

Hayat and Kraeussl (2010) make analysis on 145 Islamic equity type mutual funds for the period 2000 to 2009. They took sample from Malaysia, Asia Pacific, Indonesia, America, and Middle East. They used risk-adjusted performance measures for Islamic equity funds; their period also covers the financial crisis of 2008-09. They reported that during the period of financial crisis Islamic fund's performance is better than that of conventional benchmark and Islamic benchmark. Before the crisis the performance of Islamic funds is lower than the conventional benchmark and Islamic benchmark. They also found the risk of Islamic funds less risky than that of the conventional and Islamic benchmarks. But the fund managers are not actively involved in timing the market. Mutual funds are not diversified. Rao et al. (2015) by using risk-adjusted performance measurement technique analyzed that Pakistani mutual funds under performing from it benchmark like all over the world. Gohar et al. (2011) measured the performance of Pakistani mutual funds by dividing the period with 2008 crisis and analyzed that both Islamic and conventional mutual funds are not beating the benchmark. Islamic funds are less risky.

For the measurement of return and risk in this paper we use the technique of risk adjusted performance measures. Jensen<sup>5</sup> (1968) gave a model of CAPM for the measurement of riskadjusted return. Similarly Treynor<sup>6</sup>, M2<sup>7</sup>, and Information ratios<sup>8</sup> are used for the measurement of performance.

<sup>5</sup> Jensen (1968) proposed his model for the measurement of excess return from risk free return of the portfolio in proportion to the excess return earn by the market.

<sup>6</sup> Sharpe (1966) gave his model for the performance measurement of the portfolio.

<sup>7</sup> Franco Modigliani and Leah Modigliani (1997) proposed their model which shows the performance in percentage form.

<sup>8</sup> Information Ratio showed that are the fund managers having updated market information or not?

Next pattern of this paper is as follow: (i) in the next section we will give the sample and methodology detail. (ii) After methodology section we discuss the results. (iii) Then we will present the conclusion of this paper (iv) limitation and references in the last.

### Research Methodology

This research attempts to examine the equity type of mutual funds. We took all the prices data of mutual funds from the website of Mutual Funds Association of Pakistan. There are a total of 178 open- ended mutual funds available on the Mutual Funds Association of Pakistan website of which 36 funds are of equity type. We took 16 equity funds as sample whose date of inception falls before or on January 01, 2008. We divided our study into three time periods (i) 2008 to 2009 crisis period and (ii) 2010 to 2014 post- crisis period and (iii) 2008 to 2014 over all period. Rao et al. (2015) and Gohar et al. (2011) measured the performance of Pakistani mutual funds by dividing the period with 2008 crisis. We categorize our sample into two groups (i) Islamic Equity Funds (ii) Conventional Equity Funds. We took the month end prices data of Islamic Equity Funds and conventional equity funds. We adjusted our data for dividends. For risk free rate of return we took annualized data of 3-months Treasury bill then made in monthly basis from the State Bank of Pakistan sources.

The equity and conventional funds' performance is evaluated against the KSE 100 Index Benchmark. We are unable to use the KMI 30 Index<sup>9</sup> as a Benchmark because it started in November 2008 but our study starts from January 01, 2008. The Detail of Benchmarks and the year of inception are given in the table 1 and 2 respectively.

Table 1  
*Categories of Funds & Benchmarks*

<b>Funds</b>	<b># of Funds</b>	<b>Benchmark</b>
Islamic	7	KSE 100 Index
Conventional	9	KSE 100 Index
<b>Total</b>	<b>16</b>	

<sup>9</sup> KMI 30 Index is started by KSE in November 2009.

Table 2  
*Inception Time Distribution*

Year of Inception	Number of Funds
1990-1994	1
1995-1999	2
2000-2004	5
2005-2008	8
<b>Total</b>	<b>16</b>

*Measurement of performance*

- Return Calculation

$$R_p = \frac{NAV_t - NAV_{t-1} + D_t}{NAV_{t-1}}$$

Where:

$R_p$  = Monthly returns of a Portfolio.

$NAV_t$  = Net Asset Value at the end of the month.

$NAV_{t-1}$  = Net Asset Value at the start of the month.

$D_t$  = Dividend during the month

- Without risk adjusted performance measures

First we compare the performance of mutual funds without risk adjusted measurements. Here we compare the return of Islamic equity funds with the conventional funds and their respective benchmarks.

- Risk Adjusted Measures of Performance

(i) Rewards-to-Variability Ratio (RVAR) or Sharpe Ratio

Sharpe ratio measures relate return to the total risk. It is used in fact with a portfolio in which unsystematic risk has been diversified away.

If  $R\text{-VAR-P} > R\text{-VAR-M}$  this means your portfolio beat the market

If  $R\text{-VAR-P} < R\text{-VAR-M}$  this mean your portfolio underperformed the market

$$\text{Sharpe measure} = \frac{\bar{R}_i - R_f}{SD_i}$$

Where:

$\bar{R}_p$  = Average return of the portfolio over the period of measurement.

$R_f$  = Risk Free Rate of Return on the Govt. treasury bills.

$SD_p$  = Standard Deviation of the portfolio returns during the period of measurement.

- Rewards-to-Volatility Ratio (RVOL) or Treynor Ratio

This Treynor measure relates returns to systematic risk as calculated by the security beta. It is an appropriate measure for single security as well as for portfolio.

$$\text{Treynor measure} = \frac{\bar{R}_i - R_f}{\beta_i}$$

Where:

$\beta_p$  = beta of the portfolio during measurement period

If  $R\text{-VOL-P} > R\text{-VOL-M}$  this means our portfolio beat the market

If  $R\text{-VOL-P} < R\text{-VOL-M}$  this means our portfolio underperformed the market

- M2 (Modigliani and Modigliani)  
 $M2 = R_f + \sigma_m / \sigma_p + (R_p - R_f)$

A newer measure of risk adjusted performance is called M2, named after its developers, Franco Modigliani and Leah Modigliani.

It is return adjusted for volatility that allows returns between portfolios to be compared.

Since it is measured in percentage terms, it is easier to understand than Sharpe measure, which is not intuitive.

M2 equates the volatility of the portfolio whose performance is being measured with the market.

Jensen's Alpha Return Measure

Michal Jensen (1968) develops this ratio for the measurement of excess return of a fund from its benchmark.

$$\alpha_p = [R_p - R_f] - \beta_p [R_m - R_f] + \varepsilon_p$$

Where:

$[R_p - R_f]$  = Excessive returns from fund "p" at time "t" in Pakistan during measurement period

$[R_m - R_f]$  = Excessive returns from market "m" at time "t"

<sup>10</sup> Sharpe considered that the total risk and it used standard deviation as the divisor of the formula.

<sup>11</sup> Treynor used beta for risk proxy the systematic risk only he assumed that all the portfolios are well diversified.

<sup>12</sup> Measures the performance in percentage

- Information Ratio

It is also termed as an “Appraisal Ratio”. It is a risk adjusted measure of performance based on the risk and return. It measures the active return that has been earned by a portfolio manager relative to risk. It is measured by;

$$\text{Information Ratio} = ((\text{Portfolio Return}-\text{Benchmark return})/(\text{Stdev}(\text{Portfolio Return}-\text{Benchmark return})))$$

- Results and discussion

Results will be presented based on two different measures of risk. Without risk adjusted monthly return’s performance measures.

Table 3

*Non-risk adjusted performance measurement Monthly returns and risk*

Period	Funds	$r_i$	$\sigma_i$	$\beta_i$	$r_f$
2008-2009	Islamic	(0.002589)	0.089081	0.759041	0.015852
	Conventional	(0.009019)	0.096366	0.806030	
	T-Statistic	0.240017	-	(1.754164)*	
	P-Value	0.811397	-	<b>0.086091</b>	
	KSE 100 Index	(0.008717)	0.112476	1.000000	
2010-2014	Islamic	0.004992	0.052830	0.679947	0.009255
	Conventional	0.006228	0.056265	0.714091	
	T-Statistic	(0.124052)	-	(3.426827)**	
	P-Value	0.901526	-	<b>0.000844</b>	
	KSE 100 Index	0.021839	0.047784	1.000000	
2008-2014	Islamic	0.002826	0.064767	0.716401	0.011140
	Conventional	0.001872	0.069797	0.766861	
	T-Statistic	0.091837	-	(4.857008)**	
	P-Value	0.926968	-	<b>0.000010</b>	
	KSE 100 Index	0.013109	0.072949	1.000000	
R <sub>i</sub> shows monthly return on funds. $\sigma_i$ represents standard deviation of monthly return. $\beta_i$ showing the beta of the mutual funds. R <sub>f</sub> is showing the monthly risk free rate of return. T-Statistics the test for the comparison is Islamic and Conventional portfolios. ** mean significance at 5% * mean significance at 10% level of significance. There is no difference between the return of both funds but conventional portfolios are more risky than Islamic portfolios during crisis, after crisis and overall period.					

Table 3 presents the performance of mutual fund. During the period (2008 to 2009) the financial crisis Islamic equity funds are performing better than the conventional equity funds and better than market also. Risk in Islamic equity funds is also lower that is p-value is significant at 10%. This mean even in the period of financial crisis risk in Islamic equity markets is lower as compared to the conventional equity markets. Both funds and market are performing under the risk free rate of return due to financial crisis.

In the period (2009 to 2014) of post crisis the performance of Islamic equity markets is slightly lower but insignificant if we measure at 5% level of confidence interval than the conventional counterpart and it is also lower than the market return and both Islamic and conventional are

performing below the market. But on the other side if we see the betas during the period after the crisis the beta of Islamic fund is lower than its counterpart the conventional fund and market which is significantly low. This means that after financial crisis the risk in Islamic funds is low. The possible reason for this is that Islamic funds are limited<sup>13</sup> for investing in the risky companies like the companies having more debt are not included in the Islamic equity fund. Market is performing better than the risk free rate. Both Islamic and conventional are under the performance of risk free rate.

If we see overall performance of Islamic and conventional funds during the period 2008 to 2014, it can be inferred that both funds are performing below market. If we the beta which is less than one of both funds but the beta of Islamic equity fund is less than that of conventional counterpart this means that overall risk in Islamic funds are less than the conventional funds and market. Market is performing better than the than the risk free rate but both Islamic and conventional are under performing the risk free rate of return.

Table 4  
*Risk Adjusted Performance Measurement*

Period	Funds	Sharpe	Treynor	Jensen's Alfa	M2	Information Ratio
2008-2009	Islamic	(0.207013)	(0.024295)	0.000208	0.010037	0.164887
	Conventional	(0.258083)	(0.030855)	(0.005067)	0.002653	(0.007670)
	T-Statistic	1.906506*	0.244904	0.196919	0.275648	15.63169**
	P-Value	<b>0.062800</b>	0.808804	0.845713	0.785427	<b>0.00001</b>
	KSE 100 Index	(0.218439)	(0.024569)	-	0.001283	-
2010-2014	Islamic	(0.080684)	(0.006269)	(0.012819)	0.014037	(0.379647)
	Conventional	(0.053790)	(0.004238)	(0.012013)	0.014721	(0.333742)
	T-Statistic	(2.69914)**	(0.203804)	(0.080927)	(0.068635)	(5.51492)**
	P-Value	<b>0.009096</b>	0.839846	0.936513	0.945901	<b>0.00001</b>
	KSE 100 Index	0.263366	0.012585	-	0.031839	-
2008-2014	Islamic	(0.128359)	(0.011604)	(0.009724)	0.014089	(0.236427)
	Conventional	(0.132779)	(0.012085)	(0.010778)	0.012324	(0.249315)
	T-Statistic	0.425386	0.046259	0.101402	0.169967	1.88590*
	P-Value	0.671169	0.963206	0.919355	0.865296	<b>0.061055</b>
	KSE 100 Index	0.026997	0.001969	-	0.023109	-
** indicates significance at 5% and * indicates significance at 10%. During crisis and after crisis Islamic funds are performing better than conventional funds on basis of sharpe measures. During the period of crisis Islamic funds are earning more active return as shown by information ratio. After crisis period conventional funds are earning more active return. Overall at 10% level of significance Islamic funds are earning more active return than conventional funds. But on the basis of Treynor, Jensen's Alfa and M2 there is no significance difference between the performance of Islamic and Convention portfolios.						

<sup>13</sup> The diversification of Islamic portfolios is limited because fund managers can select only those stock which fulfill the criteria of Islamic sharia standard board.

Table 4 reported the results of risk adjusted ratios for both Islamic and conventional stocks. During the period of financial crisis (2008 and 2009) if we see the Sharpe ratio all the funds Islamic, conventional and market is going to be negative but Islamic funds are better than the conventional funds significantly at 10% confidence interval. Islamic equity fund are performing better than its counterpart the conventional and market during the period of crisis in the measurement of Treynor, Jensen's Alfa, M2 and Information Ratio. On the basis of information ratio in which we compared the Islamic with conventional funds we that they are outperforming the market. On the basis of Jensen's Alfa the results of Islamic funds are positive and the results of conventional funds and market is going to be the negative.

During the period of post crisis 2010 to 2014 Market is outperforming the both Islamic and conventional stocks. Conventional stocks are performing slightly better than the Islamic stocks but insignificantly on the basis of Sharpe, Treynor, Jensen's Alfa, M2 and Information Ratio. This mean after the crisis, investment managers were not able to assess the future market behavior.

For the overall period from 2008 to 2014 market is outperforming the both Islamic and conventional stock which are showing negative value during overall period on the basis of Sharpe, Treynor, Jensen's Alfa and Information Ratio. So here if we see the overall period the Islamic stocks are performing better than the conventional stocks slightly but insignificantly if we compare the performance at 5% level of significance.

Table 5

*Level of Diversification of Funds*

Period	Funds	r	r <sup>2</sup>
<b>2008-2009</b>	Islamic	0.958382	0.918495
	Conventional	0.940779	0.885065
	T-Statistic	0.657134	1.248002
	P-Value	0.514391	0.218347
	KSE 100 Index	1.000000	1.000000
<b>2010-2014</b>	Islamic	0.615007	0.378233
	Conventional	0.606460	0.367794
	T-Statistic	0.639832	1.047715
	P-Value	0.523543	0.296918
	KSE 100 Index	1.000000	1.000000
<b>2008-2014</b>	Islamic	0.806902	0.651090
	Conventional	0.801490	0.642387
	T-Statistic	0.520875	0.837771
	P-Value	0.603200	0.403404
	KSE 100 Index	1.000000	1.000000
r means correlation between the return of funds and market, r <sup>2</sup> means co-efficient of determination which is showing the level of diversification. During crisis both funds has high level of diversification and after crisis both funds representing very low level of diversification.			

Table 5 shows the results of level of diversification. For the measurement of level of

diversification of funds we use the R2. During the period of financial crisis level of diversification of both Islamic and conventional stocks is better about 0.918 and 0.885 respectively which shows that funds are well diversified during the period of crisis and about 90% representing the market. That's why in without risk adjusted measures market is performing same as the conventional funds but due to less risk involved in Islamic funds these are better performing than the market and conventional funds. So during the period of crisis the Islamic funds and conventional funds are well diversified.

During the period 2010 to 2014 level of diversification decreased dramatically for Islamic and conventional funds i.e. r-square .37 and .36 respectively. The reason is that during crisis performance of Islamic funds, conventional funds and market is decreasing that's why the r-square is greater during crisis period. This means that the Islamic and conventional funds are not well diversified these are not representing the market. About 37% change in market is representing the Islamic funds and about 36% change in the market is representing the conventional funds.

However the overall period from 2008 to 2014 shows the value of r-square for Islamic and conventional funds at 0.65 and 0.64 respectively. It means that Islamic funds are representing about 65% of the market and conventional funds are representing 64% of the market. So, the Islamic and conventional funds are about to have same diversification level. Because of overall less level of diversification Islamic funds and conventional funds are not performing same as market. So, the fund managers should diversify their funds better as possible that represent the market about too properly. More the diversification level funds will has more its results will close to the market.

### **Conclusion**

The aim of this study is to examine the performance in term of risk and return of Islamic and conventional equity type funds and compare their results with each other and the market. The study is further divided into the period of crisis , after crisis and overall period. Results show that during the crisis period, Islamic equity funds outperform their conventional counterparts and this result is consistent with the results of Abdullah et al. (2007). During the post crisis period, Islamic funds are outperforming their conventional counterparts on the basis of risk adjusted measures.

If we see the risk (beta) during the crisis, Islamic equity funds are seemed to be less risky as compared to conventional equity during period of crisis, post crisis and for the overall period. The diversification level of both Islamic and conventional stocks is the same which is overall about 65%.

This study recommends that Islamic equity funds can be used for the purpose of hedging the risk during the recession periods. This study has important implications for Islamic investment managers and policy makers to promote Islamic equity investments in Pakistan.

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# DETERMINANTS OF SELF-EMPLOYMENT. A SURVEY ANALYSIS OF THE PROVINCE OF THE PUNJAB

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## Abstract

*This paper covers a wide range of literature on self-employment. The focus is on the determinants of self-employment like age, gender, education, marital status. District wise and rural urban demographic differences are also included. The data is borrowed from MICS 2007-08. The results showed that a person who is married, middle aged, having primary level education, resident of Gujranwala, Faisalabad and Lahore have the positive significant and comparatively more chances to be self-employed. Further more robust standard errors are used as a remedy of heteroscedasticity.*

**Keywords:** Self-employment, Logit, Literacy, Gender, Wealth Index, Marital Status, Age, Punjab, Pakistan.

**JEL Classification:** Z000

## Introduction

In recent years there has been a rapid increase in the number of people who choose to be a self-employed in many developing countries (Pietrobelli et al., 2004). Self-employed worker are those workers who, working as their own account or with one or a few partners or in cooperative, hold the type of jobs defined as a 'self-employment jobs' ( i.e. jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced) ILO.

Pakistan has been facing high averagly labor force participation rate 43.73% which is not in equilibrium with the employment opportunities rate. A rough idea that can be made as the averagely employment to population is 49.67% . The population growth rate at 2% and most of the population is of young ones. Causes of this high unemployment rate upto 5.35% are like low literacy rate, less equipped with required technical skills, dualism in society, no professional experience, ethnic or

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demographic discrimination and lack of availability productive employment opportunities Qayyum (2007).

Unemployment in Pakistan also causes due to the high inflation rates, heavy debt burdens and low investment rate. Government has no such measures to secure the investors which enable the job creation process to absorb the labor force in Pakistan. Also there has been high population growth rate at the back of this problem. In the end the structure is not there to promote the employment creation process Maqbool et al. (2013).

Agriculture alone holds 63.39% of the total employment in Pakistan. Services on the other hand the second big sector holds 44.49% of population. Industry is on third number. Except agriculture, industry and services comprises the formal sector of the economy. This formal sector is not capable of creating jobs as per requirement. Public and Private sectors (Formal Sector) contribution towards job creation has been very slow since the last 10 years or so. Kemal suggested that about to 73.5% of the non-agricultural workforce is the part of informal sector. 64% of the total employment is defined as the self-employed in Pakistan (World Bank, 2008).

In such cases self-employment becomes so much attractive for the labor force. Self-employment is not a concern of some region or specific area it is wide spreading phenomenon. Over half of all workers in the developing countries are self-employed (Margolis, 2014). Self-employment is the fast emerging state of employment in Pakistan.

On the provincial basis Punjab is the most populated. The unemployment rate is..... Therefore, self-employment could be the easy to hand option for the work force as well as the policy makers to cure this unemployment. It has the highest percentage in terms of self-employed persons 26.36%. This makes Punjab more attractive to researchers. In urban areas 12.57% of the employment is self-employed and 13.79% of the overall employment of Punjab is self-employed.

#### *Defining determinants of Self-employment*

Blau (1987) used a general equilibrium model to explore why the downward trend in self-employment has reversed in USA. He divided the whole economy into two sectors self-employed and wage employed. There were two factors which lead to this rise in self-employment according to his analysis.

First is positive impact of total factor productivity index in reference to self-employment. Second the notion of tax avoidance. A person who is wage employed his wage reported by the employer but when he is self-employed with a notion to evade tax he undermine his income. This leads to higher self-employment proportions.

Do and Duchene (2008) used Logit model for the Vietnam to construct the empirical understanding regarding the determinants of self-employment. They used the Vietnam Household Living Standard Survey (2004). Male and female respondents were chosen who were between the ages of 16-70 years. All the selected individuals were belonging to urban areas.

The part time workers, agriculture sector employment, multi-job holders and people belonging to rural areas were excluded from the sample. Results suggested that age and house ownership are the positive notions towards self-employment. On the other hand, for female, number of children and marital status played positive and significant role only for female self-employment. The higher education had a negative impact on self-employment decision.

Dawson, Henley and Latreille (2009) had conducted an empirical research on the basis of UK Quarterly based Labor Force Survey form 1991-2001 for the spring season only. This vast range of survey was used to define some other non-tangible determinants of self-employment. These determinants were derived from the questionnaire based response by the individuals who were self-employed at that time. Independence, more money earning potential, flexible work environment, joining family business etc. were the non-tangible determinants defined.

All of these were positive and significant only for male respondents' female found to be ineffective in choosing self-employment due to these reasons. On the whole female self-employed were less in number than males. Age, number of children and ownership to the property lead to more chances of being self-employed.

Higher education's again lead to wage work rather than self-employment. Another new thing in this model was the inclusion of disability as a variable this variable lead to self-employment. The reason was provided that it made them more comfortable in their working conditions.

Svaleryd (2013) checked the labor market impact on the self-employment on the basis of Statistics Sweden, Public Employment Services by using Logit model. The time span was from 1996 to 2007. Labor market is measured through the vacancy rate. Vacancy rate is used as a proxy of labor market the interaction term with high school education. Age variable was used to include the fixed effects.

Different models were run for male and female. The results suggested that the high school education leads to more self-employment with a condition of high vacancy rate for both male and female.

Another interesting feature in this article was the sectoral differences on the self-employment. Two sectors were selected Hotel and restaurants and Business and services. The results showed the positive relationship between self-employment and highly educated individuals

with high vacancy rate. On the other hand in business and services only the less educated individuals were positively correlate with the self-employment at high vacancy rate.

Nikolova and Bargar (2010), they used National Longitudinal Survey of Youth 1997 in defining the determinants of self-employment in USA. Data was selected for the year 2005 all the individuals were selected either they self-employed or self-employed and wage worker at the same time.

All the conventional measures of self-employment were included like, age, gender, education, capital mobility and health. Ethnicity was included through the following dummy variables, Hispanic, Black, Non-Black, and Non- Hispanic.

Probit model suggested that immigrants were more being self-employed with conditions of being male and living in south. This study had deducted the hypothesis that the blacks were not attracted to self-employment.

Brower (2013) has observed the determinants of self-employment in with the collaboration of Tanzania's National Bureau of statistics. Their findings suggested that more years in education will lead to higher earnings from self-employment. Also the firm size plays a significant role if the firms size is large earning possibilities will be higher and lower if firm size is small.

Benz and Frey (2008) were of the view that in European countries people feel more satisfied while being self-employed. They used the fixed effect model and natural experiment techniques. They have measured the job satisfaction using the utility concept as its proxy. Study also concluded that the people dissatisfaction increased with the firm size.

Kaiser and Moller (2011) were considered the database for labor market research (IDA) for Danish residents, time period ranging from 1990 to 1996. Results were self-employed earn less than their counter parts that are in wage employment. Another conclusion was that if the self-employed person switched to wage employment then they were in total loss position.

Yueh (2009) studied the self-employed people in urban China with respect to a very unique idea of social networks. Survey of National Bureau of China (1999) was considered as the data base for the study. Social networking was defined as "In the past year, how many relatives, friends and colleagues or acquaintances did a person exchange the gifts."

So, a person who has extended social networks more likely to be self-employed. Some other factors were credit restrictions, forma sector complications, lack of access to supply networks, credit constraints, etc have positive impacts to self-employment. Economic development is also leads to self-employment because of absorption capacity in the economic activity.

Yuengert (1995) checked the determinants of immigrant self-employment in USA. He observed by using maximum likely hood method that immigrants who were self-employed in their home country are self-employed in immigrant country as well. They also chose to be self-employment to avoid taxes in the immigrant country. Hispanics are more likely to be self-employed in Hispanic concentrated areas. So, he explored a new channel that leads to self-employment for immigrants.

Bruce and Schuetze (2004) used the panel data from the study of Income Dynamics (USA) 1997. As a dependent variable log of hourly wage sector earnings, at the start of 5 years period selected. He found out that as the number of years increased in self-employment the chances to get higher wages decreases. So, self-employed person has to face consequences in terms of fall in wage rate in the labor market. Therefore, self-employed if starts switching to wage employment then it's just an increase in unemployment.

Faridi et al. (2008) has focused on the Bahawalpur district of Punjab to know the determinants of self-employment. They used the primary data by conducting a survey. They also constructed some models to check female self-employment determinants as well. Their study was limited in a sense of demographic constraints.

Margolis (2014) go through a theoretical based study to check the importance of self-employment in the developing countries. Although he considered the agriculture self-employment as well. He was of the view that self-employment the only way out for the people of developing countries as they face restrictions to wage employment. On the other hand entrepreneurship is only one third of the total self-employment.

Fatima and Yousaf (2015), used the probit model to define the determinants of self-employment in the urban areas of Pakistan. They used the household Integrated Economic Survey 2010-11, conducted by the Pakistan Bureau of Statistics. They considered gender, education, age, marital status, household size, asset, Punjab, Sindh and KPK as determinants. All of the determinants were statistically significant except the education. Their study lack on theoretical and literature based.

Ma and Li (2016), they have defined the self-employed as a person who owned a small firm where less than 7 persons are working. They took into account another category which is called own-account worker. Own-account worker is a worker who work in such firm that is not owned by him likely to be a family business. They used the multinomial logit model for analysis. They used two times 2007 and 2013. There results suggested that in 2013 self-employment is mostly affected by the government policies in that time. Also they were supporting the older people more likely to be self-employment.

Clark (2015), promote the serious approach by the UK government towards the self-employment among minority groups. Most of the Pakistani and Indian people more attracted towards self-employment. The reasons are the restrictions minorities faced towards the productive wage employment. So, self-employment a way out even its less productive. Therefore, according to the researcher improvement in the status of self-employed ethnic groups financially has the long lasting effects on the economic drivers by these groups.

Bogenhold and Klinglmair (2015) women participation in the solo self-employment is more in Carinthia (Austria). A survey analysis was conducted with 52 questions in Feb, 2014. Many small businesses for short term and also for low returns are run by the females but the working environment is much better in them.

Awan and Ibrahim (2015), used the primary data to check whether microfinance is the key determinant to self-employment in Bahawalpur. They used the logit model as an econometric technique. 3600 microfinance institutions working in Bahawalpur which could make the microfinance as a main driver to self-employment. On the basis of their results they suggested that 200% more chances are there of being self-employed with microfinance facility.

Christelis and Fonseca (2015) observed 13 OECD countries with survey data on international standards. They have tried to understand the transition to self-employment. They suggested that when government policies are in favour self-employment is more attractive. On the other hand being a female and number of children also positively affect the chances of self-employment. If there are options available like early retirement or unemployment benefits then these affect the chances of self-employment negatively.

Miao (2015) is of the view that happiness should be more discussed regarding self-employment rather than its driving factors. He by the means of his results concluded that self-employed are happier than the wage employed in China. The point of concern in his study is the use of OLS for binary dependent variable. So, there are heterogeneous results.

There has been very little econometric plus theoretical literature available on the issue of self-employment in Pakistan. Form the above general analysis we have an objective to study that what are the factors that leads to self-employment in overall Punjab. We have chosen Punjab for our analysis because it is the most populated province of Pakistan. Also, according to the Labor Force Survey 2009-10 Punjab has the highest percentage of self-employed people.

A brief overview of the existing literature guides us to consider Age, Marital Status, Education, Gender and Wealth as the main driving factors towards self-employment. We will also include the rural/urban and district level dummies to check whether demographic changes may important for the decision of self-employment or not.

## Methodology and Results

As we know that our dependent variable is a binary in nature therefore, we cannot use the OLS technique. We are using here Logit model as in literature most of the studies conducted with the help of this technique. Our base line model is

$$SE = f(\text{Gender, Age, Education})$$

SE means Self-employment; on the other hand gender, age and education are taken as the control variables. STATA 11 application is used to generate the results. To check the further effects of the rest of the variables we are concerned with we have constructed five more models. So, the six models are as below,

SE = f (Gender, Age, Education).....	(1)
SE = f (Gender, Age, Education, Marital Status).....	(2)
SE = f (Gender, Age, Education, Area).....	(3)
SE = f (Gender, Age, Education, Wealth Index).....	(4)
SE = f (Gender, Age, Education, Division).....	(5)
SE = f (Gender, Age, Education, Marital Status, Area, Wealth Index, Division).....	(6)

We have included one variable at a time and in the model 6 we have included all of the variables.

Multiple Indicator cluster Survey 2007-08 has been selected as the data source. This report has published in 36 volumes, the first one consist of explanatory appendices of all the technical aspects in the survey. Bureau of Statistic Punjab division with the cooperation of UNICEF has constructed this report. The main objective of this report is to summarize all of the cognitive and non-cognitive changes happening in Punjab. So, it facilitates the Government to define very precise steps to improve and facilitate the human and social aspects for development. The report comprises of 9 divisions, 35 districts and 143 tehsils of Punjab. Different indicator variables consist of more than 70 characteristics.

We are only interpreting here the results of Table 5 (Appendix) which contains the margin ratios with robust standard errors, as a remedy to heteroscedasticity. Gender has the same relation to self-employment in all of the models, so, males are more likely to be self-employed as compare to females in Punjab. According to our results a male has 3.8% more chances to be self-employed. Also with robust Standard Errors we have strengthen our results. These results are in accordance with Crassco (1999), Do and Duchene (2008), Svaleryd (2013).

Self-employment has strong relevance to different age groups as suggested by the literature Nikolova and Bargar (2010). So, with reference to the people in age group 16 years to 35 years we have compared the chances of other age groups relation to self-employment. According to our results people in the age group 35 years to 54 years in model 1 has positive 0.564% chances to be self-employed which is higher than all other groups. This has changed in the Model 2. It becomes insignificant and negative as well when in this model we included marriage status. One can see that the inclusion of the marriage status has disturbed the nature of the variable in the model. The third age group has almost negative response to self-employment as compare to base line age group. This means that older people have no attraction towards self-employment. This has also changed its sign and turned insignificant when rural/urban and quintiles for wealth are included. This area of study needs some econometric explanations which are yet to be discovered.

Education has been analysed in a way that as compare to an illiterate person, primary pass person is more likely to be self-employed. If all of the 5 models its coefficient is positive and significant. Similarly, all of the education levels has positive significant margin ratios. That shows the positive chances to self-employment for all the education levels. This means education is best motivating factor to self-employment. The highest margin ratio is for secondary education. Many studies like Carrasco (1999), Goetz et al. (2011), Savleryd (2013) were in the support of higher education as a significant determinant to self-employment so is the case here. We have seen the same pattern in our results. Where the studies by Do and Duchene (2008), Dawson et al. (2009), in case of widowed, divorcee and unmarried all have negative coefficients. This shows that as compare to these three categories married person has the positive chances to self-employment as discussed by Lindh and Ohlson (1996).

As compare to rural sector urban sector residents have positive margin ratio. It shows a high percentage of positive chances to be self-employed. Wealth quintiles are to check the wealth effect to self-employment. In model 4 with respect to first quintile all the quintiles shows negative chances to self-employment. But in the Model 6 all of these changing their signs and become insignificant. In the end as we can see that results support the urban self-employment. Lindh and Ohlson (1996), Mohapatra et al. (2007), Do and Duchene (2008) they suggested the same story too. Similarly, we have seen our results with more precision. In all of the main districts of Punjab margin ratios are high. Faisalabad residents are most likely to be self-employed as compare to others. So, residents of the urban areas are more likely to be self-employed. Whereas Lahore is not in top of the order. This could be in line with the study by Willaims (2000), Tamvada (2005) that self-employment is not the first option in metro cities.

## Conclusion

The discussion made in precious chapters now empowers us to conclude our research. In this chapter we find the relevance of our results to the literature regarding self-employment. Here we will only consider the results of Logit Model with margin ratios in (Table-13).

As we have analyzed in the literature review that the male attracted more towards self-employment (Do and Duchene; 2007, Nikolova & Bargar; 2010, Shavit & Yaar; 2001). Similar conclusions we have made here thorough our research that being male have more chances to be self-employed in Punjab Pakistan. This could be the case that our social tides are more flexible and supportive for the male sect in case of entering into the market. On the other hand females are more indulged in household works and wage employment due to lack of confidence probably. There is much research is needed on this aspect that why female are less self-employed.

In almost all of the literature of self-employment education gained much importance. Due to which it believed that self-employment increases with the increase in education acquired (Svaleryd; 2013, Ohlsson; 2004, Do and Duchene; 2007, Nikolova and Bargar; 2010, Shavit & Yaar; 2001). We are concluding that education has significant effect but only the primary education level. Higher education is not that much influential as expected as suggested by some researchers as Tamvada (2005). The reason could be the social thought that if one is highly educated should look for the white color job.

There has been no support to the urban rural or area wise dynamics to self-employment. So, here this work included the rural urban self-employment. We conclude on the basis of our analysis that resident of rural areas are more attracted towards self-employment. The rationale can be made the less capital is needed to start a self-employment so therefore, we have also shown through our empirical analysis that people in the lowest quintile of wealth index are more self-employed.

The same kind of strengthening factor represents that a resident of Faisalabad and Gujranwala has the highest chances to be self-employed in the whole of Punjab. This could be due to the fact that there are most of the wage employment opportunities are available in big cities like Lahore. People have better chances to equip with better education. The basic infrastructure is also available in big cities to support entrepreneurship. Therefore in the rural areas or the small cities people with less capital, low education and limited markets chose to be self-employed in Punjab.

Most of the literature has suggested that being married is an insignificant factor to effect self-employment. On the contrary we conclude that the married men are found more attracted towards self-employment (Fairlie & Meyer; 1996, Blanchflower; 2000, Livanos; 2009). This could be the case that male are considered more responsible in our society to support the dependents.

The last research question was the age factor. Middle aged persons in Punjab are more likely to be self-employed. This could be of many reasons like the median age of Punjab is of young people so on the basis of this data we got this conclusion. Other reason could be that in self-employment a person has to do all of his work by himself. Therefore, being a person of middle age has better chances to excel in the field. Another reason is that most of the people who indulged in the self-employment be a part of the child labor as well in their child hood. So, when they mature they are of much experience to start their own work and become self-employed. All of these reasons are considered as the common notion in our society.

In the end we can say that the economic conditions we are observing in Punjab like less developed human capital, low literacy rate, less wage employment, large proportion of population living in the low quintile of wealth index, increased number of dependents in family base, a person living in this society self-employment has all the good arguments to give a person an esteemed earning source. Therefore, according to our analysis being a male, having primary level education, resident of rural area, having very low level of wealth and being married are the strong determinants of self-employment in Punjab Pakistan.

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## Appendix

Table 1

Years	Labor force participation rate for ages 15-24, total (%) (modeled ILO estimate)
1994	40.80
1995	39.40
1996	40.40
1997	41.50
1998	41.40
2005	45.30
2006	46.50
2007	45.00
2008	44.40
2009	45.00
2010	45.20
2011	45.20
2012	45.30
2013	45.30
2014	45.30
<b>Average</b>	<b>43.73</b>

Author's Own calculations, Source World Bank

Table 2

Years	Employment to population ratio, 15+, total (%) (modeled ILO estimate)
1994	48.10
1995	46.70
1996	47.10
1997	47.40
1998	47.50
2005	48.80
2006	50.30
2007	50.50
2008	50.40
2009	50.90
2010	51.20
2011	51.30
2012	51.50
2013	51.60
2014	51.70
<b>Average</b>	<b>49.67</b>

Author's Own calculations, Source World Bank

Table 3

Years	Unemployment, total (% of total labor force) (modeled ILO estimate)
1994	4.30
1995	5.00
1996	5.30
1997	5.80
1998	5.70
2005	7.10
2006	6.10
2007	5.10
2008	5.00
2009	5.20
2010	5.10
2011	5.10
2012	5.10
2013	5.10
2014	5.20
<b>Average</b>	<b>5.35</b>

Author's Own calculations, Source World Bank

Table 4

*Male and female self-employment percentages in Pakistan*

Pakistan		
Self-employed, female (% of females employed)	Self-employed, male (% of males employed)	Self-employed, total (% of total employed)
70.88	61.94	63.39

Table 5

*Logit model estimated results with robust standard errors*

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender	-3.854***	-3.948***	-3.879***	-3.854***	-3.859***	-3.991***
(B.L Male=1)	(0.0431)	(0.0432)	(0.0432)	(0.0431)	(0.0431)	(0.0434)
35 <Age<55	0.564***	-0.0160	0.594***	0.564***	0.567***	-0.0465**
(B.L Age<35=1)	(0.0152)	(0.0186)	(0.0154)	(0.0152)	(0.0152)	(0.0190)
55<Age<97	-0.0344*	-0.589***	0.00918	-0.0340	-0.0400*	-0.613***
	(0.0209)	(0.0240)	(0.0211)	(0.0209)	(0.0209)	(0.0243)
Primary	0.553***	0.554***	0.468***	0.553***	0.543***	0.459***

(Table Continued...)

(B.L None=1)	(0.0209)	(0.0210)	(0.0212)	(0.0209)	(0.0210)	(0.0215)
Middle	0.633***	0.637***	0.523***	0.633***	0.617***	0.512***
	(0.0224)	(0.0225)	(0.0226)	(0.0224)	(0.0226)	(0.0230)
Secondary	0.749***	0.761***	0.554***	0.750***	0.727***	0.544***
	(0.0188)	(0.0189)	(0.0193)	(0.0188)	(0.0191)	(0.0196)
Higher	0.693***	0.709***	0.336***	0.693***	0.672***	0.331***
	(0.0230)	(0.0231)	(0.0239)	(0.0230)	(0.0232)	(0.0242)
Madrasa	0.724***	0.659***	0.582***	0.721***	0.759***	0.552***
	(0.197)	(0.197)	(0.202)	(0.197)	(0.197)	(0.204)
Widow		-0.389***				-0.406***
(B.L Married=1)		(0.0473)				(0.0478)
Divorce		-0.491***				-0.478***
		(0.122)				(0.125)
Unmarried		-0.999***				-1.095***
		(0.0204)				(0.0209)
Urban=1			0.942***			0.982***
			(0.0147)			(0.0150)
Second				-0.0355*		-0.0158
(B.L Q1=1)				(0.0209)		(0.0217)
Middle				-0.0418**		-0.0109
				(0.0210)		(0.0222)
Fourth				-0.0475**		0.00872
				(0.0211)		(0.0226)
Highest				-0.0481**		0.0132
				(0.0232)		(0.0251)
D.G.khan					0.141***	0.120***
(B.L Bahwalpur=1)					(0.0329)	(0.0334)
Faisalabad					0.497***	0.449***
					(0.0288)	(0.0294)
Gujranwala					0.417***	0.375***
					(0.0287)	(0.0296)
Lahore					0.315***	0.179***
					(0.0291)	(0.0298)
Multan					0.177***	0.123***
					(0.0309)	(0.0322)
Rawalpindi					0.178***	0.137***
					(0.0303)	(0.0314)
Sahiwal					0.177***	0.231***
					(0.0381)	(0.0385)
Sargodha					0.277***	0.303***
					(0.0315)	(0.0323)
Constant	1.327***	2.029***	1.019***	1.359***	1.081***	1.575***
	(0.0461)	(0.0488)	(0.0465)	(0.0478)	(0.0504)	(0.0542)
Observations	366,473	366,473	366,473	366,473	366,473	366,473

# DETERMINANTS OF PROFITABILITY IN PRIVATE COMMERCIAL BANKS OF PAKISTAN

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## Abstract

*This study examines the profitability of the private commercial banks in Pakistan for the period of 2004-2013, utilizing the panel data analysis technique. The independent variables include microeconomic as well as macroeconomic variables. Among the performance measures, the asset quality and size indicated negative relationship with profitability of private commercial banks. The relationship between liquidity and efficiency with profitability was found to be positive. All the micro economic indicators including inflation, interest rate, and gross domestic product proved positively related with profitability.*

**Keywords:** Banks, Profitability, Micro Economic Factors, Macro-Economic Factors.

**JEL Classification:** G210

## Introduction

Financial System of a country serves as a backbone of an economy which facilitates all the financial institutions. These institutions play the role of essential components of the financial system and ensure its stability (Ahmad, Raza, Amjad, & Akram, 2011). Commercial banks are the major constituents of this system and have made a remarkable contribution in the economic growth of the country.

At present, thirty eight commercial banks are operational in Pakistan. These banks, as per State Bank of Pakistan, are divided among Public (5), Islamic (5), Foreign (6), Specialized (5) and Private (17).

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The performance of the banking sector can be analyzed at a glance through the following table:

(In millions of Pak Rupees)

Table 1

Items	2009	2010	2011	2012	2013
Total equity	582.6	608.9	770.7	832.0	878.0
Total liabilities	5,864.1	6,487.1	7,498.0	9,001.0	9,701.2
Total assets	6,530.7	7,184.9	8,299.2	9,905.2	10,678.1
ROA (Public Sector Banks)	0.56%	1.68%	1.27%	1.05%	0.46%
ROA (Private Sector Banks)	0.82%	0.85%	1.42%	1.30%	1.23%

The adverse economic conditions compromised the loan repayment capacity of the domestic industries leading to an increase in the banks' nonperforming loans. The public sector borrowed heavily to meet the fiscal deficit leaving less money with the commercial banks to give loans to the private sector which led to decrease in investments in Pakistan. Thus, ever since 2008 due to internal and external debt situation Pakistan's banking industry has been facing numerous challenges due to which it had to narrow down its opportunities and choose government borrowing over banking assets.

A lot of foreign empirical researches are available examining the factors which effect commercial banks' profitability but evidence in Pakistan is inadequate. Researches which have been conducted so far either discuss the macroeconomic determinants which affect profitability or are only limited to the microeconomic variables. Thus, this research will fill the existing gap in research by taking into consideration both the micro and macro determinants which has an impact on commercial banks' profitability in Pakistan.

### Literature Review

A stable financial system is profoundly dependent upon profitability of the banking sector (Hasan, Shaari, Palanimally & Mohamed, 2013). Factors affecting the profitability of an organization can be external as well as internal. Internal company factors are termed as micro economic factors

while external economic factors are termed as macro economic factors.

A number of researchers have studied the determinants of profitability. Significant researches are discussed below:

Kunt and Huizinga (1998) examined the bank and country factors impacting the profitability of the banks of eighty countries for the period of 1988-1995. The research took net interest margin and earnings before tax as dependent variables. Bank variables, country variables and dummy for country were taken as independent variables. The study concluded that capitalization and profitability have positive relationship while reserves and profitability have negative relationship due to inflationary pressures. Foreign banks in developing countries are more profitable than domestic banks while reverse is true in developed countries.

Khan et al. (2011), investigated the bank specific determinants of profitability for the period 2000 to 2010. The research included sixteen banks. The study used net profitability as a measure of profitability and utilizes deposit to asset ratio, loans to assets ratio, loan growth, non-performing loans, return on assets, insider trading, tax paid on net income, operating expenses, non-interest income and net interest margin as independent variables. Variables deposit to loan ratio, deposit to asset ratio, loan to asset ratio, loan growth, net interest margin and return on assets depict positive and significant relationship with bank profitability. Tax and overhead expenses have negative but significant relationship with the bank profitability depicting that the increase in both the expenses leads to decline in bank's profitability. Equity to asset ratio, insider trading and non-interest income depicts insignificant relationship with net profit.

Jamal and Hamidi (2012) studied the macroeconomic determinants of profitability of Malaysian banks by utilizing panel data for the period of 2004-2011. The study investigates sixteen banks including eight domestic and eight foreign banks. Dependent variable used in the research was return on asset while independent variables consisted of real gross domestic growth rate, lending rate, inflation and stock market development. The research developed three models on which regression analysis was performed. The first model has all the sixteen banks while the second model only had domestic banks and the third model only had foreign banks. Relationship of inflation with return on asset in all the three models was positive and significant. Stock market development in all the three models was significant but negative. Lending rate in the first and third models enjoyed positive and significant relationship with profitability but depicted a negative and insignificant relationship in the second model. Relationship of real gross domestic product with profitability under all models is positive but the relationship is insignificant in foreign banks while for rest of the banks the it is significant for both the models.

According to the studies of Kanwal and Nadeem (2013) the effect of macroeconomic determinants on the commercial banks' productivity of commercial banks those operating in Pakistan.

The research studied the secondary panel data for the time period of 2001-2011 to investigate the impact of inflation, real gross domestic product and real interest rates on profitability. The research utilizes three measures of profitability, namely, return on asset, return on equity and equity multiplier to run three regression models. The study includes eighteen banks. The first model uses return on asset as dependent variable. Inflation enjoys negative but significant relationship with return on asset while gross domestic product and real interest enjoy positive but insignificant relationship with return on asset. The second model which employs return on equity as profitability measure shows negative relationship of both inflation and gross domestic product but inflation in this model has a significant relationship while gross domestic product has insignificant relationship. The relationship of real interest with return on equity is positive and significant. The third model which employs equity multiplier as the measure of profitability shows negative relationship of inflation and real gross domestic product with equity multiplier and like return on equity, inflation enjoys significant relationship whereas gross domestic product enjoys insignificant relationship.

Obamuyi (2013) investigated the micro and macro factors which effect profitability of Nigerian commercial banks utilizing panel secondary data for the period 2006-2012. Twenty commercial banks were included in the study. Return on assets was taken as the dependent variable while independent variables consisted of micro as well as macro indicators. Micro indicators used in the research were; capital, size and expense management while macro indicators consisted of interest rate and real gross domestic product. The study utilized both descriptive, correlation and fixed effects regression model. The relationship between capital, real interest and gross domestic product is positive and significant while relationship between bank size and expense management is negative and significant.

Dawood (2014) evaluated the profitability determinants of twenty three commercial banks operating in Pakistan for the period 2009-2012. The dependent variable used in this research for profitability on return on assets while variables that were took as independent consists of liquidity, cost efficiency, deposits, capital adequacy, and size of the bank. The methodology adopted by the research includes logarithm techniques and descriptive, regression, correlation analysis. The panel data used in the research utilized data of twenty three commercial banks including four public commercial banks, four Islamic banks, two foreign banks and thirteen private banks. Deposits enjoy weak negative relationship with return on assets. The regression analysis indicates negative but significant relationship between cost efficiency and liquidity with return on assets. Deposits and capital adequacy both enjoy positive relationship with return on assets, however deposits have insignificant relationship while capital adequacy has significant relationship. Size of the bank shows insignificant relationship but positive relationship with return on assets.

Some other related researches are of Khrawish (2011) who examined the macroeconomic factors affecting the listed Jordanian banks and found that there is a negative impact of GDP and inflation on ROA and ROE. Alper and Anbar (2011) witnessed that the GDP growth, real interest rate

and inflation rate least affect banks' assets and equity returns have significant impact on Turkish banks. Sharma and Mani (2012) reported in their research that GDP and inflation have insignificant effect on ROA of commercial banks of India during 2006-11.

Summary of literature review is given in below table:

Table 2

<b>GDP</b>	+/-
<b>Inflation</b>	+/-
<b>Interest</b>	+/-
<b>Capital Adequacy</b>	+/-
<b>Asset Quality</b>	-
<b>Operational Efficiency</b>	+/-
<b>Liquidity</b>	+/-
<b>Total Debt to Total Assets</b>	+/-
<b>Size</b>	+/-

### Research Hypothesis

The following eight hypotheses are used for this study:

*H1:* Capital Adequacy Ratio has a positive relationship with profitability.

*H2:* Asset Quality has a negative relationship with profitability.

*H3:* Efficiency has a positive relationship with profitability.

*H4:* Liquidity has a positive relationship with profitability.

*H5:* Growth in bank size has a negative relationship with profitability.

*H6:* Interest Rate has a positive relationship with profitability.

*H7:* Inflation has a positive relationship with profitability.

*H8:* Growth in gross domestic product has a negative relationship with profitability.

### Research Methodology

Panel data of private banks have been used to investigate the determinants of profitability and impact of micro and macro-economic factors on profitability. The research applied descriptive along with regression techniques.

After literature it is proved that macro and micro economic factors effect profitability. Thus the research includes both elements. Micro economic factors included in this research are capital, size, liquidity, asset quality and efficiency while macro-economic variables included in this research are gross domestic product, inflation and interest rates.

The model included only private commercial banks operating in Pakistan.

The paper uses descriptive analysis along with pooled ordinary least square, fixed effect and random effect panel techniques.

Significance of F-test is investigated in order to confirm the result selection of pooled OLS and fixed effect model. LM Test is used in selecting between the results of pooled regression and random effect. Insignificance of chi square indicates that result of random effect is more reliable. To assess the reliability of fixed effect and random effect model Hausmann test is utilized. On this method significance of chi square determines which model offers more reliable results.

All private banks operating since 2001 have been included in the research, therefore out of seventeen banks, thirteen private banks have been included in the research for the period of 2004-2013. Data for profitability is obtained from published in bank's annual reports of financial statements. Data related to gross domestic product, inflation and interest rate is taken from World Bank report while banks internal data is taken from annual published and audited reports. The sample taken is from 2004 to 2013.

#### Definitions of Variables:

**Return on Asset:** It is a financial ratio which assesses the earning capability if assets and is considered as the best gauge of bank's profitability.

**Real Interest Rate:** It is defined as price of borrowed money adjusted to inflation.

**Gross Domestic Product:** It is the monetary value of goods and services produced in an economy.

**Consumer Price Index:** It is a measure of inflation which consists of prices of fixed goods and services monitored periodically.

**Capital Adequacy:** It is the measure to assess the revenues generated through equity and is obtained by dividing revenue with equity.

**Asset Quality:** It is calculated by dividing total loan loss provision with total loans.

**Operational Efficiency:** It is calculated by dividing operating income with net income.

**Liquidity:** It is measured by dividing bank net loans to total assets.  
**Size:** Size of the bank is measured as percentage change of the assets.

## Results

Stata was used to analyze the data at significance level of 0.05.

### *Descriptive Statistics*

Descriptive statistics of micro economic factors for private banks along with profitability for the period of ten years is presented in Table 3.

Descriptive information of macroeconomic indicators including gross domestic product, real interest rate & consumer price index is shown in Table4.

Table 3  
*Descriptive Statistics of Micro Economic Indicators*  
*Observations: Overall = 130*  
*Within = 10*

	Capital	Size	Asset Quality	Liquidity	Efficiency	Profitability
<b>Overall</b>						
Average	.08	.20	.11	.50	1.33	.01
Max	.33	1.53	.63	.65	21.42	.04
Min	.00	-.22	.00	.23	-112.46	-.08
Std. Deviation	.05	.21	.10	.10	11.02	.02
<b>Within</b>						
Max	.17	1.50	.46	.64	19.55	.05
Min	.01	-.28	-.06	.32	-103.75	-.05
Std. Deviation	.02	.21	.07	.08	10.59	.01

Table 4

*Macro-Economic Indicators' Descriptive Statistics**GDP=Gross Domestic Product**Int. =Interest Rate**Inf. =Inflation**Observations = 10*

	<b>GDP</b>	<b>Int.</b>	<b>Inf.</b>
Average	.05	.01	.10
Max	.09	.29	.17
Min	.00	-.03	.05
Std. Deviation	.02	.03	.03

Table 5

*Regression Results*

	<b>Pooled Regression</b>				<b>Fixed Effect</b>				<b>Random Effect</b>			
	Adj. R square 0.61				R square 0.50				R square 0.48			
	F test 26.1				Overall 0.49				Within 0.35			
					F test 318.48				Overall 0.35			
Independent Variables	Cof.	Std. Err.	t	P>t	Cof.	Std. Err.	T	P>t	Cof.	Std. Err.	z	P>z
Capital	0.00	0.03	0.02	0.02	0.12	0.10	1.14	0.28	0.03	0.04	0.76	0.45
Asset quality	-0.18	0.01	-12.64	0.00	-0.13	0.03	-4.59	0.00	-0.15	0.01	-10.22	0.00
Efficiency	0.00	0.00	1.09	0.25	0.00	0.00	1.21	0.25	0.00	0.00	0.79	0.43
Liquidity	-0.00	0.01	-0.10	0.58	0.00	0.01	0.28	0.79	-0.00	0.01	-0.22	0.83
Size	-0.01	0.01	-1.38	0.13	-0.00	0.01	-0.70	0.47	-0.01	0.01	-0.94	0.35
Interest Rate	0.04	0.05	0.88	0.18	0.06	0.04	1.58	0.14	0.06	0.04	1.48	0.14
Inflation	0.03	0.06	0.41	0.42	0.04	0.05	0.69	0.51	0.04	0.05	0.75	0.46
GDP	-0.01	0.08	-0.07	0.60	0.03	0.08	0.41	0.69	0.02	0.07	0.30	0.76
cons	0.02	0.01	1.36	0.18	0.01	0.01	0.28	0.79	0.02	0.01	1.51	0.13

R square which indicated the explanatory power of the model ranges between 49.2% in fixed effect, 60.8% in pooled effect and 62.5% in random effect. Since F statistics is more than 4, therefore it is proved that the model is satisfactory.

Regarding the significance of individual variables, only asset quality is significant at 1% while remaining variables are insignificant. Assets quality and size enjoy negative relationship with profitability while all the remaining variables have positive relationship with profitability. Relationship of GDP with profitability is also negative in pooled regression while liquidity has negative relation with profitability in pooled as well as random effect.

### *Technique Determination for Mode*

#### 1.F-test

To check if results of pooled regression is more reliable than fixed effect, F test is used. Significance of F-test probability proves that Fixed Effect results are more reliable than pooled regression results.

#### 2.Breusch and Pagan Lagrangian multiplier test

	Var	sd=sqrt(Var)
profita~y	0.00048	0.0219396
E	0.00011	0.0106268
U	5.3E-05	0.0072742

chi2(8)	61.51
Prob>chi2	0.00

To check if results of pooled regression is more reliable than random effect, Breusch Pagan is used. Chi Square results exhibited that irrelevance of probability with the objective that random effect regress results are much valid and having basic reliability instead of pooled regress.

#### 3.Fixed Effect or Random Effect: Hausmann Test.

	Co efficient			sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) Re	(b-B) diff	
Capital	0.11702	0.0271982	0.0898239	0.03802
Asset Quality	-0.13047	-0.152451	0.0219802	0.00684
Efficiency	6.6E-05	0.0000732	-7.67E-06	.
Liquidity	0.00269	-0.0030173	0.0057079	.
Size	-0.00382	-0.0046804	0.0008586	.
Interest Rate	0.06343	0.0611239	0.0023109	.
Inflation	0.03684	0.03793	-0.0010918	.
GDP	0.03324	0.0197067	0.0135328	.

chi2(8)	7.97
Prob>chi2	0.4360

To check if results of pooled regression is more reliable than random effect, Breush Pagan is used. -Since chi square is not significant, it is inferred that random effect regression results are more consistent and reliable than random effect regression results.

### **Discussion and Conclusion**

The relationship of capital adequacy and return is positive. Arogundade (1999) described capital as the stake of the owner in the business and further declares that as the stake of the owner increases so does his commitment to the business. Banks with high level of capital offer depositors safety from liquidity crunch and bankruptcy. Due to the low perceived risk, the depositor requires lesser deposit rate as lower the risk lower the return. This low level of cost increases the bank's profit margin and thus profitability. A commercial bank with low level of capital does not have the advantage of investing in high risk - high return investments as it would be impossible for such banks to absorb shocks emanating from liquidity and credits risks.

Asset quality and profitability enjoys negative relationship as increase in non performing loans results in decrease in interest income and failure of recovering the principal amount (Sprayregen, Friedland, Miller & Li, 2004). The negative effect of asset quality on profitability also results in decline in future growth and profits as the bank do not have sufficient funds for expansion and investment. Moreover, economic condition of a country also affects the non-performing loans of the bank. Thus, asset quality is dependent not only on bank's risk appetite but also on efficiency of the bank to recover its loans, policies of the regulatory authorities and economic condition of the country.

Efficiency ratio and profitability enjoys positive relationships which depicts that increase in administrative expenses leads to increase in profitability and vice versa. This happens because of the bank's ability to transfer its cost to its customer without reducing its profit margin. In banking industry of Pakistan the customer does not enjoy high bargaining power because of the limited number of financial institutions in Pakistan. Another justification for the positive relationship between increase in administrative costs and profitability is that more qualified staff demands more compensation.

Liquidity can be calculated as ratio of net loans to total assets (Golin, 2001). Higher profitability results in decrease in liquidity. As compared with other asset components of a bank, loans are less liquid. Advances and loans disbursed contributes to the banks main source of earning. Higher amount of advances results in higher profitability of the bank provided that bank is able to control its non-performing loans. Higher the liquidity, lower is the risk of bankruptcy and liquidation as liquidity provides safety to the business to meet its current obligations. On the contrary high liquidity leads to decrease in profitability due to low investments made. The findings about the relationship of liquidity and profitability satisfy the portfolio theory which suggests that lower the liquidity higher the profitability.

Majority of the profitability of the bank comes from advances, therefore if assets increases due to increase in advances profitability also increases. Profitability at times increase because of advancement in technology, increase in market share and reduction in expenses. At times when size increases profitability decreases. This happens because it is more difficult to manage large portfolios effectively. It is difficult to build efficient and effective communication channels in a large organization. As the size of the bank increase the bank also increases its product mix. Inappropriate and inefficient decisions of product mix and investment decisions can lead to increase in nonperforming loans and thus reduction in profitability (Berger et al., 1987).

Real interest rate has a positive relationship with profitability. Past researches proves that because of monopolistic nature of banks they are able to increase deposit rate with increase in discount rate. Growth in lending rates has a positive relationship with nonperforming loans. Banks covers these losses by increasing lending rates again to cover the credit risk (Vong et al., 2009; & Sufian et al., 2008). Another indirect way of interest rate increase can be due to increase in inflation and economic growth. In such conditions demand for loans can increase leading to increase in profitability.

Inflation has direct and indirect effect on bank's profitability (Staikouras & Wood, 2004). Direct impact increases the cost of the bank. These costs include selling and administrative costs. Indirect effect can come from the change in interest rates and asset values due to increase in inflation. If a bank is able to increase the lending rates before the costs increase due to inflation, profitability and inflation will have a positive impact. Due to undeveloped private and secondary bond market most of the debt creation of companies are through bank borrowing which helps Commercial Banks to increase the lending rates and transfer inflation cost to their customer.

One measure to ascertain economic growth is through increase in growth of gross domestic (GDP). Profitability has a positive relationship with GDP growth as economic development ensures more investment in the economy and hence more borrowing from the banks. In good economic years businesses are doing well and therefore defaults of banks loans decreases, increasing the profitability of the banks. Increase in liquidity due to decline in bad debts also results in more advances and hence more profitability. Bank's profitability is related to the economic business cycle. Increase in gross domestic product results in increase in bank's profitability and decrease in gross domestic product leads to decrease in bank's profitability (Demirguc-Kunt & Huizinga, 2001 & Bikker & Hu, 2002).

Overall, the research results indicates that Pakistan's Banking industry have certain privileges due to dearth of other financial institutions and limited bond market. The Banking industry is mature enough to take advantages of these circumstances to increase its profitability by transferring costs wherever and whenever possible.

### Recommendations for Future Research

A more comprehensive study including all types of banks operating in Pakistan and longer duration is required to generalize the results for the overall banking industry.

More microeconomic and macroeconomic variables can be included from the literature to further study the determinants of profitability.

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# DO DEMOGRAPHIC FACTORS EXPLAIN INEQUALITY IN CONSUMPTION EXPENDITURE IN PAKISTAN? NEW EVIDENCE FROM QUANTILE REGRESSION ANALYSIS

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## Abstract

*The objective of this study is to investigate the significance of demographic factors (gender, age, education, family size, occupation, region of residence) on consumption expenditure inequality. We attempt to decompose inequality and find the factors, characteristics and region that may cause inequality using Pakistan Social and Living Standards Measurement Survey (PSLM). Quantile regression is used to find the effects of different characteristics on per capita real monthly expenditures at different quantiles for the years 2005-06. Household size shows negative relation with expenditures in general as well as in urban and rural areas for all quantiles. Age, female headed households, agriculture, high skilled occupations and higher education have positive effects on per capita real consumption expenditure.*

**Keywords:** Inequality, Living Standard, Quantile Regression, Consumption.

**JEL Classification:** Z000

## Introduction

Income inequality has long been a topic of discussion particularly in relation to economic growth. The theories related to income inequality and economic growth have also been severely scrutinized and criticized (see, for example, Piketty, 2014). However, with the work of Paglin (1975) and Kuznets (1976), demographic factors have started receiving greater attention. Both of them examined the effect of household size (positively associated with household income) and the age of the household head (related to household income in an inverted U-shaped curve) on household

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income inequality (Heerink, 1993). Kuznets (1976) shows how inequality first rises with the process of development and then starts falling. Kuznets' hypothesis is also used to explain regional and inter-industry inequality in wages. Mincer (1958) and later Becker (1962) develop the theory of human capital and show how skill formation, schooling, and training explain male-female wage differential as well other inequalities in the society. Therefore, household size, age of the household head, education, occupation, industry, and region have strong theoretical link with income inequality as explained above. Mierau and Rockey (2015) suggest that demographic factors perpetuate the trend in income and wealth inequality.

Inequality has been one of the central issues in Pakistan since its independence from the British colonial rule in 1947. A number of attempts has been made to examine income or consumption inequality in Pakistan (see, for example, Naseem, 1973; Adams, 1993; Haq, 1998; Anwar, 2004, 2005; Idrees, 2007).

The empirical literature shows that income and consumption inequality have different trends in Pakistan. Gini shows relatively equal distribution of consumption among individuals in all areas for the years 1979 to 1992-93 but it is higher in urban areas (Haq, 1997). The study shows that there is reduction in income inequalities in 1960s but the distribution of income deteriorated in 1970-79. In 1988 again inequality worsened due to inflation and slow growth rate (Hasan, 1997).

Consumption inequality has increased in Pakistan during 2001-2005 with the same trend in urban and rural areas. Increase in Gini coefficient is larger in rural areas as compared to urban areas (Anwar, 2009). Gini coefficient of consumption for both urban and rural areas in Pakistan has decreased in the years 1998-99 to 2001-02. During 2001-2005 there is an increase in rural inequality but inequality remains urban phenomenon.

Inequality in urban areas has a higher proportion to add in overall inequality (Ali & Saboor, 2010). The paper shows that initially income inequality has an increasing trend during 1966-67, but it declined in late 1960s in Pakistan. In 1970s inequality followed an increasing trend which later on declined till the late 1980s. Income inequality increased quickly in 1990 and then declined till 1996-97. However, the inequality was higher between 1996-97 and 1998-99, turning 1998-99 as the most unequal distribution in Pakistan (Anwar, 2007).

Nasim (1973) estimated the Gini coefficient to find income inequality in Pakistan for 1962-63, 1996-67, 1968-69 and 1969-70. The study found that the inequality was higher in urban areas as compared with rural areas, using individual and household unit of analysis. The inequality has an increasing trend during 19963-64 and 1966-67 and after that it decreased.

Ahmed and Ludlow (1989) examined the trends in consumption inequality applying the Gini coefficient, Lorenz curve, coefficient of variation, Atkinson index and logarithmic variance for the

period 1979 and 1984-85 at individual and household level. The study reveals that all of the inequality measures showed an increase in inequality.

Anwar (2003) estimated Lorenz curve and the Gini coefficient to find consumption inequality trends in inequality for Pakistan for the years 1998-99 and 2001-02. The study showed a rise in inequality in Pakistan. However, at the regional level inequality situation is different. In rural area it increased while it decreased in urban area.

Idrees (2007) examined income and consumption inequality for the period of 1992-93, 1996-97, 1998-99 and 2001-02. The study found higher inequality in Pakistan based on income and consumption but consumption inequality level less than income inequality. It was more severe in urban areas as compared to rural areas.

Anwar (2009) estimated the Gini coefficient using the Household Income and Expenditure Survey data for the period from 2001-02 to 2004-05 and results showed an increased inequality in Pakistan. The study also indicated that it was higher in urban areas as compared with rural areas.

Decomposition of inequality is important to find the factors, characteristics and region that may cause inequality to rise. Kruijk and Leeuwen (1985), Kruijk (1986 & 1987) have estimated decomposition of income inequality with respect to different factors such as number of earners, regions, labor and non labor income.

Idrees and Ahmad (2010) decomposed consumption inequalities with respect to food, health, education and housing. It is generally observed that level of consumption inequality is less than the level of income inequality (Idrees, 2007).

Income inequality in Pakistan has increased significantly in the last eight years and the trend continues irrespective of all claims of its reduction (Bukhari & Haq, 2008). Therefore it is useful to estimate level of consumption inequality and factors affecting inequality.

The rest of the paper is organized as follows: section 2 introduces the data and methodology, section 3 discusses the results in comparison with other studies, and the last section concludes with policy implications.

“Occupation and education are the most visible factors that perpetuate inequality inter-generationally across social classes” (Sugimoto, 2005)

## Data and Methodology

### Data

The main source of data on household economic activity in Pakistan is the Pakistan Social and Living Standards Measurement Survey (PSLM) compiled and published by the Federal Bureau of Statistics (FBS), Government of Pakistan. It is a questionnaire based survey which covers more than 14,000 households and provides fairly detailed information on consumption expenditures of the country. Micro level data for the period of 2005-06 are used on household head's age, age square, gender, occupation, education, industry and economic activity.

### Variable Description

Log of real monthly per capita consumption expenditures (LRMPCE) is the dependent variable.

Independent variables are

Table 1

### Independent variables

Variable	Description
<b>Age of the Household Head</b>	
<b>Gender</b>	1 if female others=0
<b>Occupation</b>	
High Skilled	high skilled=1, others=0 (included occupation in high skill category are professional, technical, and managerial)
Medium Skilled	medium skilled=1, others=0 (included occupation in medium skill category are clerical and sales occupation)
<b>Education</b>	
Below Primary	below primary=1, others=0
Primary	primary=1 others=0
Middle	middle=1, others=0
Secondary	secondary=1, others=0
Higher	higher=1 others=0
<b>Industry</b>	
Agriculture	Agriculture=1, others=0
Manufacturing	Manufacturing industry=1, others=0
Modern services	Modern services=1 others=0 (included sectors are Finance, Insurance, real estate, scientific, research, health, medical).
Traditional services	Traditional services=1, others=0 (wholesale, retail trade, personal services, Hotels/restaurants are included in traditional services)
<b>Urban</b>	1 if Urban, otherwise =0

### Methodology

The classic Quantile Regression (QR) model, presented by Koenker and Bassett (1978), could be regarded as an extension of Ordinary Least Squares (OLS). As OLS estimates show the predictor variables are related to the conditional mean value of the dependent variable while QR allows the researchers to model the predictors against the conditional median (50th quantile) or various conditional quantiles (for example, 25th, 50th, 75th quantiles) of the dependent variable. Hence, QR is more appropriate when the distribution of a dependent variable is likely to be skewed like the distributions of consumption or income. The benefit of quantile regression is to find the factors that affect consumption expenditures on low and high quantiles. The main purpose of quantile regression is to minimize the weighted sum of absolute residuals. Different percentiles of the dependent variables can be estimated and it is also possible to use different independent variables for different quantiles (Deaton, 1997; Litchfield, 1999); Bargani et al., 2009; Caglayan & Astar, 2012; Yang et al., 2013).

Litchfield (1999) suggests that quantile regression technique estimates the mean of a dependent variable conditional on the values of the independent variables. It minimises the sum of the absolute residuals rather than the sum of squares of the residuals as in ordinary regressions. He further states that different percentiles of the dependent variables can be estimated and it is also possible to use different independent variables for different quantiles, reflecting the view that data may be heteroskedastic with different factors affecting the rich and the poor.

A quantile regression gives more comprehensive picture of the independent variables on the response variable. The quantile regression estimates the change in response variable that is due to one unit change in the independent variable in a specified quantile (Holubowicz & Muczynski, 2011). According to Sinha (2005) the quantile regression is considered better estimate due to the following good features:

- A quantile regression model makes estimation easy because it has linear programming representation.
- These models can be used to characterize the entire distribution of a dependent variable for a given set of regressors.
- Quantile regression takes into account the weighted sum of absolute deviations (residuals). Due to this fact the estimated coefficient is not sensitive to the outlier observations of the dependent variable.
- Even if the distribution of error term is not normal, quantile regression estimators are more efficient than least square estimators. Moreover, QR is better when residuals are heteroscedastic.
- If data are contaminated, quantile regression is more stable than mean regression.

### *Quantile Regression (QR) Model*

In QR the usual linear model is used<sup>3</sup>:

Simple equation

$$\ln(Y_i) = \beta_0^{(p)} + \beta X_i^{(p)} + \epsilon_i^{(p)} \quad \dots\dots\dots (1)$$

Estimation is focussed around the quantiles so these are labelled as p

Quantile equation

$$\ln(Y_i) = \beta_0 + \beta X_i + \epsilon_i \quad \dots\dots\dots (2)$$

Where ln is log, the subscript i refer to the household, Y refers to the per capita consumption expenditures of the household, and X is a vector of explanatory variables that includes all relevant household characteristics and  $\beta$  is the vector of slope coefficient. p stands for quantiles. These characteristics include the household head's age, age squared, a dummy variable for gender, and dummy variables for educational attainment; dummy variables for the industry and occupation containing the main economic activity of the household.

## **Results and Discussion**

Quantile regression is used to check the consumption expenditure patterns on low and high quantiles. Household head education is included as below primary, primary, middle, secondary and higher while the omitted category is illiterate<sup>4</sup>. We also categorized industries into agriculture, manufacturing, modern services and traditional services, while non-manufacturing is treated as the omitted category. In occupation we have taken high skilled and medium skilled, while low skilled is taken as an omitted category<sup>5</sup>. The results of regression analysis are presented in the following table:

Table 2

*Quantile Regression Results for 2005-06:*

*Dependent variable: Log Per Capita Real Monthly Consumption Expenditures*

Variables	Q 20 <sup>th</sup>	Q 40 <sup>th</sup>	Q 60 <sup>th</sup>	Q 80 <sup>th</sup>
<b>H H size</b>	-0.0338* (0.0009)	-0.0348* (0.0009)	-0.0332* (0.0010)	-0.0328* (0.0017)
<b>Age</b>	0.0052* (0.0003)	0.0057* (0.0003)	0.0056* (0.0002)	0.0063* (0.0004)

(Table Continued...)

<sup>3</sup> Simple and quantile equations are taken from Hao and Naiman, 2007: p. 23 (Eq. 3.1 and Eq 3.2)

<sup>4</sup> Below primary consists grades 1-4 Primary 5, middle school of grades 6-8, secondary school of grades 9-10, high school of grades (undergraduate or graduate).

<sup>5</sup> [high skilled (professional, technical and managerial) , medium skilled (clerical and sales occupation) , low skilled (agriculture, production and service workers),]

<b>Gender</b>				
Female	0.0327*** (0.0176)	0.0342** (0.0177)	0.0329** (0.0164)	0.0443** (0.0229)
<b>Occupation</b>				
High skilled	0.0366* (0.0125)	0.0380* (0.0122)	0.0685* (0.0112)	0.1119* (0.0157)
Medium skilled	0.0213* (0.0051)	0.0205* (0.0050)	0.0222* (0.0046)	0.0238* (0.0065)
<b>Industry</b>				
Agriculture	0.0139 (0.0145)	0.0404* (0.0139)	0.0457* (0.0126)	0.0654* (0.0176)
Manufacturing	0.0386* (0.0081)	0.0544 * (0.0081)	0.0593* (0.0074)	0.0619* (0.0103)
Modern services	0.0166* (0.0033)	0.0145* (0.0032)	0.0156* (0.0029)	0.0060*** (0.0040)
Traditional services	0.0054** (0.0027)	0.0106* (0.0026)	0.0118* (0.0024)	0.0173* (0.0034)
<b>Education Level</b>				
Below primary	0.0029 (0.0108)	0.0052 (0.0106)	0.0136*** (0.0094)	-0.0108 (0.0132)
Primary	0.0075 (0.0067)	0.0103*** (0.0065)	0.0052 (0.0059)	-0.0076 (0.0083)
Middle	0.0197* (0.0052)	0.0212* (0.0050)	0.0220* (0.0045)	0.0169* (0.0063)
Secondary	0.0231* (0.0039)	0.0263* (0.0038)	0.0271* (0.0034)	0.0230* (0.0049)
Higher	0.0399* (0.0034)	0.0468* (0.0033)	0.0514* (0.0029)	0.0544* (0.0041)
<b>Urban</b>	0.1273* (0.0071)	0.1378* (0.0075)	0.1460* (0.0073)	0.1595* (0.0095)
<b>Constant</b>	2.7074* (0.0263)	2.7642* (0.0271)	2.8545* (0.0245)	2.9727* (0.0349)
Pseudo R2	0.169	0.189	0.2088	0.2297

(Note) (i) \*, \*\*, \*\*\* indicate significance at the level 1%, 5% and 10%, respectively (ii) Numbers in parentheses are standard errors. (iii) Numbers of observations=7040

Table 2 shows the regression results. Overall, the equation performs quiet well. The pseudo-R2 ranges from 0.16 to 0.23 that may not be unreasonable given the higher variation of the cross-sectional analysis. The pseudo-R2 is a local measure of goodness of fit for the quantile regression. It measures goodness of fit by comparing the sum of weighted deviations for the model with the same sum from a model in which only the intercept appears (Koenker & Machado, 1999). The results present the 20th, 40th, 60th and 80th quantiles. The coefficients of most of the independent variables have the expected sign and almost all coefficients are highly significant. The significant factors include the household characteristics. Household size is negatively but significantly associated with per capita expenditures which mean that an additional member lowers the per capita expenditures of the household at 20th, 40th, 60th and 80th quantiles by 3.6, 3.4, 3.3 and 3.2 percent

respectively. It indicates that as the household size increases, it makes the household poorer. This finding is in line with Pomfret (2005) and Litchfield and McGregor (2008), who find that per capita expenditures become lower with an additional member in Kyrgyz and Tanzania.

Age of the household head has a positive and highly significant effect on household expenditure. When other variables fixed, 1-year increase in household heads' age, increases the consumption expenditure by 0.52, 0.57, 0.56 and 0.63 percent at the respective quantiles. The same results are given by Litchfield and McGregor (2008) and Caglayan and Astar (2012).

The findings show that expenditures for female are increasing by 3.27, 34.2, 3.29 and 4.43 percents at all quantiles. Occupation has also positive effects on per capita expenditure. The same findings are observed by Caglayan and Astar (2012) for Turkey.

The consumption expenditures of high skilled occupation expenditures are more than medium skilled occupations. High skilled occupation raises expenditures at all quantiles by 3.6, 3.8, 8.8 and 11.1 percent respectively. It indicates that high skilled heads have more expenditures and thus their welfare is higher than medium skilled households.

The consumption expenditures for industry show that it is also positively correlated with log of per capita expenditures but expenditure of manufacturing industry are higher than other industries and this is highly significant. The expenditures of manufacturing industry increase by 3.8, 5.4, 5.9 and 6.1 percent at respective quantiles. The education variable (below primary, primary, middle, secondary and higher education) affects consumption expenditure pattern as expected; the education of the household head at middle, secondary and higher level is positively correlated with expenditure per person, and the effects are significant for most of the selected quantiles. But the per capita expenditures are higher among those households' heads that have higher education; it increases expenditures by 3.9, 4.6, 5.1 and 5.4 percent in 20th, 40th, 60th and 80th quantiles. This is favoured by Maitra and Vahid (2006) for South Africa. Urban households have positive and significant effect on per capita expenditures.

There may be differences in household consumption for urban and rural areas. That is why quantile regressions are estimated separately for urban and rural areas in order to determine the factors affecting consumption expenditures.

Table 3

*Quantile Regression Results for 2005-06 (Rural)**Dependent variable: Log Per Capita Real Monthly Consumption Expenditures*

Variables	Q 20 <sup>th</sup>	Q 40 <sup>th</sup>	Q 60 <sup>th</sup>	Q 80 <sup>th</sup>
H H size	-0.0268* (0.0009)	-0.0256* (0.0011)	-0.0237* (0.0015)	-0.0231* (0.0023)
Age	0.0038* (0.0003)	0.0040* (0.0003)	0.0040* (0.0004)	0.0034* (0.0005)
<b>Gender</b>				
Female	0.0394** (0.0201)	0.0527* (0.0203)	0.0625* (0.0242)	0.0595** (0.0285)
<b>Occupation</b>				
High skilled	0.0113 (0.0168)	-0.0141 (0.0168)	-0.0146 (0.0202)	0.0541** (0.0246)
Medium skilled	0.0196* (0.0070)	0.0169* (0.0070)	0.0183* (0.0083)	0.0306* (0.0098)
<b>Industry</b>				
Agriculture	0.0654* (0.0155)	0.0736* (0.0156)	0.0897* (0.0185)	0.1096* (0.0216)
Manufacturing	0.0182*** (0.0115)	0.0120 (0.0117)	0.0114 (0.0139)	0.0267*** (0.0162)
Modern services	0.0171* (0.0048)	0.0157* (0.0048)	0.0150* (0.0057)	0.0136** (0.0066)
Traditional services	0.0079* (0.0033)	0.0086* (0.0033)	0.0119* (0.0040)	0.0135* (0.0048)
<b>Education Level</b>				
Below primary	-0.0069 (0.011)	0.0030 (0.0116)	0.0094 (0.0138)	-0.0088 (0.0161)
Primary	0.0036 (0.0072)	0.0074 (0.0073)	0.0069 (0.0087)	-0.0071 (0.0100)
Middle	0.0159* (0.0056)	0.0173* (0.0057)	0.0188* (0.0068)	0.0198* (0.0079)
Secondary	0.0155* (0.0043)	0.0227* (0.0043)	0.0252* (0.0052)	0.0193* (0.0060)
Higher	0.0264* (0.0039)	0.0333* (0.0039)	0.0368* (0.0046)	0.0312* (0.0054)
Constant (cons.)	2.6295* (0.0273)	2.7058* (0.0280)	2.7670* (0.0338)	2.99206* (0.0403)
Pseudo R2	0.1132	0.1185	0.1270	0.1174

(i) \*, \*\*, \*\*\* indicate significance at the level 1%, 5% and 10%, respectively (ii) Numbers in parentheses are standard errors. (iii) Numbers of observations=3518

Table 3 provides the information on rural demographic characteristics and confirms that age, gender, agriculture and education play an important role in rural areas. When we look at the results of rural area estimates, we can see that the effect of household size on consumption expenditures

decreases in the upper quantiles (approximately from 26 to 23 percent). Age is found to be significantly and positively affecting the consumption expenditures. One year increase in age, increases expenditures, by 0.38, 0.40, 0.40 and 0.34 percent at 20th, 40th, 60th and 80th quantiles respectively. Female headed household increases consumption expenditures to 3.9, 5.2 and 6.2 percent at 20th, 40th and 60th quantiles respectively but this difference rises to 5.9 percent at 80th quantile in rural areas of Pakistan. Consumption expenditures are higher among female headed households.

The Consumption expenditures of high skilled occupation show a decrease in expenditure by 1.4 and 1.5 percent at 40th and 60th quantile but it stands positive at 20th and 80th quantile (1.1 and 5.4 percent increase in consumption). While the effect of medium skilled occupations on consumption expenditures is increasing and it raises consumption by 1.9, 1.6, 1.8 percent and 3.0 percent at 20th, 40th, 60th and 80th quantiles in rural areas. Agriculture sector affects per capita expenditures positively and its coefficients are highly significant. Agriculture increases the consumption expenditures by 6.5, 7.3 and 8.9 percent at 20th, 40th and 60th quantiles but increase in consumption at 80th quantile is higher (10.9 percent). The same finding is confirmed by Nguyen et al, (2006) for Vietnam. As compared to other sectors expenditures are higher in agriculture sector as compared to manufacturing, modern and traditional services. Employment in manufacturing sector is less in rural areas than in urban areas and this is confirmed by Chamarbagwala (2009) for India.

Results for education show that the consumption expenditures of the people, who have primary education, and secondary education, are lower than those who have higher education which is consistent with the literature. Its effect on consumption expenditures show an increase by 2.6, 3.3 and 3.6 percent at 20th, 40th and 60th quantiles but at 80th quantile it increases consumption expenditures by 3.1 percent which is lower than the previous quantiles.

Table 4

*Quantile Regression Results for 2005-06 (Urban)**Dependent variable: Log Per Capita Real Monthly Consumption Expenditures*

Variables	Q 20 <sup>th</sup>	Q 40 <sup>th</sup>	Q 60 <sup>th</sup>	Q 80 <sup>th</sup>
H H size	-0.0439* (0.0014)	-0.0433* (0.0014)	-0.0405* (0.0015)	-0.0402* (0.0027)
Age	0.0059* (0.0005)	0.0058* (0.0004)	0.0063* (0.0004)	(0.0063)* (0.0006)
<b>Gender</b>				
Female	0.0122 (0.0298)	-0.0063 (0.0267)	0.0161 (0.0250)	-0.0163 (0.0344)
<b>Occupation</b>				
High skilled	0.0899* (0.0178)	0.0938* (0.0156)	0.1071* (0.0147)	0.1634 * ( 0.0207)
Medium skilled	0.0164* (0.0071)	0.0185 * (0.0063)	0.0186* (0.0060)	0.0231* (0.0084)

(Table Continued...)

<b>Industry</b>				
Agriculture	0.0575*** (0.0312)	0.0674* (0.0274)	0.1202 * ( 0.0260)	0.1233* (0.0362)
Manufacturing	0.0388* (0.0119)	0.0423* (0.0104)	0.0451* (0.0099)	0.0598* (0.0139)
Modern services	0.0119* (0.0045)	0.0130* (0.0039)	0.0083** (0.0037)	0.0004 ( 0.0051)
Traditional services	0.0016 (0.0041)	0.0063*** (0.0036)	0.0106* (0.0034)	0.0172* (0.0047)
<b>Education Level</b>				
Below primary	0.0120 (0.0184)	-0.0020 (0.0161)	0.0015 (0.0154)	-0.0068 (0.0214)
Primary	0.0166*** (0.0116)	0.0034 (0.0101)	-0.0055 (0.0096)	-0.0100 (0.0134)
Middle	0.0235* (0.0086)	0.0148** (0.0075)	0.0164** (0.0072)	0.0169*** (0.0100)
Secondary	0.0291* (0.0066)	0.0233* (0.0058)	0.0227* (0.0055)	0.0262* (0.0077)
Higher	0.0443* (0.0056)	0.0429* (0.0049)	0.0501* (0.0046)	0.0544* (0.0064)
Constant (cons.)	2.7280* (0.0418)	2.8596* (0.0372)	2.9037* (0.0359)	3.0179* (0.0511)
Pseudo R2	0.2159	0.2332	0.2468	0.2608

(i) \*, \*\*, \*\*\* indicate significance at the level 1%, 5% and 10%, respectively (ii) Numbers in parentheses are standard errors. (iii) Numbers of observations=3522

Quantile regression estimates for urban areas are given in Table 4. As it can be seen, from the table that most of the variables are significant except gender, below primary and primary education in urban areas of Pakistan. In urban as well as in rural sectors, the households' size affects are negative and significant for all quantiles with different pattern of changes in different quantiles. Consumption expenditures of household size are lower in all quantiles. It decreases consumption by 4.3, 4.3, 4.0 and 4.0 in all four quantiles. The findings also show that the affect of age is positive and stable across all consumption expenditures quantiles. Keeping other things being equal, one year increase in age, increases consumption expenditures by 0.59, 0.58, 0.63 and 0.63 percent in upper quantiles and the same results are given by Caglayan and Astar, (2012) for a Turkish study.

Estimates of gender show that the female headed households have negative and insignificant effect on consumption expenditures at 40th and 80th quantiles. The consumption expenditures decrease by 0.63 and 1.6 percent in the aforementioned quantiles but consumption expenditures increase by 1.2 and 1.6 percent at 20th and 60th quantiles. We found that the consumption expenditures of high skilled occupations are higher in upper quantiles. The consumption expenditures

increase by 8.9, 9.3, 10.7 and 16.3 percent at all quantiles respectively. The consumption expenditures for high skilled occupations are higher than medium skilled occupations.

The impact of consumption expenditures for below primary and primary education is negative and insignificant. Middle and secondary education have positive and significant effect on expenditures. Results for education show that the consumption expenditures for those who are below primary, have primary education and secondary education, are lower than the household heads that have higher education. Higher education increases consumption by 4.4, 4.2, 5.0 and 5.5 percent in the respective quantiles. Expenditures are higher among highly educated heads in urban areas and this finding is consistent with earlier studies (Nguyen et al., 2006; Chamarbagwala, 2009; Maitra & Vahid, 2006).

### **Conclusions and Policy Implications**

Various household characteristics are considered in this study. It is useful to summarize the main findings of this study with their policy implications. Quantile regression is used for decomposition at 20th, 40th, 60th and 80th quantiles. Dummy variables for education, occupation, gender and industry are used. The results of the analysis reveal that factors such as household size, high skilled occupations, agriculture, below primary, primary education and middle education of the head have direct effect on consumption patterns. For example, as the age of the head of household increases, per capita expenditures increase. It may be because as the age of the head of the household increases the number of dependents also increases.

Per capita expenditure is higher in agriculture in upper quantiles. It may be because they spend more on their life to maintain their status. Whereas the poor usually do not own lands and they are not as much status conscious as are the rich. So the poor spend only on buying the necessary commodities of life.

In rural areas of Pakistan household size and low level of education deteriorate inequality while high skilled occupation negatively affects per capita expenditures in middle quantiles. Per capita consumption expenditures are higher for age, female headed households, medium skilled, agriculture, modern services, traditional services and higher education in 2005-06. The results suggest that female headed households in rural areas have higher per capita expenditures; this may be due to family size. Usually women in rural areas have more children and combined family system as compared to women in urban areas. So they need to spend more. Moreover, social customs compel them to spend more on social occasions like engagement and marriage ceremonies. Per capita expenditure is higher in traditional services in rural areas. This could be because of social customs and Pakistani mores.

Urban decomposition results show that expenditures for age, high skilled occupations, medium skilled occupation and manufacturing are higher.

The results suggest that the female headed households in rural areas have higher per capita expenditures; this may be due to family size and social customs. Moreover age, high skilled occupations, agriculture and higher education are most dominant factors contributing towards equality in both rural and urban areas. Higher education and better employment opportunities contribute to higher consumption expenditures. Any policy to reduce consumption inequality must concentrate on high skilled occupations, agriculture and higher education.

The results show that large household size and lower levels of education are the factors that contribute to increase consumption inequality. Therefore, it would be better to keep family size small and easily manageable especially in rural areas of Pakistan. Since rich households can afford investments in education and family planning, these facilities should be subsidized for the poor.

In this paper we have shown that consumption is affected by households' demographic characteristics like household size, age, gender, occupation, industry and education and these are the major factors that should be included in measuring welfare. It is, therefore, suggested that without considering these factors, any comparisons among households could lead to incorrect conclusions.

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# INTERACTIVE INFLUENCE OF JOB STRESS AND JOB DEMANDS ON EMPLOYEE NEOTERIC WORK BEHAVIOR: AN EVIDENCE FROM NON-GOVERNMENT ORGANIZATIONS

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## Abstract

*This study aims at the inspection of the influence job demands (stressors) on the innovative work behavior of employees working in non-government organizations, along-with the mediational influence of job stress resulted from high level of job demands. Following suggestions of Gardner and Cumming's, (1988), Theory of Activation, which revealed that the job demands up to specified magnitude improve cerebral behavioral performance and trigger neoteric work behavior. Assessment of job demands was done by using the scale adopted from Van Yperen and Hagedoorn (2003), scale for measurement of job stress adopted from Cavanaugh et al. (2000) while for the measurement of innovative work behavior the scale adopted from Khaola and Sephelane, (2013) was used. Cross-sectional design was implemented for testing hypotheses in non-contrived environment via administration of questionnaires among 510 employees of non-government sector following the Census method i.e. survey of the whole population. Statistical tools were applied and the results retrieved were the same and in line with the propositions supporting these affiliations.*

**Keywords:** Job Demands, Job Stress, Neoteric Work Behavior, Cross-Sectional Design.

**JEL Classification:** Z000

## Introduction to the Study

In modern days, organizations demand more neoteric work behavior from their employees, and it is because of the truth that the phenomenon of neoteric work behavior has become prerequisite for the existence of both employees and organizations who are in run for survival in modern day's dynamic business settings, however research in this area is still in nascent phases and numerous organizations of emerging nations around the globe are unable to ensue neoteric practices (Scott & Bruce 1994; Spiegelaere et al., 2012, Martin et al., 2007; Jong & Hartog, 2007; Pasha & Iqbal, 2002).

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As globally justified frequently, employees of several organizations feel stress while at work because of the complex and incongruous nature of the load of work i.e. job demands which inevitably result in many problems related to behavior, thus resulting in a net underperformance of the organization. Health and fitness issues arising due to job stress resulting from job demands consist of tension and depression, skeletal disorders, and disease of heart, and the consequence of all such problems is low novel behavioral performance and outcomes at job, plus it also influences the somatic, mental and communal robustness of employees (International Labor Organization [ILO], 2002; Bano & Khan, 2014; Butt, 2009). Suli (2010) recommended that, if the endurance level of the employees is not taken care of while increasing their job demands for triggering neoteric work behavior may result in low job performance. Another work on innovation by Ven (1986) states clearly that catastrophes are required at times for making employee act and employees don't go beyond their action thresholds and work innovatively unless confronted with direct source of problems, the role of stress was also highlighted by him in triggering neoteric work behavior of employees, and that being so, a recommendation was made by Ven (1986) to investigate the influence of job stress on novel working behavior capacities of employees. Ganster (2005) also advocated the same as, according to him job demands consequently lead to job stress and due to that some of the influences of job demands may be mediated by job stress. Nevertheless, as far as I know, no previous exploration has revealed this association of job demands and neoteric work behavior of employees in existence of stress at job as arbitrator (mediator) of the link of job demands and neoteric work behavior of employees employed in non-profit sector, current exploration fill this gap in knowledge via addressing the questions, that what is the impact of job demands and job stress on employee's neoteric work behavior? And how neoteric work behavior may get instigated via job stress? Conflicts and ambiguities regarding job are caused by high level of demands of jobs in employees of non-government organizations which lead to complexity and job stress, as revealed by the scrutinized literature. The current situation in non-governmental organizations is forcing employees of these organizations to renovate their procedure of operation, because of the fact that working in such organizations is a job regarded as stressful; because of the demanding nature of job where contrasting demands of job, long working hours and both somatic and physical demands result in stress at job, and for management of such high level job demands it is vital to behave innovatively and come up with invention and implementation of neoteric ideas (Khurshid et al., 2012; Butt, 2009; Bano & Khan, 2014; Suli, 2010; Janssen, 2000). Thus, the current study focuses on the neoteric work behavior of employees employed in non-government sector of Pakistan.

### **Literature Review**

Jobs that are broad demand more from the employees and require exuberant amount of exertion and consequently may lead employees to behave and work innovatively, as such challenging jobs might help employees to gain more understanding regarding their jobs and come up with neoteric answers to challenging jobs (Dorenbosch et al., 2005).

According to the study conducted by Jong et al. (2000) jobs which pose a high level of stress

might lead to fitness issues while dynamic jobs which combine complex job demands and control may lead to better health outcomes. A positive association was found by Janssen, (2000) between demands of the job and neoteric work behavior of employees but only then when the employees feel that their efforts are rewarded fairly. Zhu Suli (2010) in the presence of positive affections found a positive link between job demands (mental stressor) and neoteric work behavior of employees. Another pair of researchers Fritz and Stonnntag (2009) showed an affirmative affiliation of the connection of work load (job demands as stressors) and neoteric work behavior of employees. Furthermore, Martin et al. (2007) revealed via their study that the affiliation between workloads and neoteric work behavior is an affirmative one in presence of high-level job control. On the basis of these affiliations stated above the current study also hypothesize an association that is affirmative between job demands and neoteric work behavior of employees (Spiegelaere et al., 2012).

Thus, from that it can be proposed that:

*H1:* There is a positive affiliation between job demands and neoteric work behavior of employees. Job stress according to Leung and Chan (2007) is not just the repercussion of job demands which can be measured and are qualitative in nature, nevertheless, one of the personal stressors at job is the behavior of employees which is also exaggerated by it. A model of demand control presented by Jong et al. (2000) showed that combination of demands of job without control at job may result in adverse effects on the wellbeing of the employees and may result in negative outcomes as the like of stress at job and job strain, however, in combination they may predict affirmative outcomes that is sense of satisfaction and challenge, from these it is clear that a consequence of demands of job is stress at job, which in absence of job resources and control might lead to adverse situation and may also result in strain at job and illness (Jong et al., 2000; Bakker & Demerouti, 2007). Ganster (2005) also explored the affiliation among job demands and job stress, and he documented that job stress is the outcome of workload (job demands), as job stress is the reaction to the complex nature of conflicting demands of job. Another study done by Bakker and Demerouti (2007) revealed that the load of work that is the demand of the job result in strain and stress at job. A study conducted by Srivastava (2012) showed that some of the dimensions affiliated to job demands resulted in job stress. The longitudinal study of Idris, (2011) also revealed that with the passage of time job stress and job strain were predicted by role ambiguity and role overload. In accordance to Leung et al. (2007) individual related stressors may also take active part along with strain and load of work at job hence, on the basis of such postulations this is presumed by the current study that:

*H2:* The association among Job demands and job stress is affirmative.

Stress management, conflict and obscurity are vital for guaranteeing creativity, and stress at job might be one of the most suited phenomena that has an impact on creativity (Tang & Chang, 2010). According to Van De Ven (1986) who suggested and affirmed that, to perform the extra role i.e. neoteric work behavior employees need to be challenged personally i.e. with stress at job, as employees may not act and go beyond their limitations unless and until they are confronted with challenge. The very same proposition was also affirmed by Bakker and Demerouti (2011) who, via

their study, reported that the nature of work must be complex, challenging and extra demanding so that employees may convert their resources at job into enjoyment, due to which there is need of jobs which pose challenge to the employees. Suli (2010) investigated and revealed a positive link between stressors (psychological) and demands of jobs. Another research by Fritz and Stonnetag (2009) also showed that there is an affirmative association among stressors and work behavior that is pro-active. Via his study Janssen (2000) showed that there is a positive link between psychological stressors and neoteric work behavior of employees. A multifaceted affiliation was established by Byron et al., (2010) regarding affiliation related to job stressors and job related neoteric behavioral outcomes. Tang and Chang (2010) via their investigation revealed both positive and negative link among job stressors and creativity. hence, on the basis of the above stated investigations, it is presumed by the present study that:

*H3* Stress at the job has positive affiliation with the neoteric work behavior of employees.

For exploration of affiliations concerned with job demands (stressors) a theory called Activation theory is frequently used by investigators in the field of psychology. An elevated level of stimulation is caused in employees via elevated level of job demands which lead to stress at job and this prominent state and level of stimulation consequently result in motivating employees to get accustomed accordingly. In response to this state of stimulation the employees may alter dually, firstly they may amend and change themselves accordingly in order to deal with increased level of stress at job via improvement of their skills, abilities, and expertise. However, the other way is the regulation of the job itself (Suli, 2010; Gardner & Cummings 1988; Ganster, 2005). A complicated affiliation among job stressors and neoteric work behavior of employees showed by Byron et al. (2010) which according to him depends upon the basis and form of the job stressors. According to the research of Tang and Chang (2010) job stress is triggered by both the qualitative and quantitative load of work along with exaggeration via stressors. As maintained by the investigation carried out by Janssen (2000) an escalating affirmative link was explored and revealed between job demands and behavioral repercussions i.e. neoteric work behavior, but only in the presence of the feeling that they have been rewarded fairly for their work. Hence, on the basis of the background stated above it is presumed by the current study that, demands of job have a positive link with job stress and job stress hence, is presumed to be affirmatively affiliated with employee neoteric work behavior (Ganster, 2005; Janssen, 2000; Suli 2010; Martin et al., 2007). Therefore, on these bases it can be postulated that:

*H4*: Job stress mediates the association concerning job demands and neoteric work behavior of employees.

## **Research Methodology**

### *Procedure*

The procedure of collection of numerical data and the use of statistical techniques was employed. The best suited qualitative approach was applied in order to minimize errors, control

biases, unnecessary influences and conduction of analysis via objective assessment and employment of techniques that are statistical. According to Butt (2009) the lack of coping resources which help in coping stress is one of the major causes of job stress in Non-government organizations of Pakistan, the non-government sector workers are confronted with the problem of stress at job because they have to cope with inconsistent job demands, hence, the study will gather data from employees working in Non-government sector of Chitral. The target population of this study comprised of employees operating at all levels in those Non-government organizations, which are operational in district Chitral. In this study, no sampling technique was used and all of the population was studied as a whole by following the census method. The reason of using census method was that the population of the study was small. The data was collected through self-administered questionnaires on a 5-point Likert scale, with the help of which the respondent's attitude's intensity and experiences about the variables of interest could be indicated. A pilot test was carried out among the targeted population because of the fact that pilot test is useful for identification of problems in research related to methodology and tools for data gathering. While for encouragement of the respondents to come up with genuine and correct responses their information's confidentiality was assured. Employees of the non-government sector of Chitral were administered with 510 questionnaires. Out of the total submitted 240 responses were gathered back. Which signifies that a response rate of 47% was achieved. Finally, 177 questionnaires were left for analysis after removal of questionnaires that were incomplete and had substantial outliers.

### *Research Setting and Design*

The objectives and hypotheses of the current study are defined completely in detail via following prearranged configuration, hence, the present study is a formalized research. The purpose of the research is enquiry and inspection of interactions among the study's variables of interest, therefore, the study is statistical by nature. The study is carried out in real environment; hence, it is a field study. Data collected at one point in time, therefore, from point view of time dimension the study is cross-sectional. While with respect to communication mode, the study is Interrogative, because of the fact of administration of survey questionnaires via the study for data gathering. The study had a particular set of objectives and assessed the affiliations among the interest variables therefore, this is a correlational study with a descriptive nature of design.

### *Measures of the Study*

An 11-itemed scale for the first time developed by Ganster and Fuslier in 1989 and later on used by Yperen and Hagedoorn (2003) was adopted and used for measurement of job demands i.e. qualitative. A 5-point Likert scale was used for the demonstration of all of the items ranging from '1 (never)' to '5 (always)'. The Cronbach's alpha value noted for the questionnaire was satisfactory at .757. For measurement of job stress a scale used by Cavanaugh et al. (2000) was adopted, Items relevant to job stress i.e. Challenge and hindrance related job stressors were included in the scale. A

5-point Likert scale was used for the demonstration of all of the items ranging from '1 (no stress)' to '5 (Great deal of stress)'. The Cronbach's alpha value noted for the questionnaire was satisfactory at .704. A 9-itemed scale used by Khaola and Sephelane (2013) in thier study was adopted for measurement of neoteric work behavior of employees. Also used by Janssen (2000) in his study for measuring neoteric work behavior. A 5-point Likert scale was used for demonstration of all of the items ranging from '1 (never)' to '5 (always)'. The Cronbach's alpha value noted for the questionnaire was high at .814.

### *Analysis and Results*

For checking the convergent validity factor analysis was employed. Principal component analysis with varimax rotation was implied for conducting factor analysis so that every single dimension can be analyzed. All of the assumptions of the factor analysis were fulfilled, as all the scale items included in the analysis were above the set standard of factor loading of .50. The KMO value should be above or equal to .60 and the test of Bartlett should be significant as implied via assumptions. Regression analysis was used for testing all the hypotheses. For checking divergent validity (statistical measurement of affiliation among two variables) bivariate correlation was implied. Table 1 shows Means, Standard Deviations and Correlations.

Table 1  
*Means, Standard Deviations and Correlations*

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>Mean</b>	<b>S.D</b>
JD		.511** .000	.249** .001	3.367	.557
JS			.427** .000	3.170	.575
IWB				3.876	.553

The initial proposition of the exploration stated that job demands affirmatively effect the neoteric working behavior of non-profit sector employees. In the first step of regression analysis, control variables were entered. Sequentially to check variation in the neoteric work behavior of employees' job demands was entered as predictor variable. 0.057 ( $F=11.56$ ;  $P<0.01$ ) was the adjusted  $R^2$  value and for job demands the beta value was 0.247 ( $t= 3.401$ ;  $P<0.01$ ). Which signifies that a variation that is significant is explained by job demands in neoteric work behavior. The results obtained were in line with and supported the study's first hypothesis. The table below shows some of the vital obtained values of regression analysis.

Table 2

*Summary of Regression of Job demands and Employee Neoteric Work Behavior*

	<b><i>Unstandardized Beta</i></b>	<b><i>Standard Error</i></b>	<b><i>Standardized Beta</i></b>	<b><i>Probability Value</i></b>
Constant	3.044	.227		.000
JD	.247	0.073	.249	.001
R <sup>2</sup> = .062				
ΔR <sup>2</sup> .057				

In accordance to the statement of the second hypothesis there is a positive affiliation amid job demands and job stress. With a value of beta 0.528 (p=.000) the results revealed that there is an affirmative link between job demands and job stress. Plus, the value of ΔR<sup>2</sup> showing 25.7 % of the variation is resulted by job demands in job stress. Therefore, hypothesis 2 was also supported by the study.

Table 3

*Regression Summary of Job Demands and Job Stress*

	<b><i>Unstandardized Beta</i></b>	<b><i>Standard Error</i></b>	<b><i>Standardized Beta</i></b>	<b><i>Probability Value</i></b>
Constant	1.393	.229		.000
JD	.528	.067	.511	.000
R <sup>2</sup> = .261				
ΔR <sup>2</sup> .257				

Third hypothesis of the study was also supported and in line with the results. It was confirmed by the third hypothesis that job stress is a predictor of neoteric work behavior of employees. The value of beta i.e. .427 (p = .000) shows that 17.8% of variation was resulted in employee neoteric work behavior due to variation in job stress. Regression analysis outcomes are as under in the table;

Table 4

*Summary of Regression of Job Stress and Employee Neoteric Work Behavior*

	<b><i>Unstandardized Beta</i></b>	<b><i>Standard Error</i></b>	<b><i>Standardized Beta</i></b>	<b><i>Probability Value</i></b>
Constant	2.575	.212		.000
Job Stress	.411	.066	.427	.000
R <sup>2</sup> = 0.182				
ΔR <sup>2</sup> = .178				

Baron and Kenny (1986) steps of regression analysis were used for checking the hypothesis regarding mediational impact of job stress among job demands and neoteric work behavior of employees. The regression analysis results are illustrated by Table 5. And as revealed by results of the regression analyses:

1. The mediator was predicted by job demands at first step i.e. job stress ( $\beta = .511$ ,  $p < .01$ ).
2. The criterion variable of neoteric work behavior was significantly predicted i.e. ( $\beta = .249$ ,  $p < .01$ ) by job demands.
3. Simultaneously both job demand and job stress were entered at third step. The affiliation concerned with job demands and neoteric work behavior of employees was significant in the existence of the mediating variable i.e. job stress with increment in value of beta i.e. ( $\beta = .406$ ,  $p < .01$ ).

However, the interdependence between work load i.e. job demands and neoteric work behavior of employees in absence of the mediator no more remained significant which clearly shows the full and complete mediational influence of stress caused at job amid job demands and employee neoteric work behavior. Sobel test was carried out and the value of the test i.e. ( $z = 4.885$ ,  $p = 0.000$ ) showed full mediation in the model. Hence, from the results it was revealed that the association among job demands and neoteric work behavior of employees is fully mediated by Job stress. Therefore, hypothesis 4 of the study was also supported by the results obtained.

Table 5

*Summary of Regression of the Mediating Influence of Job stress on Employee Neoteric Work Behavior*

	Standardiz ed Beta	Standard Error	Probability Value	Model Fit	
				Co-efficient of Determinati on	F-Statistic
JD — JS (a)	.511	.067	.000	.261	61.860
JS — IWB (b)	.427	.066	.000	.182	39.035
JD — IWB (c)	.247	.073	.001	.062	11.565
JS — IWB (c')	.406	.007	.000	.182	39.035
JD	.042	.079	.602	.184	19.573

## Discussion, Conclusion, Limitations and Implications

### *Discussion*

Major objective of the study was to investigate the influence of demands of job on Neoteric work behavior of employees along with the mediational influence of job stress between work load i.e. demands of the job and neoteric work behavior of employees. Several regression analyses were

carried out for testing the hypothesized affiliations.

The first hypothesis perceived that employees with high level demands at job would exhibit a higher level of behavioral performance i.e. Neoteric work behavior up to a certain level which is in line with results of Tang and Chang (2010) and Spieglaere et al. (2012) who found a positive relationship among dimensions of job demands and creativity. The findings of study are in line with Activation theory presented by Gardner and Cummings (1986) according to which arousal in job demands to a certain level stimulate employee behavioral performance and employees get engaged in higher behavioral performances, an affirmative affiliation among job demands and neoteric work behavior was found by Martin et al. (2007) plus Janssen (2000) via his study showed that employee Neoteric work behavior is a strategy used to cope with high level of job demands.

The premise of the second hypothesis was that employees who perceive higher level of job demands would feel higher level of job stress. The results of the present study regarding this hypothesis are in line and consistent with the research carried out by Leung et al. (2007) who found that job stress is caused due to both qualitative and quantitative job demands. The findings are also in line with the study of Idris (2011) who studied job demands as predictors of severe form of stress. Also, in line with Ganster (2005) who suggested that job stress is a consequence of job demands. As stated by the third hypothesis employees who regard job stress as a problem resolving and coping strategy will show and indulge in more neoteric work behavior. Results of the study supported the results of the study carried out by Fritz and Stonnntag (2009) who via his investigation revealed a positive link between job stressors and Neoteric work behavior of employees, in addition results are also in line with the study of Byron et al. (2010) who also revealed a positive affiliation among job stressors and employee neoteric work behavior.

The Fourth hypothesis was regarding the influence i.e. mediating of job stress amid job demands and neoteric work behavior of employees. The relationship between job demands and neoteric work behavior of employees is well established and it is also documented by Ganster (2005) and Ven (1986). The results of this mediational influence of job stress amid job demands of job and neoteric work behavior of employees are consistent with research study conducted by Janssen (2000) who showed an affirmative affiliation amid load of work i.e. job demands and neoteric work behavior of employees, added to that the investigation done by Leung et al. (2007) also found an affirmative linkage between demands of job and stress at job, another study conducted by Fritz and Stonnntag (2009) also showed an affirmative affiliation between job stressors and employee neoteric work behavior. Hence, supporting this enhancing mediating influence of job stress amid job demands and neoteric work behavior of employees.

### **Conclusion**

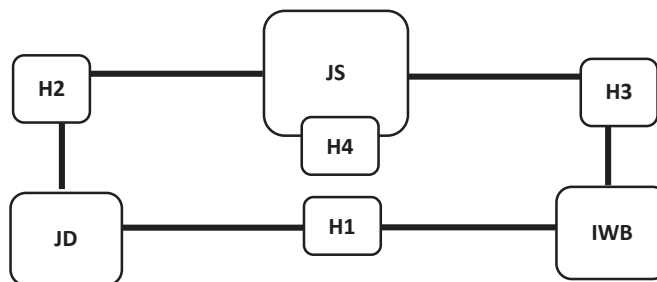
From the above discussion it is clear that the present research provide support for the proposed usefulness of a model mediated by job stress in connection to the link between job demands and neoteric work behavior of employees. Results of the regression analyses supported our predictions that job demands effect employee neoteric work behavior directly plus via the mediated pathway of job stress, in addition to that the direct impact of job demands on neoteric work behavior, job demands on job stress, job stress on neoteric work behavior were also investigated and supported by the interpretation and analyses of predictions. Hence, it is revealed via the results of the study that high level of demands of job trigger and help in activation and arousal of neoteric capacities of employees both via direct route and via the mediated pathway in presence of job stress i.e. mediator. Hence, the current study will be beneficial for further researches relevant to demands of the job and neoteric work behavior of employees via providence of a beneficial framework that is theoretical, so that propositions form literature can be integrated.

### **Study Limitations & Implications**

The sample majorly was constituted of male employees i.e. 68.4%, hence, samples should be pinched from various professions and forms of labor for replication of the present study by using added consistent gender dissemination. The study design is cross-sectional which is another limitation of the present investigation, as the dynamic nature of stressors and outcomes would be apprehended in a much better way if longitudinal design is applied. The cumulative dimensions of demands of the job are used by the current study, nevertheless future studies associated to such interactions may add more dimensions of job demands to their studies (Martin et al., 2007). Moreover, the forthcoming studies could be improved by having assessments over time and across denominations; including studies that cross-culturally replicate the present study and make comparisons with culturally diverse organizations. The current study also has some implications on applied level, job demands are under the control of organizations, therefore, for achievement of success, gaining competitive advantage and growth of organizations, organizations must foster neoteric work behavior at individual level, and they must handle increasing job demands for increasing the neoteric capacities of employees (Martin et al., 2007). Hence, administrative management can implement current research model in various organizations, so that employees could handle job demands up the extent of endurance level of employees, because job demands beyond the endurance level of employees may prevent and influence behavioral performance i.e. neoteric work behavior (Suli, 2010).

### **Research Model**

The results of the current study supported all the affiliations and hypotheses depicted by the research model research and also in line with the past researches.



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# MEASURING COMPETITION IN BANKING INDUSTRY: EVIDENCE FROM LATIN AMERICAN ECONOMIES

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## Abstract

*This study investigates the speed at which the banking sector of Latin American countries adjust to equilibrium levels in the long run. For this purpose partial adjustment process to Panzar and Rosse H-Statistics is used. Markets adjust towards the long-run equilibrium in a non-instantaneous manner. In order to estimate the structure of market the adjustment speed is of crucial importance. In this paper, an empirical model on the basis of partial adjustment model is developed to measure this convergence speed. Empirical results from the Latin American economies suggest that the transition and speed of adjustment towards the long-run equilibrium varies from market to market depending on the profit deviation from market averages. It is suggested that profit deviations should be monitored by the banking regulators and all banks in Latin America should keep an eye on optimization to remain competitive and sustainable in the long run.*

**Keywords:** Banking, Competition, Efficiency, H-Statistics, Partial Adjustment Model.

**JEL Classification:** G210

## Introduction

It is evident that competition is the most important factor that leads to the emergence of new products/services and growth of existing products/services. Due to competition it is vital for organizations to minimize the product prices without any compromise on quality. Inefficient organizations that Do not adopt the policy of optimization automatically fail to compete.

Performance of business is always considered a dependent variable for the competition that exists in the respective market. The performance of banking industry in any country is considered as the backbone of its financial system that leads to economic stability (Guzman, 2000). Banks around the globe are also facing the same issue of competition for the products/services that are being offered. Efficiency of highly competitive banking industry is greater than less competitive banking industry.

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According to the partial adjustment model, banks try to adjust their profit levels in future if some deviation in their profit is observed as compared to market profits. This process moves the market from the state of in-equilibrium to equilibrium. On the other hand, competitive environment is interpreted as the duration of this adjustment by the markets.

There had been little discussion about the speed of adjustment of banking industry towards equilibrium in the long run. Moreover market concentration is also significant as it makes the banking industry more stable. The relationship between market power (concentration) and efficiency needs investigation due to negligible literature regarding their combined optimization.

### *Objective of the study*

The research on banking competition in Latin American economies is negligible. The study serves two objectives: Firstly, to introduce a dynamic adjustment process to Panzar and Ross (PR) Model that addresses the issue of biasness in revenue equation. Secondly, the study measures the competition levels within large and small banks of Latin America.

## **Literature Review**

### *Banking Competition and Efficiency*

Literature on competition and efficiency of banking industry is widely available and is continuously growing. Boot and Thakor (2000) identifies the link between the banking competition and the ease of access for customers towards banking product/services. The problem of holding up cost normally arises in less competitive environment (Petersen & Rajan 1995). Holding up cost can be effectively controlled when there is a high competition and the customers easily access the banking products/services. Besanko and Thakor (1992) investigated that due to more competition during previous decades, the global banking industry is forced to cut its intermediation cost. This measure helped the banks to enhance the rate of growth by reducing the cost of capital. Small and Medium Enterprises (SMEs) avail significant financing facility from banking sector. Most of the SMEs are opaque in nature that leads to low access to lending in case of high market power of banking institutions. Improved technology and better information may offset these negative effects. However Hauswald and Marguez (2003) argued that competition is partly endogenous to the banks' investment in technology and information enhancement tools. Some other models (Dell' Ariccia & Marquez, 2004, 2005) show ambiguous results regarding the causality between banks' stability, access, competition and technology.

An effective monetary policy is also a major cause of improved efficiency and effectiveness of banking industry (Cecchetti, 1999). Several empirical studies are conducted that confirm this strong link (Collender & Shaffer, 2003; Jayaratne & Strahan, 1996). It is observed that the relationship

of efficiency and concentration in highly competitive banking sector and less competitive banking sector shows different behavior (Goddard & Wilson, 2009; Prasad & Saibal Ghosh, 2005; Bikker Haaf, 2002). Casu and Girardon (2006) used H-statistics for measuring banking competition for the sample of fifteen EU countries and measured banking efficiency using the non-parametric approach DEA (Data Envelopment Analysis). Results showed no relationship between banking competition and efficiency. In order to find out any relationship between banking efficiency and competition, Weill (2004) studied a sample of twelve countries of European Union. Stochastic Frontier Approach (SFA) was used for estimating of banking efficiency levels. Efficiency and competition showed a negative relationship.

A study carried out for five European countries that include Italy, the UK, Spain, Germany and France for the period 1986-1989 shows monopolistic competition in these banking markets (Molyneux et al., 1994). Using the PR model, the study was the first of its kind in Europe. The result clearly depicted absence of integration in major European countries due to capital controls and tight supervisory role of regulators. Bikker and Groeneveld (1998) carried out a study on sample of European countries for the period 1989–1996. The study used novel approach in measuring competition. Different weights were allocated to sample banks. The percentage share of each bank in the total banking assets is used to compute the weights. Results suggested steady competition during this period. In another study, Staikouras et al. (2006) suggested that larger banks in EU face more competition as compared to smaller banks.

Bikker and Haaf (2002) studied the competition levels of twenty three OECD countries for the period 1988-1998. The results suggested monopolistic competition and depicted that large banks faced stronger competition as compared to small banks. This phenomena was also confirmed by the study of De Bandit and Davis (2000). Using data of seven Latin American countries Levy Yeyati, E. et al. (2007) studied the evolution of competition levels and its impact on banking market concentration levels. Their results indicated monopolistic competition. The results also concluded that banking consolidation in Latin America did not have any significant impact on competition levels instead they found an inverse relation between various factors.

Gischer and Stiele (2004) suggested monopolistic competition in German savings banks during the period 1993-2002. Significant evidence was not found regarding the fact that big banks perform better than their counterparts. For the period from 1994 to 2001, Claessens and Laeven (2004) studied banking competition analysis using H-statistics. Sample included fifty countries from developed and developing world. Their results suggested that market structures describe the monopolistic competition in a better way. Furthermore, the H-statistics is regressed on country specific characteristics to establish relationship between variables that shape the market structure. Rafay and Gilani (2016) carried out a detailed comparative study of banking competition in intercontinental markets of US, EU and Australia New Zealand (ANZ). Results suggested that banking markets in all three continents are working under monopolistic competition environment,

with no significant difference in H-statistics. During the period from 1996 to 2015, Khan and Hanif (2017) explored twenty four commercial banks of Pakistan. Results of balance panel data analysis depicted that market structures are perfectly competitive and that monopolistic characteristics exist in Pakistani banking sector.

### *Panzar and Rosse Banking Competition Model*

The model of banking competition model by Panzar and Rosse (1982, 1987; 1997) is a widely used model for the measurement of the degree of banking competition. Cross sectional data is used for this purpose that focuses on, among other factors, revenues from input prices. Table 1 shows H-statistic ranging between 0 – 1 which is the total of elasticity of the reduced form revenues. The null hypothesis shows monopolist competition and can be rejected if , which is based on the assumption that the transition between two equilibrium points is instantaneous. This paper discussed the effect of non-instantaneous adjustment on the index H.

Table 1  
*Range of H-Statistics*

Estimated H	Competitive Environment
$H = 1$	Perfect competition
$0 < H < 1$	Monopolistic competition free entry (Chamberlinian equilibrium)
$H \leq 0$	Monopoly equilibrium

### *Data description*

Panel data set (unbalanced) for thirteen Latin American countries is used for the purpose of analysis. The data is extracted from Bank Scope database for the period 1990-2018. The adjusted PR model is used to estimate the speed at which the Latin American banking market adjusts itself to long-run equilibrium market structure.

### *The Empirical Model*

Following revenue equation is used to estimate H-statistic:

$$\ln\left(\frac{TR_{i,t}}{TA_{i,t}}\right) = \alpha + \beta_1 \ln(W_{1,i,t}) + \beta_2 \ln(W_{2,i,t}) + \beta_3 \ln(W_{3,i,t}) + \gamma_1 \ln(Y_{1,i,t}) + \gamma_2 \ln(Y_{2,i,t}) + \gamma_3 \ln(Y_{3,i,t}) + \varepsilon_{i,t} \dots\dots\dots (1)$$

The revenue equation 1 includes dependent variable in terms of Total Revenues and Total Assets Ratio (Rafay & Gilani, 2016).

$W_{1,i,t}$  = Total interest expenses ÷ Total deposits (proxy for input price of deposits)

$W_{2,i,t}$  = Personnel expense ÷ Total assets (proxy for labor cost)

$W_{3,i,t}$  = Other operating expenses ÷ Total assets (proxy for input price and other fixed capital)

$W_{1,i,t}$  = Equity ÷ Total assets

$W_{2,i,t}$  = Net loans ÷ Total assets, and

$W_{3,i,t}$  = the total assets.

Control variables for specific effects of banks are explained by  $Y_{1,i,t}$ ,  $Y_{2,i,t}$  and  $Y_{3,i,t}$ . The total elasticity of factor prices is defined as H-statistic in PR model. In view of this, the derivation of H-statistic can be:

$$H = \beta_1 + \beta_2 + \beta_3 \quad \dots\dots\dots(2)$$

The partial adjustment model is based on the accelerator model of economic theory. Following model is set up to study the dynamics of banking competition. The partial revenue equation using the partial adjustment model is depicted as:

$$R_{it} = R_{i,t-1} + \lambda(R_{it}^* - R_{i,t-1}) = (1 - \lambda)R_{i,t-1} + \lambda R_{it}^* \quad \dots\dots\dots(3)$$

In the above equation 3 two latent variables namely  $R_{i,t}^*$  and  $\lambda$  are used that are directly observable. is the revenue equation in long-run equilibrium and defined as a function of factor input prices and bank specific variables  $Y$ .

$$R_{it}^* = \beta_1 \ln(W_{1,i,t}) + \beta_2 \ln(W_{2,i,t}) + \beta_3 \ln(W_{3,i,t}) + \gamma_1 \ln(Y_{1,i,t}) + \gamma_2 \ln(Y_{2,i,t}) + \gamma_3 \ln(Y_{3,i,t}) + \varepsilon_{it} \quad \dots\dots\dots(4)$$

All three variants of revenue equation are used in this dynamic model.  $\lambda$  is defined as a function of deviated profits and can be written in linear form as follow:

$$\lambda = \gamma_1 + \gamma_2 DP_{i,t} \quad \dots\dots\dots(5)$$

The speed of adjustment is the function of firm deviated profits from normal market profits. Deviated profits are defined as squared deviation of market net interest income to total assets from the sample average of market net interest income to total assets.

$$DP_{i,t} = \frac{NetInterestIncome_{i,t}}{TotalAssets_{i,t}} - \frac{NetInterestIncome_{i,t}}{TotalAssets_{i,t}}^2 \quad \dots\dots\dots(6)$$

It is evident that the speed of adjustment will also be high in case of high deviated profits or market is

in state of dis-equilibrium. Market becomes more attractive due to consistent profit deviations from normal market profits that directly affect speed adjustment coefficient. As a result market quickly moves back to equilibrium state.

$$R_{it} = (1 - \gamma_1 - \gamma_2 DP_{it}) R_{it-1} + (\gamma_1 + \gamma_2 DP_{it}) \left\{ \beta_1 \ln(W_{1,it}) + \beta_2 \ln(W_{2,it}) + \beta_3 \ln(W_{3,it}) + \gamma_1 \ln(Y_{1,it}) + \gamma_2 \ln(Y_{2,it}) + \gamma_3 \ln(Y_{3,it}) + \varepsilon_{it} \right\} \quad \dots\dots\dots(7)$$

Effect of adjustment speed in PR revenue is considered in equation (7) which means that if the deviation in profit is high,  $\lambda$  will have more effect on coefficients of prices of factor input. Conversely, if markets are in equilibrium or deviated profits are equal to zero, coefficients of prices of factor input will not be effected by  $\lambda$ .

## Results

The competition level in Latin American banking industry falls under monopolistic competition as all countries have H-statistic . The null is rejected that is  $H > 1$  or  $H < 0$  with 95% confidence interval. Uruguay, Chile, and Bolivia have the highest H-statistics 0.90, 0.79 and 0.75 respectively. Alternatively, it is depicted that countries with  $0 < H$ -statistics  $< 1$  values are having a monopolistic market structure. Peru and Brazil have the least competitive banking industry. In Latin American banking industry, large banks in Paraguay and Surinam have the highest H-statistics, 0.90 and 0.80 respectively, suggesting monopolistic competition. On the other hand, large banks in French Guiana and Ecuador have more competitive environment as they have lowest H-statistics 0.36 and 0.40 respectively. Small banks in Guyana and Paraguay have monopolistic competition environment with H-statistic 0.90 and 0.89 respectively. Small banks of Peru and Ecuador have more competitive environment as they have lowest H-statistics 0.45 and 0.48 respectively. Results (Table 3) summarized the fact that bank size is important in its operational activities, which ultimately affected the market competition in banking sector as a whole (Rafay & Gilani, 2016).

For both scaled and un-scaled revenue equations, the FE estimator produces H-statistics between zero and one for all the countries. However the GMM produces higher H estimates than FE estimator. Table 4 depicts FE results whereas GMM estimation are shown in Table 5. Uruguay have a higher  $\lambda$  value of .90 which indicated the banking markets with higher H-statistics (representing markets competition close to perfect competition) also have higher speed of adjustment. Such results are in line with the hypothesis that markets with perfect competitions adjusted themselves towards equilibrium more quickly as compared to markets with less competition (Rafay & Gilani, 2016). On the other hand, Peru and Brazil banking markets have  $\lambda$  value 0.22 and 0.33 respectively and both were facing monopolistic competition. Similarly adjustment speed of large banks was slower than small banks as shown in Table 4. All these results are in accordance with the research of Freixas and Ma (2014) that high competition leads to financial stability.

### Concluding Remarks

This paper concluded two important aspects about banking markets of Latin America. Firstly, enough evidence is available for non-instantaneous adjustment in Latin American markets. Secondly, a relationship also exists in these markets between competition level and market adjustment rate to the long run equilibrium. Regarding policy implications, it is clearly evident that concentration is favored at the expense of competition resulting in higher inefficiency costs. In view of the foregoing, it can be suggested that profit deviations should be monitored by the banking regulators. Moreover all large and small banks should keep an eye on optimization to remain competitive and sustainable in the long run. Studying the competition levels and rate of adjustment towards the long-run equilibrium may provide insight about the global banking industry and its trends which can also be used to avoid the potential financial crises, an issue that is left for future research.

Table 2

*Average profit Deviation*

Countries	Profit deviation
Brazil	2.24
Colombia	2.06
Argentina	1.15
Peru	1.17
Venezuela	4.5
Chile	2.22
Ecuador	1.65
Bolivia	4.44
Paraguay	5.87
Uruguay	5.28
Guyana	2.78
Suriname	4.03
French Guiana	1.57

Table 3  
*Un-scaled revenue equation with lambda coefficient*

Countries	Large banks		Small banks		Overall	
	$\lambda$	H-statistic	$\lambda$	H-statistic	$\lambda$	H-statistic
Brazil	0.46	0.66***	0.48	0.75***	0.33	0.15***
Colombia	0.51	0.51***	0.87	0.69***	0.68	0.64***
Argentina	0.71	0.68***	0.52	0.75***	0.49	0.71***
Peru	0.36	0.58***	0.90	0.45***	0.22	0.69***
Venezuela	0.74	0.54***	0.74	0.68***	0.38	0.25***
Chile	0.17	0.49***	0.65	0.79***	0.79	0.66***
Ecuador	0.62	0.40***	0.79	0.48***	0.69	0.79***
Bolivia	0.74	0.50***	0.78	0.57***	0.75	0.57***
Paraguay	0.15	0.90***	0.83	0.89***	0.69	0.75***
Uruguay	0.74	0.44***	0.88	0.73***	0.90	0.81***
Guyana	0.72	0.75***	0.75	0.90***	0.46	0.77***
Suriname	0.32	0.80***	0.70	0.82***	0.55	0.65***
French Guiana	0.40	0.36***	0.88	0.59***	0.52	0.49***

Table 4  
*FE estimation with scaled and un-scaled revenue equation*

Countries	Scaled revenue equation						Un-scaled revenue equation					
	Large banks		Small banks		Overall		Large banks		Small banks		Overall	
	H-statistic	S.E	H-statistic	S.E	H-statistic	S.E	H-statistic	S.E	H-statistic	S.E	H-statistic	S.E
Brazil	0.18	0.06	0.57***	0.06	0.42***	0.06	0.45***	0.07	0.49***	0.06	0.46***	0.03
Colombia	0.42	0.11	0.39***	0.20	0.52***	0.10	0.52***	0.11	0.66***	0.22	0.59***	0.08
Argentina	0.70	0.18	0.74***	0.15	0.70***	0.19	0.70***	0.19	0.69***	0.11	0.71***	0.05
Peru	0.63	0.10	0.66***	0.01	0.45***	0.09	0.54***	0.10	0.75***	0.03	0.56***	0.01
Venezuela	0.52	0.03	0.61***	0.04	0.65***	0.05	0.45***	0.06	0.62***	0.02	0.70***	0.08
Chile	0.61	0.04	0.79***	0.05	0.88***	0.05	0.51***	0.08	0.70***	0.03	0.68***	0.06
Ecuador	0.49	0.11	0.79***	0.02	0.75***	0.16	0.65***	0.09	0.69***	0.03	0.75***	0.02
Bolivia	0.28	0.06	0.82***	0.09	0.66***	0.08	0.36***	0.11	0.51***	0.10	0.54***	0.06
Paraguay	0.80	0.22	0.65***	0.19	0.33***	0.25	0.10***	0.25	0.88***	0.15	0.22***	0.05
Uruguay	0.82	0.22	0.44***	0.26	0.40***	0.29	0.15***	0.29	0.86***	0.15	0.36***	0.06
Guyana	0.60	0.31	0.72***	0.10	0.52***	0.35	0.44***	0.18	0.78***	0.09	0.45***	0.08
Suriname	0.55	0.16	0.79***	0.05	0.59***	0.19	0.75***	0.19	0.58***	0.05	0.60***	0.03
French Guiana	0.59	0.10	0.81***	0.08	0.45***	0.15	0.66***	0.04	0.62***	0.30	0.61***	0.01

Table 5

*GMM Results for scaled and un-scaled revenue equation*

Countries	Scaled revenue equation		Unscaled revenue equation	
	H-statistic	S.E	H-statistic	S.E
Brazil	0.65***	0.08	0.90***	0.10
Colombia	0.59***	0.06	0.64***	0.08
Argentina	0.74***	0.19	0.75***	0.05
Peru	0.79***	0.06	0.70***	0.06
Venezuela	0.59***	0.31	0.71***	0.09
Chile	0.44***	0.09	0.29***	0.10
Ecuador	0.69***	0.13	0.89***	0.11
Bolivia	0.59***	0.07	0.65***	0.08
Paraguay	0.79***	0.31	0.79***	0.06
Uruguay	0.52***	0.26	0.56***	0.09
Guyana	0.70***	0.06	0.69***	0.11
Suriname	0.61***	0.04	0.52***	0.26
French Guiana	0.72***	0.08	0.61***	0.08

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# MEASURING THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY CAPITAL (ICT-CAPITAL) ON ECONOMIC GROWTH: EVIDENCE FROM SAARC COUNTRIES

Tahir Mahmood<sup>1</sup> and Sidra Bashir<sup>2</sup>

## Abstract

*Since early 90s the information technology is playing an important role in economic activities. Information and Communication Technology (ICT) is important drivers of Productivity. Modern growth theories argued that economic growth is driven by ICT related capital. However, empirical literature on this issue have produced mixed results, regarding different geographical configuration. Here, we study the impact of ICT related capital on the economic growth of south Asian countries (SAARC) from 1990-2014. Study also provides a view on this issue by assessing the role of ICT and non-ICT capital in total factor productivity of selected countries. We found that both types of capital have positive impact on growth. Empirical analysis also concludes that contribution of ICT capital for TFP is effective involving time lag.*

**Keywords:** Economic Growth, ICT-capital, Total Factor Productivity, Information Technology.

**JEL Classification:** Z000

## Introduction

Information and communication technology plays an important role in economic growth (Bresnahan et al., 1999). A study by Griffith and Van (2004) found that labor productivity in the long run is increased due to improvement in information technology. Estimates by Colecchia and Schreyer (2000) supports Griffith where contribution of ICT in productivity growth is found positive and significant in the long run. Information technology could be a source of growth, it increases investment which causes fall of its prices and it raises the use of ICT. secondly, ICT decreases the prices of newly installed capital which plays a pivotal role in the growth of an economy (Colecchia & Schreyer, 2000).

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A case study of Norway by Sapprasert (2010) suggested that the intensive ICT using industries growing faster as compare to less intensive ICT using industries. Another study by Kvochko (2013) found ICT as employment creator sector in the United States, employment in this sector is estimated by 22% up to 2020. Information and communication technology is one of the main determinant of growth in emerging sectors. Adoption of ICT improves the efficiency, transaction cost and quality of final good (Ranasinghe, 2004).

On the other side, the capitals which is not related to information and communication technology is also important factor of production. A study by Van et al. (2004), found that Non-ICT capital is still the main determinant of economic growth for transitional economies. Where the capital related to ICT is significant for the growth of developed world. Developing economies cannot absorb the technologies due to lack of capacity but ICT has the ability to turn these economies to achieve a higher growth. In the last two decades South Asia has achieved higher growth, physical capital is the main determinant of growth in these emerging economies. A study by Dewan and Kraemer (2000) estimated An inter country Cobb Douglass and found that the impact of physical capital is positive and ICT capital is insignificant for the emerging economies.

There are huge difference in per capita between developed and developing countries. Some developing thirty years ago are now highly industrialized, such as Korea and Singapore. Some transition economies in Eastern Europe have substantial populations with quite high income level. The impact of ICT in these economies may well be closer to those of developed EU economies. But there may be substantial differences between the economic behavior of large low-income economies (such as India and Pakistan). These economies have industrial capacity and mass markets in spite of low income. A large number of literature shows that information technology is one of the main determinant of growth for developed economies (Kretschmer, 2012, Holt & Jamison 2009 & Detschew, 2008) but the role of ICT in transitional economies is still interesting area. Therefore, a study on South Asian emerging economies could fill the literature gap.

The main objective is to measure the impact of ICT capital on economic growth. We used panel data of South Asian countries from 1990-2014. The study also provides a view on this issue by assessing the contribution of ICT and non-ICT capital on TFP. We found that both types of capital have positive impact on GDP growth. Empirical analysis also concludes that contribution of ICT capital is effective for total factor productivity involving time lag. Hence, ICT has a positive impact on South Asian economies.

The review of previous discussions and literature is in section 2, section 3 presents the analytical framework and econometric modeling followed by estimation procedures, data and variables used for analysis, graphical representation and data source are in section 4, section 5 presents the empirical findings and results, discussion, limitations of study and future directions are in section 6.

## Literature Review

Adaptation of ICT has integrated economies, expanding production performance at macro and micro level, improving the living standards and thus enhancing the growth of the economy. Countries with advance technologies have major contribution in total outcome worldwide because of it amazing expansion in the field of ICT. Developments through Information Communication Technologies are more pervasive than other fields of development. Information Communication Technologies, recently is more stimulating than other technologies, (see Matteucci et al., 2005). Rotmans et al. (2005) establishes that all kinds of research works are influenced by information technology and it make easy also diffusion or distribution of other technologies. Information Technology have conceded significant changes in the effectiveness and usefulness of labor by extending access to information and knowledge, it enhances the productivity by rising the labor's expertise and efficiency.

Growth of the economies is stimulated favorably by increasing marginal productivity of the factors of production. Recent theory of growth observes that in the long run country's growth positively depends on technological and scientific progress (Solow, 1957; Romer, 1990; Aghion & Howitt, 1992). Sichel and Oliner (2007) established that the elevated productivity of recognized states is primarily achieved by improvement in information communication technology. They explained how America's economic growth, for extended period, was maintained due to the improved ICT. Therefore, improving the information communication technology has favorable impacts on output.

Similarly, Van et al. (2003) discussed ICT's role in other elements of production and found that efficiency of labor was increased by improving ICT in organizations and industries. ICT's contribution in growth is also highlighted by Niebel (2014), in emerging and developing countries ICT indicated average growth rate comparatively but growth rate was low in developed world, also Non-ICT capital services growth were low as compared to ICT capital. Moradi and Kebryaee (2010) examined the impact of ICT on economic growth by using three ICT index. Economies with comparatively higher Opportunity index of ICT have stronger impact of ICT investment on economic growth. Therefore ICT investment has a significantly positive impact on economic growth as it contributes 0.8 percentage points per year to GDP. Empirically Guetet and Drine et al. (2007) works with country-level panel data for the fourteen (14) MENA countries, and evaluated the role of information communication technology development on income inequality as well as on economic growth. They found positive impact for the Oil rich countries. Jorgenson and Vu (2007), analyzing the quantification of the Information Communication Technologies capita's effects on growth for fifty countries on ICT spending, the global IT market of these countries jointly account for more than 90%. In developed economies, per capita's ICT accumulation have considerable causal effect on the efficiency of economic growth.

For Central and Eastern European transition Economies (CEEs), multi channeled contribution of information communication technology was examined by Van and Piatkowski, (2003). In case of Poland, their results indicated that capital of information communication technology will show a statistical significant contribution to productivity growth in the long-run. The Findings reveal that capital of information communication technology plays an important role in knowledge diffusion and speed of innovation, which lead to greater productivity in industries and economy through absorption of techniques, ideas and concepts of more advance economies. Ranasinghe (2004) through survey based data for Sri Lankan economy to examine the impact of information communication technology on labor market. The survey based data shows evidence for feeble user of information communication technology due to rural areas of Sri Lankan economy are not assimilated to the use of information communication technology and is much far from where it should be. Information communication technology has rapid diffusion in some parts of economy so it will accelerate extension of labor market by creating new job opportunity and destroying old jobs. In study on consents and endorsement of workers, Chandrasekhar (2001) examined that information communication technology assisted them in saving their huge goods market.

Similarly, a study by Bacchini et al. (2014) found that information and communication technologies can assist in the recovery of an economy from depression; it can contribute in the increase of 0.4 % in GDP and 1.2% in capital stock. Research by Mahyideen et al. (2012) examined ICT's contribution in infrastructure development leading to output growth for five nations of ASEAN. They examined contribution of ICT through new and conventional channels. Infrastructure affects development by private input efficiency through conventional channels. By applying more Non-ICT capital will cause lower cost of production, private capital return will be increased by rising productivity and have a helpful impact on economic growth. The infrastructure has indirect impact on productivity of labor through new channels given that public infrastructure has been improved as it can lower cost and save time. The research accomplished favorable impact of IT infrastructure on selected ASEAN nation's economic growth. Sridhar et al. (2007) observed relationship between economic growth and telephone penetration. The results, as reported for OECD economies, are significant by using simple Pearson's Correlation Coefficient, however significance level is not high as compared to reported in OECD countries. The impact of landline phones on growth indicates that landline phones add 1.62% to growth. Though, estimates are significant yet not high.

### **Theoretical Models and Estimation Procedure**

We use traditional growth framework to analyze the contribution of information technology in output. Here, we disaggregate the capital input in to ICT and non-ICT capital, Since economic growth is diverse phenomenon, we use following production process

$$Y = A F(K_{ICT}, K_N, L) \dots\dots\dots(1)$$

Here, capital stock is disaggregated into ICT capital services ( ) and non-ICT capital services ( ). The effect of ICT revolution on productivity can be analyzed through investment, the production, and possible “spillovers” of ICT (see Van Ark and Inklaar 2005).

According to Neo-Classical model, total factor productivity plays important role in economic growth, see (Solow, 1956). The growth in TFP is derived as the growth of output minus weighted shares of the growth of inputs.

$$\Delta \ln A = \Delta \ln Y - \alpha_1 \Delta \ln K_{ICT} - \alpha_2 \Delta \ln K_N - \alpha_3 \Delta \ln L \dots \dots \dots (2)$$

A study by Bresnahan et al. (1999) also highlighted the importance of relationship between ICT and TFP. Information and communication technology can be a factor of production ICT and used as an input which boots the productivity of other sectors. By rearranging equation 2 , following equation shows the contribution of ICT, non-ICT capital and labour

$$\Delta \ln Y = \alpha_1 \Delta \ln K_{ICT} + \alpha_2 \Delta \ln K_N + \alpha_3 \Delta \ln L + \Delta \ln A \dots \dots \dots (3)$$

We use following panel regression models in order to find the determinant of growth is South Asian countries

$$\Delta \ln Y_{it} = \alpha_i + \alpha_1 \Delta \ln K_{ICT_{it}} + \alpha_2 \Delta \ln K_{N_{it}} + \alpha_3 \Delta \ln L_{it} + u_{it} \dots \dots \dots (4)$$

Here, we use sample of  $t = 1, 2, \dots, 24$  observations for each country  $i = 1, 2, \dots, 4$ . A Hausman test is estimated in order to select the panel model for estimation. We also estimate the impact of ICT capital and non-ICT capital on total factor productivity by using Eq.5 . We used lags ( i.e.  $j=2$  ) in equation 5 because currently adopted ICT by labor force will take significant time period to become familiar and efficient in utilization ( see, Jorgenson & Stiroh 2000). One reason of insignificant association is found in the industry level data is time lag. With passage of time Non-ICT capital utilizes ICT and be effective input factor. A study by Basu et al. (2004) also highlighted the importance time lags in ICT productivity.

$$\Delta \ln TFP_{it} = \gamma_i + \sum_{j=1}^2 \gamma_j \Delta \ln KNICT_{it-j} + \sum_{j=1}^2 \phi_j \Delta \ln KICT_{it-j} + \varepsilon_{it} \dots \dots \dots (5)$$

### Data and Variables

Information on total factor productivity, information and communication related capital, non ICT capital and labour is taken from Groningen Growth and Development Centre (GGDC) for the time period 1990 to 2014 for SAARC. Information on gross domestic product is taken from WDI economic indicators. The details of these variables are following

**Growth rate of GDP:** Growth in output (GDP in constant). The GDP series is obtained by extrapolating 2011 benchmark PPPs from the World Bank

**Growth rate of TFP:** Growth in TFP is in percentage points estimated as a tornqvist index. TFP growth accounts are estimated as the residual

**Growth rate of ICT Capital:** Growth in ICT capital services include hardware of computers, equipment of telecommunication, software and other services.

**Growth rate of Non-ICT capital:** This variable refers to the change in the flow of services provided by capital assets, such as buildings, transport and machines.

**Growth in Labor:** Labor is taken in growth of person employed (in thousands of person).

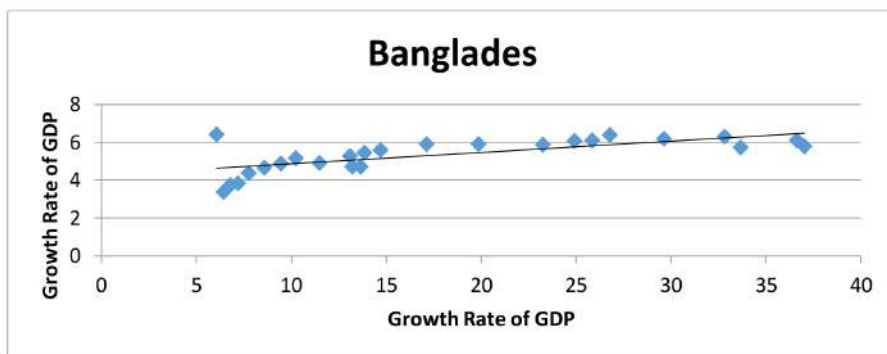
### *Statistical and Graphical Analysis of Data*

Relationship between growth in ICT-capital and GDP growth : Regression line in Figure 4.1 and table 4.1 shows that growth in ICT related capital is positively related with growth rate of GDP for SAARC countries. Literature published recently also highlighted importance of ICT for economic growth, employment, work organization and competitiveness, see (Matteucci, 2005).

Table 1

*Average yearly in 1995–1999, and 2010–2014*

Countries	Pakistan		India		Bangladesh		Sri Lanka	
	1999-1995	2010-2014	1999-1995	2010-2014	1999-995	2010-2014	1999-1995	2010-2014
<b>GDP</b>	3.3	3.7	6.3	6.2	4.98	6.09	4.8	7.2
<b>ICT-capital</b>	10.74	15.18	22.5	22.6	10.56	24.89	8.9	24.1
<b>Non.ICT-capital</b>	3.9	3.18	5.7	6.7	8.26	6.71	2.8	6.5
<b>TFP</b>	0.3	0.36	3.8	4.1	3.64	3.49	3.9	3.6



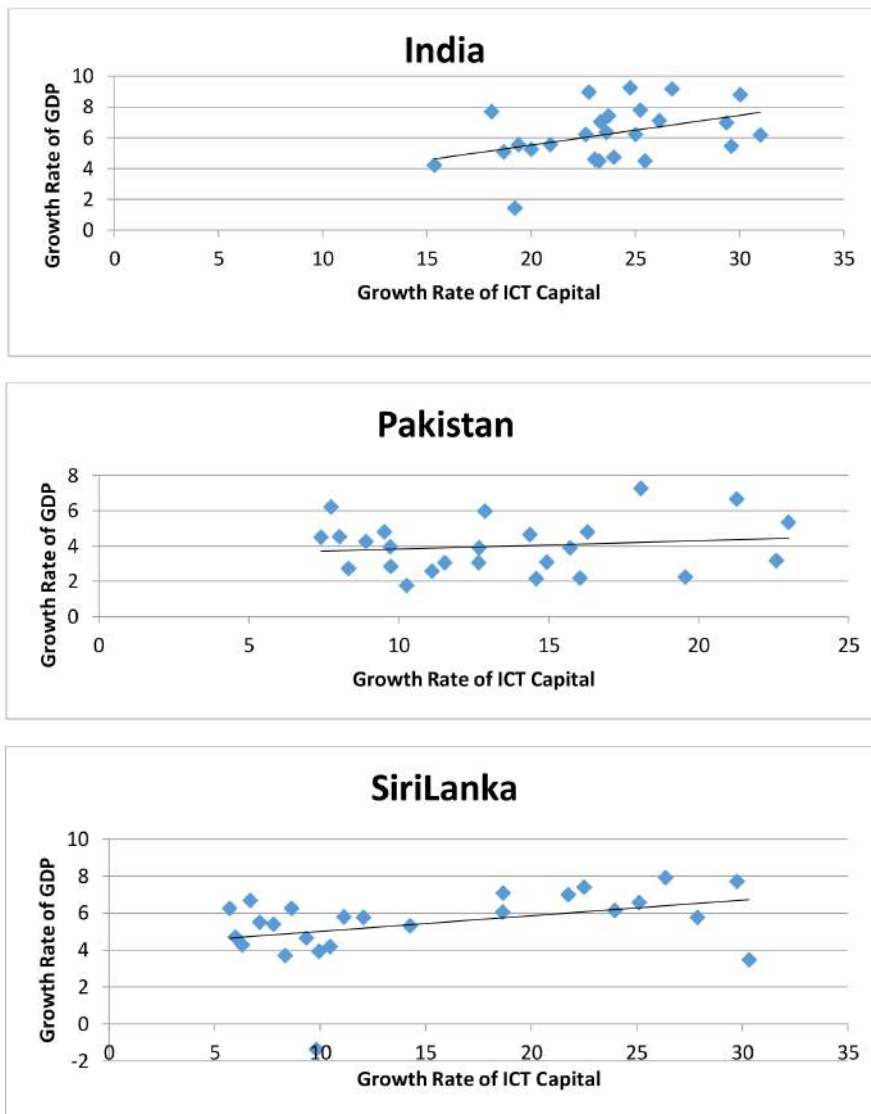


Figure 4.1: Growth in ICT-capital and Growth Rate of GDP

**Relationship between growth in Non-ICT-capital and growth:** Figure 4.2 shows that Non-ICT capital is also positively related with GDP growth

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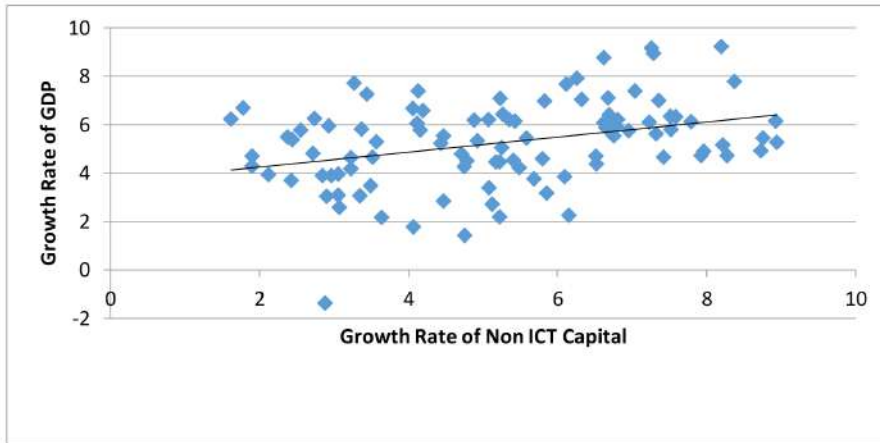


Figure 4.2: Growth in Non-ICT capital and Growth Rate of GDP

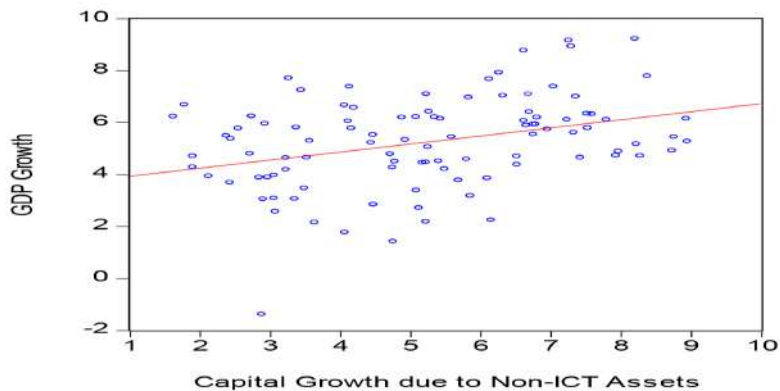


Figure 4.2: Growth in Non-ICT capital and Growth Rate of GDP

## Results

In order to estimate the models mentioned in section 3 (i.e. Eq.5 and Eq.6), we need to know the order of integration of  $\Delta$ ,  $(\Delta)$  and  $(\Delta)$  series. We apply five different panel unit root tests. Table 5.1 indicates these series are stationary

Table 5.1  
Panel Unit Root Test Results

	$\Delta \ln Y_{it}$		$\Delta \ln K_{ICT_{it}}$		$\Delta \ln K_{N_{it}}$	
TEST	T-val	p-val	T-val	p-val	T-val	p-val
LLC	-14.78	0.00***	-12.22	0.00***	-8.85	0.00***
Breitung	-11.33	0.00***	-6.65	0.00***	-6.20	0.00***
IPS	-19.50	0.00***	-13.72	0.00***	-12.46	0.00***
Fisher-ADF	327.19	0.00***	223.92	0.00***	197.37	0.00***
PP-test	42.67	0.00***	402.44	0.00***	303.76	0.00***

We analyze the ICT-capital and GDP growth nexus by using Eq.4. Hausman test is used for the choice of appropriate panel estimation. Table 1A in appendix shows that fixed effect model is more appropriate.

Table 5.2  
Determinant of GDP growth from Eq.4  
( $N = 4$ ,  $T = 24$ , 1990–2014) (HCSE  $t$ -values)

Dependent variable = $\Delta \ln Y_{it}$		
Variables	Coefficients	P-value
C	1.39	0.084
$\Delta \ln K_{ICT_{it}}$	0.08	0.000***
$\Delta \ln K_{N_{it}}$	0.12	0.000***
$\Delta \ln L_{it}$	0.02	0.887
$R^2 = 0.69$ No observation = 92      D-Watson stat 2.65		

Table 5.2 shows positive and statistically significant impact of information and communication technology related capital ( ) on growth rate of GDP ( ). Estimation indicates that 1% increase in the growth of ICT related capital leads 8 % increase in economic growth. Where, 1% increase in the growth of Non-ICT related capital and growth of labour employed lead 12% and 2% increase in growth rate of GDP of four SAARC countries, respectively.

The cost of research depends on the skills of labor. Highly skilled labor reduces the cost of R&D. According to the theory of endogenous growth, R&D is key for long run growth in TFP. Research and development also increases the magnitude of innovator's revenue (Comin, 2010). A study by Heshmati and Shiu (2006), support above argument. study found positive impact of information technology on total factor productivity and economic growth of China. Industries investing in ICT should have higher impact on growth of TFP because of the improved management system diffusion of best practices (Venturini et al., 2013).

Table 5.3

*Relationship between TFP and ICT- Capital from Eq. 5*

*Panel results (N = 4, T = 24, 1990–2014) (HCSE t-values)*

Dependent variable: $\Delta \ln TFP_t$ Lag length m = 1		Dependent variable: $\Delta \ln TFP_t$ Lag length m = 2	
Variable	Coefficient		Coefficient
$\Delta \ln TFP_{t-1}$	0.30*** [3.43] (0.000)		0.15** [3.07] (0.03)
$\Delta \ln TFP_{t-2}$			0.12*** [2.35] (0.08)
$\Delta \ln K_{ICT,t-1}$	0.10 [0.30] (0.77)		0.08 [0.76] (0.40)
$\Delta \ln K_{ICT,t-2}$			0.11 [1.58] (0.10)
$\Delta \ln K_{N,t-1}$	-0.02** [-1.69] (0.09)		-0.07 [-1.08] (0.37)
$\Delta \ln K_{N,t-2}$			0.09** [2.16] (0.03)
No of Observations	90		90
$R^2$	0.67		0.68
D.W statistic	2.95		2.97
Country Dummy	YES		YES
Time Dummy	YES		YES

Note: We mention t- statistics in Prentiss [...] and probability or p-value in small brackets (...)

Table 5.3 shows that the coefficient of ICT is statistically insignificant at first lag but the probability of significance has improved with second lag. These results are consistent with theory that technology has small or no impact on factor productivity in Short run. Moreover, capital related to non-ICT has negative impact on TFP. According to growth theory, the prices of information and communication technology affect the investment which leads to raise the capital per capita. Therefore, capital intensity increases. Hence capital intensity has effect on productivity but do not have any effect on TFP. Increase in TFP is shown during the production of ICT, using technological advancement (Stiroh, 2005).

### Conclusion

The objective of this paper is to analyze the impact of impact of information technology on economic growth, labour productivity and on TFP of south Asian countries. We used fixed effect method of estimation in panel setting. The impact of ICT-capital on growth rate of GDP and on TFP is positive. The rate of diffusion of information technology is slow in developing economies, therefore, lags should be involved to explore the impact (see Balamoune-Lutz 2002).

We used lags and results show that the impact of ICT on TFP is not significant at first lag but became significant at second lag. A study by Jorgenson and Stiroh (2002) finds that developing economies can not absorb technology in a short period of time. South Asian developing countries adapted ICT related capital in the late 1990 or early 2000. Significant result is due to the lagged effect of ICT. It requires more than a year to get benefits from ICT. So a more strategic policy should be formed in developing countries as one year is penetration of ICT. This study found that ICT is playing a role in economic growth south Asian economies. Therefore, it is necessary for all countries to increase the use of ICT in order to boost economic growth.

This study found that ICT is playing role in economic growth south Asian economies. It is necessary for all countries to increase the use of ICT in order to boost economic growth. Shares of services sector in GDP is increasing in all South Asian economies. For example shares of services sector in Pakistan is more than 56% of GDP. Information and communication technology has pivotal role in services sector. Therefore, diffusion of information technology in services sector could increase the productivity.

### Appendix

Table 1A

*Results of Hausman test:*

Test summary	Chi-Sq. Statistic	P-value
Period Random	4.618126	0.062

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# MODERATING ROLE OF COMPETITIVE INTENSITY AND BRANDS IMAGE ON CUSTOMER RELATIONSHIP MANAGEMENT IN THE TELECOM SECTOR OF PAKISTAN

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## Abstract

*The current study scrutinizes the intervening impact of customer's relationship management quality (CRM) to better understand the effect of customer's satisfaction and customer value occurring on the loyalty of customers. Moreover, we examine the brand image and competitive intensity as moderating variables on CRM quality and loyalty of customer. Further, we analyzed the intervening impact of CRM quality towards customer's loyalty and observed that the consequential outcome of customer's satisfactions and value towards loyalty by means of CRM quality is moderated through the role of competitive intensity and brand image. By investigating 208 survey responses, the outcome of the research figure out some useful implications regarding industry professionals like company development executives, customer relationship managers, marketing managers, and scholars who correlate customer satisfaction and value with customer loyalty.*

**Keywords:** Customer Satisfaction, Competitive Intensity, Customer Loyalty, CRM Quality, Brand Image, Customer Value.

**JEL Classification:** M000

## Introduction

The competitive environment in telecom sector of Pakistan is intensifying due to the launch of 4G in recent years. It is becoming one of the biggest task for the companies to keep the customers loyal and keeping the brand image or grab the market (Rahaman et al., 2017) by keeping the bonding strong.

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Prior literature emphasizes the value of customer loyalty as the most worthy strategic objective in every service industry (Reichheld & Teal, 1996). Loyalty may be manifested as in multiple ways; like, by preferring one company over others, by showing repeat behavior of purchasing from a company, or by keep on availing its services in future as well. Prior research has highlighted these variables that effect loyalty (Zeithaml et al., 1996). In this paper, we will analyze the moderating role of brand image and competitive intensity in the telecom sector in the context of Pakistan being the neglected area in prior literature.

Customer loyalty is a key contributor to a firm's competitive advantage. However, despite practitioner's highlight the importance of customer loyalty, it is still a number one challenge observed by most of the enterprises in the current business era. Although, more attention has been focused on the predecessors of loyalty of customer, the present literature is unable to elucidate the solid reasons on the area under discussion as what are those components that are responsible towards loyalty of customer (Kumar et al., 2013) . Hence, it is being crucial for the investigation of other variables having the role of mediation and moderation to know their impact on the loyalty of customer (Kumar et al., 2013). By considering this acumen, the basic goal is to explore a range of factors which effects towards customer's loyalty by considering their moderating and mediating role in the telecom sector of Pakistan.

The existing literature supports the concurrent research of the variables customer satisfaction and customer value towards customer loyalty as an outcome variable (Cronin et al., 2000; Ostrom & Iacobucci, 1995) and these mentioned variables are specified as the leading antecedent towards loyalty (Nyadzayo & Khajehzadeh, 2016). Few researches have focused just the direct effect amongst the relationship of these variables to the loyalty of customer which may ignore in determine the other factors affecting this relationship (Lai et al., 2009). This research suggests that there are other factors for determining customer loyalty that signifying the customer relationship management as an essential factor (Chen & Hu, 2013; Fullerton, 2005; Wilson et al., 2012). In addition to this, competitive intensity and brand image are the marketplace-oriented elements which have not given considerable attention as a moderating variable despite of its relevance towards the loyalty of customer (Martin & Javalgi, 2016; Wang. & Yang, 2010). The attitude of customer towards brand image is vital in directing trust and commitment ultimately resulting in building the loyalty of customer.

This research inspects the intergrated-model regarding customer value and their satisfaction on customer's loyalty. Moreover, we also investigate the interceding role of CRM quality (trust & commitment) and the role of competitive intensity and brand image towards loyalty of customer as moderators. While, the rest of the paper describe the theoretical framework, succeeded by exploring the literature regarding the core variables followed by the development of hypotheses. The research approach and results are discussed followed by the theoretical and managerial implication along with limitation and directions of future study gaps.

### Theoretical model, theoretical assessment and development of hypotheses

Some researchers have similar views regarding satisfaction and customer value (Cronin et al., 2000; Zeithaml et al., 1996). Contrarily, some researchers recommend that the customer loyalty should not exclusively be dependent on customer satisfaction as a direct driver (Rust et al., 1995). Indeed, fact suggests that the repeat purchase behavior of customer only comprises of below 25 percent of customer satisfaction (Szymanski & Henard, 2001).

Various researchers have concentrated on circumstances in which the loyalty of customer is analyzed as a stronger or feeble correlation (Fullerton, 2005; X. Wang & Yang, 2010; Wang. & Yang, 2010). Therefore, CRM quality comprises of commitment as well as trust is vital in establishing ever lasting bonding while building loyalty towards customer (Gwinner et al., 1998). Mostly, the relationship among the satisfaction and value of customer, brand image, competitive intensity, CRM quality and outcome variable are still indistinct (Cronin et al., 2000; Lai et al., 2009).

The research also recognize, the direct effects of customer's satisfaction and value on customers loyalty in consistent with the research above. In contrary, to influence the efficiency of the said variables towards loyalty of customer, we formulate the conceptual model which assume that CRM quality act as an intervening role on these interaction of variables and conversely the link among customer satisfaction as well as customer value towards loyalty of customer by CRM quality is moderated with competitive intensity and brands image. Consequently, moderated mediation correlation model is grounded amongst the constructs (note Fig. 1). The proposed hypotheses are illustrated as mentioned in the following segment.

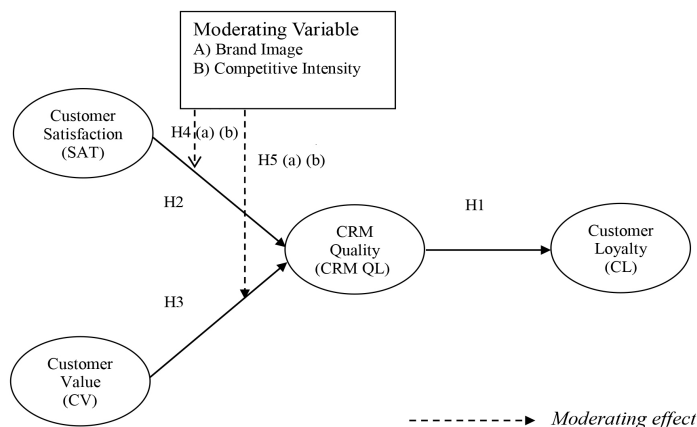


Figure 1: Conceptual model.

### **Customers Relationship management (CRM) quality**

The model of CRM is established on the foundation of maintaining better liaison with customer to facilitate and retain them which ultimately resulting in generating loyalty to enhance profitability in business (Athanasopoulou, 2012; Zeithaml et al., 1996). The CRM technology usage is anticipated to enhance the capacity of a firm for sustaining cost-effective customers relationships in permitting and sharing integrated information efficiently which ultimately facilitating efficient and effective interaction of firm and customers, analyses of consumer data, and customization of feedbacks (Day, 2003). CRM is narrated as a process of a firm the entire affiliation among firm and clients, with all its various range of contacts, associated practice as well as communication components (Grönroos, 2007). Generally, the key objectives of CRM are retaining, engaging and implementing productive customer bonding with the passage of time and upholding customer profitability and loyalty as the time passes. (Berry, 1995; Grönroos, 2007).

The two dimensions (commitment and trust) of CRM quality play a significant job in keeping relationship with the customer for a longer period of time (Athanasopoulou, 2009; Garbarino & Johnson, 1999; Javed & Cheema, 2017). According to the prior research, it is evident that the trust and commitment are directly related to behavioural intention (Chaudhuri & Holbrook, 2001). The current research paper evaluates trust as adherence and customer assertion by considering the services provided by the organization. Moreover, the study uses the attitudinal and emotional elements of commitment in order to access the level of customer commitment (Chaudhuri & Holbrook, 2001). These two dimensions of CRM are vital as it leads directly to customer behavior and these are the key measures for relationship marketing advancement with the customers ((Morgan & Hunt, 1994). Morgan and Hunt (1994), enact the leading intervening variable form of relationship promotion by the commitment & trust theory. Likewise, trust as well as commitment together are accepted the same as intervening variable for customers satisfaction and customer value towards loyalty of customer (Hennig-Thurau et al., 2002).

### **Customers Loyalty**

Consumer's loyalty is consider to be the foremost measures for the achievement of any firm eventually effect in lowering marketing costs, willing to pay premium price and increase market share (Aaker, 1996; Reichheld & Teal, 1996). Customer loyalty is defined as intense commitment to reconsider any goods or services accordingly which consequently resulting in repeat consideration of the same goods or services (Oliver, 1999). Enhancing customer loyalty is the main focus of many scholars (Wilson et al., 2012).

The Loyalty is perceived as customer loyalty and brand loyalty (Chaudhuri & Holbrook, 2001). Basically, Loyalty is the affection of customer on both attitudinal and behavioral dimensions (Aaker, 1991).

Commitment and trust both influence customer loyalty as supported by the existing literature. For instance, research illustrates that commitment results in maintaining customer loyalty (Hur et al., 2013) and trust establishes in maintaining even longer relationship with the firm (Yu, et al., 2015). In supporting to this, we expect CRM quality affects loyalty and hypothesized that:

*H1*: There is a positive connection between CRM quality and customers loyalty.

### **Customers Satisfaction**

As this is the era of customer-orientation, all firms observe customer satisfaction as an essential factor in achieving competitive advantage and alternate growth in any sector of industry (Deng et al., 2010; Lee, 2013). Customers satisfaction is the overall expectation of customers in view of satisfying a need. Previous analyses describe the positive response of satisfaction towards attitudinal and behavioral loyalty issues for instance customer purchase intentions, referrals generation, service availing and length of relationship (Pizam et al., 2016; Zeithaml et al., 1996). Oliver (1999) conducted research on customer loyalty and argue that loyalty is conditional in certain factors and is not accountable for exclusively measure of loyalty (Reichheld & Teal, 1996). Customer satisfaction depends on customer's former experience with the firm and the connection amongst customers satisfaction along with loyalty can be mediated by CRM quality therefore we hypothesized that:

*H2*: There is a positive relationship between customer satisfactions and customers loyalty intervening by the behavior of CRM quality.

### **Customer's Value**

Customer value is described as a perception among the advantages after utilizing products or services relative to the costs paid by its end user (Slater & Narver, 1994). Customer value is used as a vital tool during engaging and retaining customers and is responsible for the success of both service providers and manufacturing concerns (Kumar & Reinartz, 2016; Parasuraman, 1997; Zeithaml et al., 1996). Hence, the more customer value offered to the customer, trust and commitment enhanced that ultimately establish greater customer loyalty. Y. Wang et al., (2004) conducted research on customer value and CRM performance and finds that the better the service the stronger will be in maintaining competitive advantage. Customer value has an indirect and affirmative effect on behavioral intentions of customers (Cronin et al., 2000). Along these lines, we considered that customer value has indirect bonding with loyalty through establishing CRM practices that's why we hypothesized that:

*H3*: There is a positive relationship between customer value and customer loyalty mediated by CRM quality.

### *Moderating aspect of brands image*

Promising image of trade name help the firm in maintaining market positioning as well as safeguard the firm from its competitiveness (Aaker, 1996). According to Aaker (1996), brands image is narrated as how the trademarks are professed by the customers in his own mind. This perception may be positive or negative determined by benefits or consequences of various factors i.e. brand personality, usage of brand and product attribute which ultimately affect the decision making of the consumer (Bian & Moutinho, 2011). Brand image is the key element in order to retain customer for a company which result in maintaining loyalty amongst customers. Research illustrated, brands image as an intervening role in affecting buying intention and ultimately customers loyalty (Lai et al., 2009; X. Wang & Yang, 2010). The higher the satisfaction of the customer, the higher will be the loyalty while determining brand value and trade name (Lai et al., 2009). Promising brands result in using a good relationship tool (CRM) with the customer since brand credibility impact customer behavior. Previous research supports that CRM practices depends on integration of resources that are cross-functional like retailing capabilities (Payne & Frow, 2005), which specify that CRM rules design on brand image. The affirmative brand image results in effecting to reinforce the aftermath of satisfaction as well as customer value towards customer loyalty by CRM quality for this reason we posit that:

*H4 (a):* Brand Image moderates the effect of customers satisfaction on customers relationship quality.

*H4 (b):* Brands Image moderates the effect of customer value on customer relationship quality.

### *Moderating aspect of Competitive Intensity*

A competitive intensity is basically the degree of competition prevailing in a market. In non-competitive environment, the firms accomplished goals well as customers have no other option. But on the other hand, in the endurance of stiff competition customers tends to opt for more options available with him/her in order to cater his/her need or wants (Kohli & Jaworski, 1990). Competitive forces affect the repurchase behavior of the customer and resulting in maintaining strong or weak relationship in satisfying customer (Seiders et al., 2012).

Institutional theory (DiMaggio & Powell, 1983) guides that the ecological variables (e.g., competitive intensity; environmental dynamism; the variability of customer needs; the extent of rivalry in same industry and its technology) leverage the operation of organization. Competitive force strengthen firms to establish relational awareness procedures by means of accentuating obligation in securing consumers, and therefore undermine consumers bonding ability by receding consumers engagement. Antecedents of customer loyalty suggest that it is important to consider the components that assist to customer loyalty (Zeithaml et al., 1996). Apart from implication regarding customers loyalty, it's the most provoking problems of intense competition for firms in this current modern era. The affirmative competitive intensity results in effecting to intensify the consequence of consumers satisfaction and value in respecting customers loyalty by customers relationship quality, therefore we

deduce as:

*H5 (a):* Competitive intensity moderates effect on the relationship of customers satisfaction on CRM quality.

*H5 (b):* Competitive intensity moderates the effect on the relationship of customer value on CRM quality.

### **Research Method**

#### *Data collection & sample (n)*

The research is designed as cross sectional descriptive research and simple random sampling was used as sampling technique. The respondents of this research were those who were using the telecommunication services in three major different cities Sahiwal, Gujranwala and Lahore of Pakistan to test the research model of this study. According to Pakistan telecommunication authority (PTA), telecommunication industry revenue Jul-Dec 2014-15 was Rs.299.0 billion which made this sector very attractive for further investment, therefore, it is very charming to choose this sector of industry. Instrument used for this research was adopted via already established scales. In total, 300 questionnaires were distributed using survey, 208 were picked for further analysis of customers using telecommunication services in Pakistan. The response rate was 69% approximately out of which 73% were male and 27% were female.

#### *Measures*

Customer satisfaction measure was adopted from Cronin and Taylor (1992) and Lam et al., (2004). Measure of customers value was adopted from Eggert and Ulaga (2002) and Wang et al. (2004). CRM's quality measure was adopted from the items used by Morgan and Hunt (1994). Customers loyalty measure was adopted from Sirdeshmukh et al. (2002) and Zeithaml et al. (1996). Since, commitment being an attitudinal aspect was adopted from Loyalty is measured as together behavioral and attitudinal aspect and it was adopted from Evanschitzky et al. (2006). This way it can segregates among the both mentioned dimensions of customers' feedback to CRM methods originated via a services provider. Brands image is adopted from Aaker (1996) and competitive intensity is adopted from Jaworski and Kohli (1993). All construct were measured on 5 - point Likert scales (1= strongly disagree; 5= strongly agree).

### **Data analysis and results**

#### *Preliminary analysis and measurement model*

In partial least square PLS-SEM, the sample-size prerequisite ought to be relatively ten (10) times, the largest number of structural paths intended by a selective construct in PLS structural model (Hair et al., 2011). Since in "Fig. 1" shows three (3) paths-from SAT, CV & CRM QL- intended at CL, thus the sample size testing ought to be larger than 30. Thus, the sample (n) of 208 respondents in this

research fulfills the minimal sample (n) requisite for PLS-SEM. The PLS path model estimation (Fig. 1) uses the SmartPLS 3 software (Ringle et al., 2015). Partial Least Square - Structural Equation Modeling technique was adept to analyze the supposition of current research. The measurement variable model showed the value of “ $R^2=0.324$ ” for the loyalty endogenous latent variable. This means that the three variables (Customer satisfaction, CRM quality and customer value) moderately explain 32.4% of the variance in customer loyalty. Similarly, customers’ satisfaction and customer value both interpreted the 22.3% of the variance of CRM quality. Meanwhile, we measure the predictive relevance through cross validated redundancy model of Stone-Geisser’s  $Q^2$  value (Geisser, 1974; Stone, 1974) for exploring the inner model. In our model, the  $Q^2$  value is 0.163 (see Table 1) for customer loyalty which is larger than zero. Further, we checked the composite reliability (CR) as well as average variance extracted (AVEs) showed the values above 0.7 and 0.5 respectively revealing convergent reliability that Fornell and Larcker (1981) suggested as described in Table 2.

Table 1

*Inner model results*

<b>Inner model results</b>			
<b>Latent variables</b>	<b>R-Squared ( <math>R^2</math> )</b>	<b>Adjusted ( <math>R^2</math> )</b>	<b><math>Q^2</math> (Predictive Validity)</b>
Customer Loyalty	0.324	0.314	0.163
CRM Quality	0.223	0.216	0.103

Table 2

*Result from measurement model estimation (weights, loading, composite reliability value, and AVE value).*

<b>Latent Variables</b>	<b>Manifest Variables</b>	<b>Outer Weights</b>	<b>Outer Loading values</b>	<b>Composite Reliability ( CR)</b>	<b>Average Variance Extracted (AVEs) values</b>
Customer Satisfaction (SAT)	SAT1	0.343	0.916	0.920	0.743
	SAT2	0.313	0.724		
	SAT4	0.267	0.900		
	SAT5	0.244	0.894		
Customer Value(CV)	CV_1	0.546	0.750	0.751	0.502
	CV_2	0.420	0.666		
	CV_4	0.440	0.705		
CRM Quality(CRM QL)	CRM_CM2	0.300	0.709	0.805	0.509
	CRM_CM3	0.268	0.652		
	CRM_T3	0.434	0.804		
	CRM_T4	0.387	0.679		
Customer Loyalty (CL)	CL_1	0.298	0.637	0.790	0.559
	CL_2	0.514	0.807		
	CL_3	0.502	0.788		

Discriminant validity, was checked by the cross loading values of factors keeping in view the criteria as guided by Fornell and Larcker (1981) as elaborated in Table 3.

Table 3

*Discriminant validity of constructs*

Discriminant validity of constructs				
Constructs	1	2	3	4
1. Customer Loyalty	<b>0.748</b>			
2. CRM Quality	0.454	<b>0.713</b>		
3. Customer Value	0.247	0.369	<b>0.708</b>	
4. Customer Satisfaction	0.495	0.398	0.32	<b>0.862</b>

Note: Average variance extracted values (AVEs) are exhibited in bold crosswise of the table.

#### *Mediating outcome of CRM Quality*

##### “PLS –SEM Path Analysis”

The PLS-path model estimation (Fig. 2) was performed using the SmartPLS 3 as software (Ringle et al., 2015) for evaluating the model in which customer value as well as customer satisfaction were depicted as independent variable, customer relationship (CRM) quality as intermediary and customers loyalty as dependent latent variable.

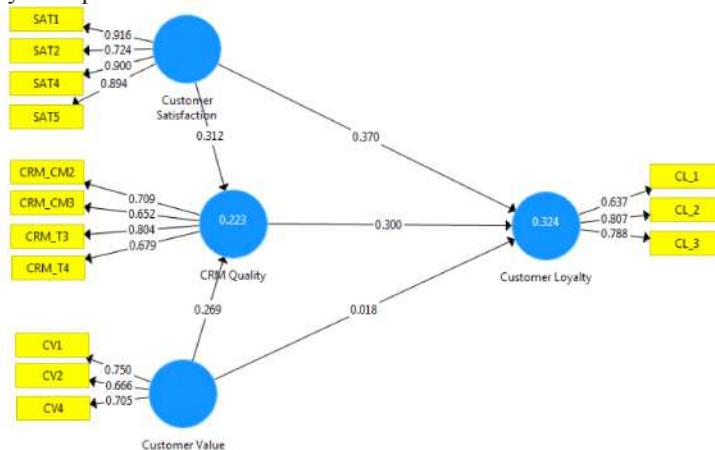


Figure 2: PLS-SEM Path Analysis Result

Empirical results show that if the other aspect persist sustained and if there is a 1 unit altered in client satisfactions there will be increase in CRM quality by 0.312. Similarly, if there is a 1 change in customer value, the CRM quality increased by 0.269. If other factors remain constant, one unit changes in customer satisfaction, customer loyalty changed by 0.370. However, hypothesized relation of customer value and loyalty is not significant as the standardized path coefficient is 0.018 which is lower than 0.1. Thus, we can conclude that CRM quality is intervening relationship of client value and loyalty but user value did not predict loyalty directly. The same applies, if associated factors remain unaffected, one unit alter in CRM quality, customer loyalty will increase by 0.30.

Table 4 describes the path analysis by showing their P – value to test the H1-H3 hypothesis, path-coefficients and T-statistic value. At the beginning, the direct effect of clients satisfaction towards customer loyalty ( $\beta=0.37$ ,  $P<0.05$ ) was significant while customer value towards customer loyalty was insignificant towards customer loyalty. The CRM quality positively effect on customers loyalty ( $\beta=0.302$ ,  $P<0.05$ ), therefore confirming H1.

Having establish this direct effects, indirect effect of customer satisfactions towards customer loyalty is tested ( $\beta = 0.095$ ,  $P < 0.05$ ) is significant. But, the direct impact of customer satisfactions towards loyalty ( $\beta= 0.37$ ,  $P < 0.05$ ) is still notable, which suggests that CRM quality partially mediated the loyalty effect of customer satisfactions, therefore confirming H2. Subsequently, the indirect consequence of customer's value towards loyalty ( $\beta = 0.083$   $P < 0.05$ ) is significant, though as the direct outcome is insignificant ( $P > 0.05$ ) which shows that CRM quality fully intervenes the relationship of customer satisfactions towards customer loyalty, confirming H3.

Table 4  
*Result of direct and indirect effects*

Direct Relationships	Original Sample ( O )	Expected Mean ( M )	T-Statistics	P-Values
CRM Quality -> Customer Loyalty	0.3	0.302	4.801	0.000
Customer Satisfaction -> CRM Quality	0.312	0.314	4.559	0.000
Customer Satisfaction -> Customer Loyalty	0.37	0.371	5.869	0.000
Customer Value -> CRM Quality	0.269	0.276	4.347	0.000
Customer Value -> Customer Loyalty	0.018	0.023	0.223	0.8240
Indirect Relationship effect	Original Sample ( O )	Expected Mean ( M )	T-Statistics	P-Values
Customer Satisfactions -> CRM Quality -> Customer Loyalty	0.094	0.095	3.071	0.002
Customer value -> CRM Quality -> Customer Loyalty	0.081	0.083	3.160	0.002

### *Moderating effect of brands image*

We analyzed the moderation outcome of brands image of customer satisfactions as well as customer's value towards customer loyalty by CRM's quality (Fig. 3) moreover, we find that brand image strength the relationship of customer satisfactions towards customer loyalty by CRM quality as 0.117, supporting H4 (a) and brand image weaken the relationship of customer's value on loyalty through CRM's quality by 0.040, supporting H4 (b).

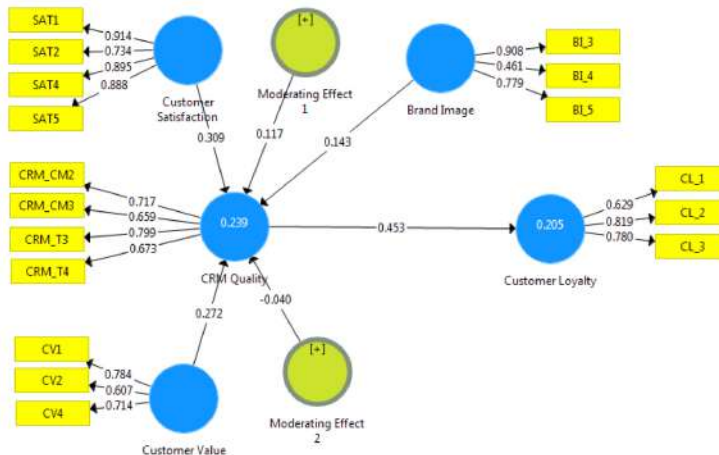


Figure 3: Moderation effect of Brands Image

### *Moderating outcome of competitive intensity*

We analyzed the moderation consequence of competitive intensity of clients satisfaction as well as clients value towards customers loyalty by CRM's quality (Fig. 4) and deduce that competitive intensity negatively effect on CRM quality by -0.012, supporting H5 (a). For this level of competitive intensity, the relationship of customers satisfaction and CRM quality is 0.322. If the competitive intensity is higher (i.e., the competitive intensity increased by one unit), this implied that the relationship among customer satisfaction and CRM quality decreased by  $0.322 - 0.012 = 0.31$ . Hence, when competitive intensity is higher in the market, customer satisfaction becomes less important in explaining the relationship of customer with the company (CRM quality). Similarly, the opposite kind of interpretation when competitive intensity is lower (i.e., the competitive intensity decreased by one unit). Here the customer satisfaction would increase in its importance for explaining the CRM quality. Further, we analyzed the moderating role of competitive strength on the relationship of customer's value towards loyalty by CRM quality, resulting as -0.025, supporting H5 (b). In support of this level of competitive intensity the relationship of customer value and CRM quality is 0.256. If the competitive intensity is higher (i.e., it increased by one unit), this signified that the relationship among

customer value and CRM quality would decrease by  $0.256 - 0.025 = 0.231$ . Hence, when competitive intensity is higher, customer value becomes less significant in describing the relationship of CRM quality. The reverse manner of interpretation while competitive intensity is lesser (i.e., the competitive intensity reduced by single unit). At this point, the consumer value would increase in its importance for describing the CRM quality.

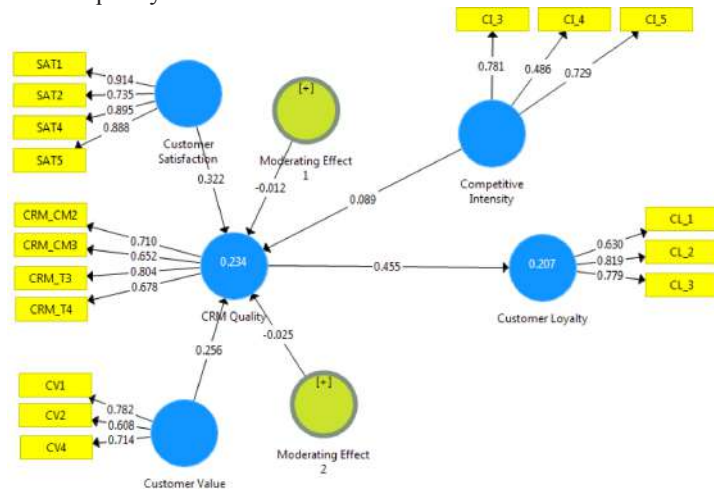


Figure 4: Moderation effect of Competitive Intensity

## Conclusion

The present research investigated the character of CRM's quality, brand image along with competitive intensity towards the relationship among customer satisfactions, customer value and customer loyalty. This study was executed specially in the environment of Pakistan particularly in telecom sector in order to get better investigating the effect of customer relationship, brand image and competitive intensity. The finding suggested that CRM quality, brand image and competitive intensity influenced the relationship of client satisfactions and customer's value towards client loyalty as the above-mentioned are the key variables in building more loyalty towards customers. Further, we did not find a direct relationship of customer value on customer loyalty instead it was mediated by the role of CRM quality which emphasized the role of company to managed better relationship with the customer of its domain.

### Theoretical contributions

We introduced the competitive intensity as the moderating variable amongst client satisfactions and user value towards customers loyalty by intervening character of CRM's quality.

This helps us in finding the indirect effects of customer satisfactions towards loyalty intervening by CRM quality along with moderated by competitive intensity.

Secondly, we tested the moderating effect of competitive intensity in a developing country which also imply that by exercising the western developed theory as well as logical interrelationship of customer satisfactions and value on rational customer's loyalty can't be generalized.

### *Managerial Implication*

Our conclusion, suggested some essential implication to marketers particularly in the telecom sector. Customer loyalty being the more important element of any firm and due to the intense competition, it becomes difficult for managing customer loyalty. So it is the need of the hour to have better customer relationship with customer in terms of better customer retention. This leads to build better trust amongst customer which creates more loyalty amongst customers. Further, the role of brand image may create positive or negative perception amongst customer leading to affect the loyalty of customer, therefore, it is better to establish relationship with customer as in our study the effect of association of client satisfactions and customers loyalty by CRM quality is vigorous by intervening character of brand image. Thus, we intend to suggest to the practitioner that positive or negative brand image will generate if company forgo the importance of maintaining relationship with the customer. In more competitive intense environment, firms need to build more positive connection with consumer in order to amplify satisfaction and value which ultimately generate loyalty amongst the consumers (Yu & Tung, 2013).

### *Limitation and future study guidelines*

This study has some obstructions that should be considered but also the point of direction for more future research. We cannot generalize the results of this study as a whole to other countries in the world. Future direction could examine this model in developed countries of the world to compare the results. Further, predecessors of CRM and their affects toward customer loyalty could be investigated for future research in different sectors. The cross sectional data is used in this study while longitudinal study can be examined for future study. The study only focuses the two moderating variables competitive intensity and brand image. Future study can be done by introduction of additional moderating variables like the extent of inter firm rivalry, its circumstantial dynamism, the variability of users needs, and skills.

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# PERFORMANCE AND TIMING ABILITIES OF MUTUAL FUNDS DURING BULL AND BEAR MARKET: EVIDENCE FROM PAKISTAN

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## Abstract

*The mutual fund managers cannot remain indifferent to the stock market fluctuations and their correlation determines the return which investors are looking for. This article is making an attempt to investigate the variation of performance and timing abilities of 84 Pakistani mutual funds for the period 2007 to 2014 during bull and bear market. The results reveal that funds perform significantly well during market downturns. The funds exhibit selectivity timing ability during bull period while market timing and volatility timing abilities are evident in bear market. However, we do not find any evidence for style timing abilities among the fund managers. The implications come up from the results are that the funds perform well in bear market. The managers have the capability to adjust their investment portfolio according to the market movements by utilizing superior information.*

**Keywords:** Mutual Fund Performance, Market Timing, Volatility Timing, Style Timing, Market Fluctuations.

**JEL Classification:** E120

## Introduction

Stock market does not perform constantly all over the time; it shows variance in its behaviour. The sustained periods of price increase and price fall are classified as bull and bear markets respectively (Chauvet & Potter, 2000). A bull market is a flourishing market. The share prices start increasing and the overall economy inclines towards strength. Investors love taking high risks in order to make their pockets heavy with the big bucks. At this point there is high level of output, trade, employment and income, therefore the economy enjoys a better standard of living. On the contrary, all the above benefits fade away with the introduction of the bear market. This stage is characterized by the slowing down of all economic activities.

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The behaviour of the fund manager cannot be segregated from the stock market and true correlation between these two is an important factor for getting high return on the investment of the stakeholder. Mutual funds with different characteristics respond in their unique way to the stock market fluctuations, which in turn reflects their inherent stability. How mutual fund reacts under various market situations has been targeted by many researchers and found significant by them (e.g Wang, 2010; Glode, 2011; Kosowski, 2011; Spanje 2012, Nofsinger & Varma, 2014). Further, the investment performance of portfolio managers is contingent on market timing, volatility timing and security selection ability (Ferson & Mo, 2013).

Munoz et al. 2014 defines successful stock-picking ability as selection of stocks beating other stocks, exposed to the same class of non-diversifiable risk levels. However, the dynamic allocation of capital among various classes of investments based on market movements is referred to as Market timing (In.et al., 2014). Market timing ability is an attempt to adjust or rebalance the risky equity holdings of the fund to adjust the funds' market beta in anticipation of the various market conditions.

Volatility timing ability is the choice of a strategy by a fund manager to set the portfolio's beta contingent upon conditional market volatility factor (Giambona & Golec, 2008). Mutual funds might enhance the value of their investors by increasing or decreasing their exposures to certain investment styles. (Swinkles & Tjong-A-Tjao,2006).

There is a plethora of empirical evidence on mutual fund performance for different market states but they mostly focus on developed markets (Nofsinger & Varma; 2014, Spanje; 2012). As this area remains almost silent for emerging markets, the core contribution of this study is to fill the gap by investigating the impact of varying market conditions on mutual fund performance. The study attempts to find out that whether the Pakistani mutual fund market is efficient and that all fund managers are able to diversify the risk elements in the industry for the investor under different circumstances of economy.

This study focuses on Pakistan as the industry experiences a mushroom growth in the recent past. In 1962, the first Mutual fund was launched in Pakistan. Now, a total of 181 open-ended mutual funds and closed ended mutual funds were operating in Pakistan by November, 2015. The mutual fund industry has shown tremendous growth with net assets grown to Rs.291billion by November 2015. ([www.Mufap.com.pk](http://www.Mufap.com.pk))

Another question this study addresses is the breakdown of fund performance into various timing abilities and, to be more specific, in what way these managerial abilities behave under varying market conditions. This study investigates not only selectivity timing and market timing but will also estimate the volatility and style-timing abilities under the bull and bear market, which remains unanswered for Pakistani fund markets. In this manner, the present study is contributing to the

growing mutual fund timing literature on several fronts by conducting a comprehensive analysis of performance, timing abilities of 84 mutual funds in bull and bear market states from January 2007 to December 2014.

After introduction, the remainder of the study is organized as follows. Section 2 describes the previous literature related to the market timing and volatility timing in bull and bear market. Section 3 presents the data, the variables followed by the methodology and the models. Section 4 presents and discusses the empirical results and Section 5 summarizes the main findings and presents some concluding remarks.

### **Literature Review**

There is abundant empirical literature available investigating the impact of high and low market states on performance of mutual funds. In this section the literature on the area regarding developed and developing markets is presented.

Literature Review on Selectivity Timing and Market Timing in Bull Bear Market Conditions Francis and Fabozzi (1979) argue that fund managers of the mutual funds do not reduce (increase) the fund's beta during bear (bull) market to take risk adjustment advantage for the shareholders. Chang and Lewellen (1984) using the monthly data of 67 US mutual funds for the period 1971 - 1979 study the performance of mutual funds in high and low market situation. The results show that few fund managers possess timing skills and overall the fund managers fail to outclass a passive investment strategy. Analysing the period from 1980-2005, Glode (2011) uses 3260 actively managed US equity funds. They conclude that the fund managers perform more actively in bad states as investors are willing to pay for more returns.

The market timing abilities among mutual funds is extensively researched for developed markets. Fama (1972) for the first time distinguishes fund performance into stock selection (micro-forecasting) and timing ability (macro-forecasting). Though, the final evidence on the ability of managers to show superior stock selection timing and market timing remains debatable. The past studies come up with mixed results. The advocates of superior stock selection include Kacperczyk, et al. (2014), The studies with poor selection abilities include Ang and Lean (2013), Munoz et al. (2013) Goo et al. (2015). There are some studies that report lack of market timing ability (Treynor & Mazuy, 1966; Christensen, 2005; Cuthbertson et al 2010; Bhuvaneswari & Selvam, 2011; Elmessearya, 2014; Hassan 2013; Goo et al., 2015). While others confirm the presence of market timing skill (Bollen & Busse, 2001; Chunhachinda & Tangprasert, 2003; Ang & Lean, 2013).

These studies do not compare the market timing ability across different market states. Chen and Liang (2007) confirms significant return timing during bull period and volatile market states for 221 US hedge funds. Kosowski (2011) finds positive market timing ability in recession for the US

domestic equity mutual funds in recessions and expansions for the period 1962 to 2005. They argue that in recessions, managers reveal only part of news, leading to asymmetric information and variation of information signals. These variations in signals give the managers advantage over average investors. Kacperczyk, et al. (2014) find that mutual funds exhibit selectivity skill in booms and market timing skills in recession among the US equity funds for 1985 to 2005. They argue that managers forecast firm-specific variables in booms and market fundamentals in recessions. Munoz, et al. (2014) comparing the US and European green and socially responsible funds from 1994-2013, conclude that the US green fund managers exhibit superior managerial abilities for the crises period. Leite and Cortez (2015) finds variation in performance and timing abilities among French funds during different economic states. Ang and Lean (2013) finds positive market timing but poor stock selectivity skill for 188 SRI fund managers in Luxembourg for period 2001-2011. Munoz, et al. (2013) finds poor stock-picking ability and market timing ability for the US and European socially responsible mutual funds for the period 1994-2013. Goo et al., (2015) finds no evidence of stock selection and timing abilities for Taiwan industry from 2004 to 2009.

#### *Literature Review on Volatility Timing*

Busse (1999) first investigates the presence of volatility timing skill among the fund manager that predicts that time volatility counter-cyclically for 80 percent of his sample funds during 1985-1995. Johannes et al. (2002) document that volatility timing strategy performs better than market timing. Chunhachinda and Tangprasert (2003) find significant volatility timing abilities in Thailand mutual fund industry when daily data is used. Holmes and Faff (2004) formulate a cubic model and provide empirical support about existence of volatility timing skill among Australian multi-sector funds for the period 1990-1999. Marquering and Verbeek (2004) confirms significant volatility timing at monthly frequency for the period 1996 to 2001. Legacy and Bu (2010) find the existence of volatility timing ability in bear market funds from 2000-2008. Tschanz (2010) comparing US and UK equity mutual funds from 1998-2003 confirm volatility timing among the funds but it is more profound in US.

Cao (2011) finds little evidence of volatility timing in emerging market hedge funds for 541 funds from the 1980 and 2009. Bodson et al. (2013) document that on average 13% of mutual funds exhibit volatility timing. Chen and Liang (2007) finds significant volatility timing coefficient during volatility market states for US hedge funds. To my knowledge, there is no study covering volatility timing of mutual funds across different market states.

#### *Literature Review on Style Timing*

In addition to market timing and volatility timing, recent studies have shifted their attention towards new dimension of style-timing. Chen et al. (2002), Swinkles and Tjoe (2007) and Ferruz et al. (2012) are few among them who find negative or ambiguous results for style timing. Glode (2011)

reports better performance of funds during bad states of economy as compared to good states of economy for the US equity funds for the period 1980 to 2005. Munoz, et al. (2014) report that European fund managers exhibit style timing ability towards size and book-to-market during non-crises period but lack style timing ability during crises. While opposite behaviour is reported for the US green funds. Leite and Cortez (2015) comparing French SRI funds and conventional funds from 2000 to 2012, report little evidence of market and style timing abilities and show that both exhibit better timing abilities during crises period. Munoz et al. (2015) find no difference in timing skills of conventional funds and socially responsible funds. Yi and Hi (2016) use false discovery rate (FDR) to determine the style timing ability of Chinese mutual funds. They report positive market timing but no style timing.

### Data and Variables Construction

#### *Sample and Data Sources*

This study employs monthly data of 84 open-end mutual funds for the period 2007-2014. Following Javid and Ahmad (2008), this study accounted only those companies which remain listed all through the sample period. The main sources of the data are bulletins of State Bank of Pakistan, Mutual funds Association of Pakistan (MUFAP) official website, Karachi Stock Exchange, Securities and Exchange Commission of Pakistan (SECP), concerned individuals and Business Recorder.

Stock data is extracted from DataStream. Following Griffin et al. (2010) This study eliminates “stocks that represent cross listings, duplicates, mutual funds, unit trusts, certificates, notes, rights, preferred stock, and other non-common equity.” As the timing abilities are supposed to be found only for actively managed funds (aim to generate higher returns than the market portfolio), this study consider only non-index funds in this study (Kader & Qing, 2007). The equity, income, Islamic equity, balanced and aggressive income funds in this study are included.

The mutual funds NAV (Net Asset Value) are picked from the MUFAP (Mutual Funds Association of Pakistan) website. The mutual fund returns, the following formula is used:

$$R_{Pt} = (NAV_t - NAV_{t-1}) / NAV_{t-1} \dots \dots \dots (1)$$

where NAV<sub>t</sub> is the net asset value<sup>4</sup> of mutual fund i at time t. For market returns the t-bills rate is taken from the KSE website. The daily t-bill rate is calculated as:

$$R_{ft} = (100 / (1 - P_t))^{1/n} - 1 \dots \dots \dots (2)$$

<sup>4</sup>NAV is formulated by taking the closing market value of the fund's investments minus all liabilities divided by total number of shares (outstanding). It is calculated after the close of market each day.

Pt is the closing value of the Treasury-bill on day t, nt are the number of trading days in the coming year.

### *Performance Evaluation*

The returns of mutual funds can be modelled using the CAPM with the following specifications:

$$R_{Pt} - R_{ft} = \alpha_p + \beta_1 (R_{mt} - R_{ft}) + \varepsilon_{it} \dots\dots\dots (3)$$

where  $R_{p,t}$  is the portfolio return at period t,  $R_{f,t}$  captures the risk-free rate at period t,  $R_{m,t}$  is the returns- on the take market/ benchmark at period t,  $\alpha_p$  measures the portfolio returns with zero covariance with the return. The coefficient  $\beta_1$  is systematic risk measuring the relative risk of the portfolio against the benchmark. A fund with  $\beta > 1$  ( $\beta < 1$ ) has higher (lower) risk than the benchmark.  $\varepsilon_{it}$  is the error term having zero mean assuming to be homoscedastic and serially independent.

The above CAPM model assumes that the beta coefficient remains constant over the investment horizon and does not vary in response to varying t market conditions, ‘bull’ and ‘bear’ markets. This assumption of constant beta limits the validity of the model. Several studies (Pettengill, et al., 1995; Faff, 2001; Lunde & Timmermann, 2004 & Hodoshima, et al., 2000)) confirm that beta varies subject to different market conditions. Fabbiozi (1979) capture the differential aspect of intercept and systematic risk in bull and bear market conditions by introducing dummy variable in CAPM.

$$R_{Pt} - R_{ft} = \alpha_p + \beta_1 (R_{mt} - R_{ft}) + \beta_1 D_t (R_{mt} - R_{ft}) + \varepsilon_{it} \dots\dots\dots (4)$$

where  $D_t$  is a binary (or dummy) variable, takes value of 1 for bull market and zero otherwise.

Fama and French (1993) introduced a three-factor model, and many researchers confirm that their model provides better results than unconditional CAPM model. Fama-French (FF) three-factor model introduces SMB<sup>5</sup> (small minus big) and HML<sup>6</sup> (book-to-market equity) factors to CAPM model along with the benchmark market returns.

To cater the new variables, Eq. (1) now takes the following form:

$$R_{Pt} - R_{ft} = \alpha_p + \beta_1 (R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_{it} \dots\dots\dots (5)$$

SMB (Fama & French, 1993) and HML (Fama & French, 1993) represents the presence of size factor and book-to market factor respectively. A significant positive  $\beta_2$  depicts that size effect

<sup>5</sup> SMB= [1/3 (Small Low(SL)+ Small Medium +Small High)-1/3(Big Low+ Big Medium =Big High)]

<sup>6</sup> HML = [1/2(Small High+ Big High) – ½ (Small Low+ Big Low)]

exists i.e. the small size portfolio generates more returns than the large size portfolio. A significant negative  $\beta_2$  designates the absence of size effect. Conversely, an insignificant  $\beta_2$  shows that both small and large size firms fail to contribute any substantial addition to the portfolio. A positive significant  $\beta_3$  confirms that value effect exists. Value portfolio is estimated by the high book-to-market ratio portfolio. When value effect exists, this means that the portfolio returns is attributable more to the high book-to-market portfolio as compared to portfolio with low book-to-market value. Whereas, a negative significant  $\beta_3$  indicates the presence of growth effect, i.e. the portfolio's return is accounted more by funds having low book-to-market value.

Carhart (1997) establishes that returns of the funds are strongly affected by momentum factor in stock-returns and hence, he extends the three-factor model by introducing momentum factor. Incorporating Carhart (1997) momentum factor, the CAPM takes the following form:

$$R_{P_t} - R_{f_t} = \alpha_P + \beta_1(R_{mt} - R_{f_t}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + \varepsilon_{it} \quad \text{.....(6)}$$

Where  $MOM^7$  (Carhart, 1997) measures the differential impact of past winners and past losers portfolio. A positive significant coefficient of  $\beta_4$ , shows that winner portfolio is contributing more returns to the portfolio as compared to loser portfolio (momentum effect). It indicates that strategy of buying past winner portfolio and selling past loser portfolio will generate higher returns for the portfolio. Whereas, a negative significant  $\beta_4$  confirms the presence of contrarian effect, i.e. the loser funds are performing better than the winner funds.

Nofsinger and Varma (2014) introduce the dummy variables to differentiate the performance and risk estimates under crises and non-crises periods. The model thus takes the following form. This analysis uses this model to check effect for bull and bear period by incorporating two dummy variables

$$\begin{aligned} R_{P_t} - R_{f_t} = & \alpha_P + \beta_{1BU}(R_{mt} - R_{f_t}) D_{BU,t} + \beta_{1BE}(R_{mt} - R_{f_t}) D_{BE,t} + \\ & \beta_{2BU} SMB_t D_{BU,t} + \beta_{2BE} SMB_t D_{BE,t} + \beta_{3BU} HML_t D_{BU,t} + \\ & \beta_{3BE} HML_t D_{BE,t} + \beta_{4BU} MOM_t D_{BU,t} + \beta_{4BE} MOM_t D_{BE,t} + \varepsilon_{it} \quad \text{.....(7)} \end{aligned}$$

Where  $\beta_{BU}$  is a dummy variable, taking value of one when market is bull and zero otherwise.  $\beta_{2BU}$ ,  $\beta_{3BU}$  and  $\beta_{4BU}$  represents SMB, HML and Momentum respectively during bull period. Whereas,  $\beta_{2BE}$ ,  $\beta_{3BE}$  and  $\beta_{4BE}$  represents SMB, HML and Momentum respectively during bear period.

<sup>7</sup>  $MOM = [\frac{1}{2}(\text{Small Winner} + \text{Big Winner}) - \frac{1}{2}(\text{Small Looser} + \text{Big Looser})]$

### Market and Volatility Timing Model

For analysis Treynor and Mazuy (1966) and Henriksson and Merton (1981) models are used to determine the market timing skills of the fund managers. By adding the square returns term to CAPM, Treynor and Mazuy (1966) have modified the basic CAPM model. Hence, the modified model of CAPM is shown in following equation (8):

$$R_{Pt} - R_{ft} = \alpha_P + \beta_1 (R_{mt} - R_{ft}) + \eta_i (R_{mt} - R_{ft})^2 + \varepsilon_{it} \dots \dots \dots (8)$$

where  $R_{p,t}$  is the portfolio return at period 't',  $R_{f,t}$  captures the risk-free (benchmark) rate at period 't',  $R_{m,t}$  measures the returns on the market at period 't'.  $\eta$  represents the market timing ability. Coefficient of the squared term can be negative, indicating that mutual funds are not good enough to predict the market. This model measures the relationship between portfolio's coefficient sensitivity to the market and actual market return. Manager having market timing ability will increase (decrease) market exposure ' $\eta$ ' in response to the market up (down) states. Treynor and Mazuy (1966) argue a positive ' $\eta$ ' designates that the portfolio's rates of returns are more receptive towards positive market returns than negative market returns. A significant positive  $\eta$  symbolized the presence of market timing ability. If a fund manager lacks market timing skill, he depends solely on the stock selectivity skill to achieve abnormal returns.

In order to investigate market timing abilities under bull and bear market, two dummy variables are incorporated in the regression model, resulting into the following form for the model:

$$\begin{aligned} R_{Pt} - R_{ft} = & \alpha_P + \beta_{1BU}(R_{mt} - R_{ft}) D_{BU,t} + \beta_{1BE}(R_{mt} - R_{ft}) D_{BE,t} + \\ & \beta_{2BU} SMB_t D_{BU,t} + \beta_{2BE} SMB_t D_{BE,t} + \beta_{3BU} HML_t D_{BU,t} + \\ & \beta_{3BE} HML_t D_{BE,t} + \beta_{4BU} MOM_t D_{BU,t} + \beta_{4BE} MOM_t D_{BE,t} \\ & \eta_{iBU}(R_{mt} - R_{ft})^2 D_{BU,t} + \eta_{iBE}(R_{mt} - R_{ft})^2 D_{BE,t} + \varepsilon_{it} \dots \dots \dots (9) \end{aligned}$$

Where  $\eta_{iBU}$  and  $\eta_{iBE}$  represents market timing ability under bull and bear market respectively.

For volatility timing, the mutual funds are evaluated by applying the Busse (1999) one index model. Busse has started with CAPM single index model, given by:

$$R_{Pt} - R_{ft} = \alpha_P + \beta_1 (R_{mt} - R_{ft}) + \varepsilon_{it} \dots \dots \dots (10)$$

where  $R_p$  represents the simple excess return over risk free assets (t-bills) on portfolio p in period t,  $R_{mt}$  is the market return (KSE-100) in period t. Busse (1999) defined market beta as "a linear

function of the difference between market volatility and its time-series mean”:

$$\beta_{i,t} = \beta_i + \lambda_i (\sigma_{mt} - \bar{\sigma}_m) \dots \dots \dots (11)$$

Substituting the value of beta from equation (11) into the original CAPM model, the CAPM yields the following form of the Busse Model

$$R_{pt} - R_{ft} = \alpha_p + \beta_i (R_{mt} - R_{ft}) + \lambda_i (\sigma_{mt} - \bar{\sigma}_m) (R_{mt} - R_{ft}) + \varepsilon_{it} \dots \dots \dots (12)$$

where  $\sigma_{it}$  is the market volatility during period  $t$ ,  $\bar{\sigma}_m$  is the average period volatility.  $\lambda_i$  is the coefficient of the volatility term. The sign of the coefficient determines the existence of the volatility timing. The negative value of  $\lambda_i$  will confirm the existence of the volatility timing, indicating that during high volatility periods the portfolio returns should act in the contrasting direction of the market, however, during low volatility periods, the portfolio return should move along with direction of the market.

To investigate volatility timing ability under bull and bear market states, two dummies are introducing into the model as follows:

$$\begin{aligned} R_{pt} - R_{ft} = & \alpha_p + \beta_{1BU} (R_{mt} - R_{ft}) D_{BU,t} + \beta_{1BE} (R_{mt} - R_{ft}) D_{BE,t} + \\ & \beta_{2BU} SMB_t D_{BU,t} + \beta_{2BE} SMB_t D_{BE,t} + \beta_{3BU} HML_t D_{BU,t} + \\ & \beta_{3BE} HML_t D_{BE,t} + \beta_{4BU} MOM_t D_{BU,t} + \beta_{4BE} MOM_t D_{BE,t} + \\ & \lambda_{iBU} (\sigma_{mt} - \bar{\sigma}_m) (R_{mt} - R_{ft}) D_{BU,t} + \lambda_{iBE} (\sigma_{mt} - \bar{\sigma}_m) (R_{mt} - R_{ft}) D_{BE,t} + \varepsilon_{it} \dots \dots \dots (13) \end{aligned}$$

Where  $\lambda_{iBU}$  and  $\lambda_{iBE}$  measures the volatility timing ability of fund managers under bull and bear market respectively.

### Style Timing Model

To measure style timing abilities, this study adopts Lu (2005) indicating that the Treynor and Mazuy (1966) assumes that a manager receives a private signal ( $y_t$ ), equivalent to future market returns and an independent noise term, give by:

$$y_t = R_{m,t+1} + \eta_t \dots \dots \dots (14)$$

Also following Munoz (2015), incorporating the private signal into the Carhart (1997) model will lead to style timing abilities. The model thus takes the following form:

$$R_{Pt} - R_{ft} = \alpha_p + \beta_1(R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + \gamma_2 SMB_t^2 + \gamma_3 HML_t^2 + \gamma_4 MOM_t^2 + \varepsilon_{it} \dots (15)$$

Where 1, 3 and 4 represents the timing abilities towards size, book-to-market and momentum respectively.

To investigate how style timing abilities varies across different market states, following Leite and Cortez (2015), the model becomes:

$$\begin{aligned} R_{Pt} - R_{ft} = & \alpha_p + \beta_{1BU}(R_{mt} - R_{ft})D_{BU,t} + \beta_{1BE}(R_{mt} - R_{ft})D_{BE,t} + \\ & \beta_{2BU}SMB_t D_{BU,t} + \beta_{2BE}SMB_t D_{BE,t} + \beta_{3BU}HML_t D_{BU,t} + \\ & \beta_{3BE}HML_t D_{BE,t} + \beta_{4BU}MOM_t D_{BU,t} + \beta_{4BE}MOM_t D_{BE,t} + \\ & \gamma_{1BU}SMB_t^2 D_{BU,t} + \gamma_{1BE}SMB_t^2 D_{BE,t} + \gamma_{2BU}HML_t^2 D_{BU,t} + \\ & \gamma_{2BE}HML_t^2 D_{BE,t} + \gamma_{3BU}MOM_t^2 D_{BU,t} + \gamma_{3BE}MOM_t^2 D_{BE,t} + \\ & \gamma_{4BU}(R_{mt} - R_{ft})^2 D_{BU,t} + \gamma_{4BE}(R_{mt} - R_{ft})^2 D_{BE,t} + \varepsilon_{it} \dots (16) \end{aligned}$$

Where 1BU, 2BU, 3BU and 4BU measure the sensitivities towards size, book-to-market, momentum and market during bull period and 1BE, 3BE and 4BE measure the manager's abilities during bear period. Finally, to obtain selectivity, timing and volatility timing coefficients under bull and bear market, equation 12 is incorporated into equation 16. The model thus results into the following form:

$$\begin{aligned} R_{Pt} - R_{ft} = & \alpha_p + \gamma_{1BU}(R_{mt} - R_{ft})^2 D_{BU,t} + \gamma_{1BE}(R_{mt} - R_{ft})^2 D_{BE,t} + \gamma_{2BU}(\sigma_{mt} - \bar{\sigma}_m)(R_{mt} - R_{ft})D_{BU,t} + \\ & \gamma_{2BE}(\sigma_{mt} - \bar{\sigma}_m)(R_{mt} - R_{ft})D_{BE,t} + \gamma_{3BU}SMB_t^2 D_{BU,t} + \gamma_{3BE}SMB_t^2 D_{BE,t} + \gamma_{4BU}HML_t^2 D_{BU,t} + \\ & \gamma_{4BE}HML_t^2 D_{BE,t} + \gamma_{5BU}MOM_t^2 D_{BU,t} + \gamma_{5BE}MOM_t^2 D_{BE,t} + \varepsilon_{it} \dots (17) \end{aligned}$$

Where all the variables remain the same as discussed above.

## Empirical Results and Discussion

### *Descriptive Statistics*

The following section covers the descriptive statistics of all the variables covered in this study over the time period 2007-14.

Table 1  
*Descriptive Statistics*

Variable s	Definitions	Mean			St.Dev			Skewness			Kurtosis		
		Whole	Bull	Bear	Whole	Bull	Bear	Whole	Bull	Bear	Whole	Bull	Bear
<b>Rp</b>	<b>Return of Portfolio</b>	0.007	0.010	0.003	0.059	0.053	0.015	-2.151	-1.716	32.170	29.132	31.260	1380.737
<b>Rm</b>	<b>Market Return</b>	0.024	0.031	-0.007	0.056	0.047	0.022	0.041	0.537	-3.27	3.928	5.275	12.499
<b>SMB</b>	<b>Size Portfolio</b>	0.040	0.044	-0.004	0.091	0.086	0.023	-0.068	-0.076	-0.067	1.956	2.243	14.702
<b>HML</b>	<b>Book-to-market Portfolio</b>	-0.044	-0.038	-0.006	0.132	0.129	0.035	-0.1	-0.208	-4.914	2.364	2.521	30.800
<b>MOM</b>	<b>Momentum Portfolio</b>	0.117	0.065	0.051	0.455	0.405	0.222	-0.233	-0.254	2.626	2.408	2.805	11.386
<b>Obs.</b>		3108	3108	3108	3108	3108	3108	3108	3108	3108	3108	3108	3108

Table 1: Descriptive statistics of all the variables for the data from 2007 to 2014 are presented. The variable definitions are provided in column 2.

Table 1 summarises the descriptive statistics for mutual fund returns and benchmark returns over the sample period ranging from 2007 to 2014 for the whole sample as well as for the bull and bear periods. It shows that mean of funds excess returns, market returns, size factor and momentum factor are statistically significantly lower in bear periods than in bull periods. However, the mean of the book-to-market factor is lower in bull period. It also reports that all fund excess returns and benchmarks are more volatile in bull period than in bear periods. The results show that on average, the excess returns are negatively skewed but in bear periods the excess returns series are positively skewed while they are negatively skewed in bull periods. Whereas, the opposite behaviour is observed for the market returns.

### *Regression Results and Discussion*

Before discussing the results of this study, it is appropriate to discuss the validity of the estimation technique. For panel data, fixed effect and random effect model are applied. The results for

fixed effect model are reported in this study as Hausman test comes up in support of fixed effect model.

Table 2  
*Performance in Bull and Bear Market*

Variables	Bull	Bear
$\alpha_p$	- 0.004** (-3.181)	0.024*** (8.153)
$\beta_1$	0.608*** (38.864)	0.832*** (19.910)
$\beta_2$	-0.081*** (-9.753)	-0.089*** (-4.484)
$\beta_3$	0.0193** (3.436)	0.223** (10.369)
$\beta_4$	0.003 (1.331)	0.038*** (7.936)
$R^2$	31	

Note: This table reports the estimates of performance of Pakistani mutual funds across Bull and Bear market, built on multi-factor model of Eq (6). The coefficient  $\alpha_p$  measures the performance. While  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  represent the market excess return, size factor, book-to-market factor, momentum factor respectively. The results in the parenthesis report the (t-value). The \*\*\* indicates significance at 1%, \*\* at 5% and \* at 10% respectively.

Table 2 presents results of performance under bull and bear market for the entire sample period. When looking at performance (Jensen's alpha), the funds exhibit statistically significant negative alpha at 5% during bull period. The alpha in expansion periods concur with Ende (2014). It means that mutual funds are not adding any value in bull period. They conclude that volatility (high volatility leads to more information advantage) and net cash inflows are key factors affecting fund's performance. However, alpha is statistically positive at 1% during bear period. It suggests that the managers perform significantly well during bear period than in bull period. These results are in line with results reported by Kosowski (2011), Glode (2011), Spanje (2012), suggesting that funds perform better in Bear market than Bull market. The results suggest that fund managers are more active in bear market than bull period. One possible explanation can be that managers have access to information and they take advantage of asymmetric information and variation of information signals (Kosowski, 2011). These results are in contrary to Fink, et al. (2015), who finds that mutual funds fail to outperform during recessions. But when Fink, et. al (2015) uses a short sample period, they find that mutual funds outperform in recessions.

Then three-index and four-index models are estimated following Kader and Qing (2007). They find that taking size and value effect has led to higher explanatory power while analysing managed portfolio performance in Hong Kong. Adding three-index and four-index factors have increased the explanatory power of the model. The funds have a higher loading towards market excess return, book-to-market factor and momentum in bear market. However, the coefficient  $\beta_2$ , representing size has a negative and statistically significant coefficient, depicting that size portfolios has no impact on portfolio returns. Funds are more inclined towards large size companies both in bull and bear market. The results for size in bear market is in line with Glode (2011) while opposite for bull period and for other factors.

A positive significant  $\beta_3$  confirms that funds are tilted towards the value portfolio estimated by the high book-to-market ratio. When value effect exists, this means that the portfolio returns are attributable more to the high book-to-market portfolio than the low book-to-market portfolio. These results are in line with Ende (2014)

As far as momentum factor is concerned, an interesting fact comes forward; the coefficient becomes statistically significant during bear period. The positive loading towards momentum is consistent with Kosowski (2011), Ende (2014)

Table 3 presents results of Equation 17:

*Timing abilities under bull and bear market*

Variables	Bull	Bear
$\alpha_p$	0.008*** (7.250)	-0.007** (-2.234)
$\gamma_1$	-0.615*** (-4.336)	5.974*** (9.734)
$\gamma_2$	7.673*** (39.828)	-13.104*** (-37.463)
$\gamma_3$	-0.122** (-2.770)	-0.181** (-2.430)
$\gamma_4$	-0.022 (-0.985)	-0.078 (-0.594)
$\gamma_5$	-0.012** (-3.625)	-0.022** (-3.974)
$R^2$	0.52	

Note: This table reports the estimates of performance of Pakistani mutual funds across Bull and Bear market, built on multi-factor model of Eq (17). The coefficient  $\alpha_p$  measures the performance (selectivity skill), while  $\gamma_1$ ,  $\gamma_2$ ,  $\gamma_3$  and  $\gamma_4$  and  $\gamma_5$  represent the timing abilities towards market excess, volatility, size, book-to-market factor, momentum factor respectively. The results in the parenthesis report the (t-values). The \*\*\* indicates significance at 1%, \*\* at 5% and \* at 10% respectively.

Table 3 presents the results of how timing abilities varies across market conditions.

The selectivity timing is statistically positive, significant at 1% under bull market and negative at 5% under bear market. It shows that managers' exhibit stock picking abilities in bull period while lack this ability during bear period. It confirms that fund managers lack the ability to alter their portfolios according to the extreme market conditions to give advantages to the shareholders. This is in line with Philippas (2013) who suggest that fund managers should be capable enough to take advantage of asset mispricing and recognize the most undervalued equities and to adjust their portfolio's risk level to bull and bear markets correspondingly.

These findings are in line with Kacperczyk, et al. (2014). Here, our findings are opposite to Kosowski (2011). It is important to mention that we are considering a different sample size and time period.

In terms of market timing, the market factor is lower in bear period than in bull period. This confirms the presence of positive market timing. This result is in line with Kosowski (2011); Kacperczyk, et al. (2012). It is interesting to find that coefficients of selectivity skills and market timing behave in opposite directions. It is in line with Neto (2014) who finds that funds managers cannot hold both skills simultaneously. He argues that when a manager concentrates in picking under-priced stocks cannot follow the market movements and vice versa.

As far as volatility timing is concerned, the funds possess statistically significant volatility timing in bear market. The negative sign confirms the existence of volatility timing skill among the fund manager. It is consistent with the findings of Busse (1991), Chunhachinda (2003), Zhao (2011), Huang (2012) confirms little evidence of volatility.

Overall, the results indicate no sign of style timing abilities for Pakistani fund market. These results are in compatible with Yi and He (2016) who find no evidence of style timing abilities among Chinese mutual funds. As per our results, the funds exhibit negative style timing abilities towards size and momentum factors in bull and bear period. These results are in line with Leite and Cortez (2015) for bull period but opposite for bear market. The style timing ability to time book-to-market factor is silent both during bull and bear market. The fund managers fail to exhibit a correct book-to-market timing ability as they achieve a negative but an insignificant  $\gamma_{HML}$ . Although the coefficients are negative but it is not statistically significant. These results are in agreement with Ferruz et al. (2012) on conventional funds. However, the study does not segregate the bull and bear period.

The absence of size style-timing is in line with Chen, et al. (2002), Swinkles and Tjoe (2007) but opposite to Munoz (2015). It is important to highlight that these studies do not attempt to segregate bull and bear market. While this study results are in line with Leite and Cortez (2015) for bull period. The absence of book-to-market style timing is consistent with Chen, et al. However, these results are

contrary to those previously reported by Munoz (2015) and Leitz and Cortez (2015)

As far as momentum style-timing is concerned, these findings are in line with those reported by Lu (2005) and Munoz (2015). Though these studies do not take into account the effect of bull and bear market separately. It suggests that fund managers are selling winners too soon and keeping losers too long. The results are in agreement with results reported by Leitz and Cortez (2015) for conventional funds for crises period.

### Conclusions

Recently many researchers in mutual fund industry have realized the significance of comparing the funds' performance in response to ups and downs of the market. In fact many studies show that fund managers outperform in bear market than bull market (Kosowski, 2011; Leite & Cortez, 2015). For an emerging economy like Pakistan, this issue is more pertinent to explore as Claessens, et al. (2015) report that recessions and financial disruptions in emerging markets are costlier and protracted than developed economies with greater losses in output.

In this regard, this paper aims to investigate the variation of performance and timing abilities of 84 Pakistani mutual funds for the period 2007 to 2014 during bull and bear market.

The results depict that funds perform significantly better in Bear market than Bull market, in agreement with prior studies on mutual funds (Glode, 2011; Kosowski, 2011; Leite & Cortez, 2015).

In the context of managerial abilities, funds exhibit selectivity timing ability during bull period. With regards to market timing and volatility timing funds perform better during bear market, while these skills are absent in bull period. As far as style timing abilities are concerned, the Pakistani fund managers exhibit significant negative timing skills. The higher values of coefficients are reported in bear market than bull period. The results for bear market are consistent with Leite and Cortez (2015) but are opposite for bull period.

The implications that emerge from these results are that the mutual funds perform effectively in bear market. The mutual funds are capable of adjusting their investment according to the market condition by utilizing superior information. Fund managers appear to distinguish that investors behave quite differently in bull and bear markets. They follow more diversified investment strategies after periods of low market returns than after periods of high market returns.

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# RELATION OF PERCEPTION OF SAFETY CLIMATE AND JOB SATISFACTION IN INDUSTRIAL SECTOR OF KARACHI

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## Abstract

*The present study attempts to investigate the relationship between worker's perception of workplace safety and job satisfaction. 375 participants were approached through convenient sampling from different enterprises. The study design was correlational. Worker's perception of workplace safety was measured through Safety Culture Perception Survey (2009) and job satisfaction was measured through job satisfaction scale (1954). Posited within the framework of reciprocity theory, it was hypothesized that there would be a positive correlation between perception of workplace safety and job satisfaction. The relationship between the variables was calculated through Pearson product moment correlation. Results showed significant correlation between the two variables, furthermore, age difference was also explored through t test, which was also found significant between the two groups.*

**Keywords:** Perception, Job Satisfaction, Industrial Sector, Work Place.

**JEL Classification:** E120

## Introduction

Safety related concepts have been considered important in the workplace as it leads to injury reducing behavior (Zohar, 2010). The inculcation of safety climate in the workplace is an effort of management commitment to workers' safety. The role of perception of safety plays an important role if seen within the framework of social exchange theory founded by Blau (1960), which states that in any interdependent relationship contract between two parties is based on the concept of reciprocity. If any party is treated favorably, feels obligated to behave similarly and vice versa that is in a reciprocal manner (Gouldender, 1960). The concept of social exchange theory has been widely studied in the workplace by Eiseberger, Fasolo and Davis-LaMastro, (1990), Dejoy, Schaffer, Wilson, Vandenberg and Butts (2004) and Mearns, Hope, Ford and Tetrick (2010).

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Management's effort to promote safety in the workplace can be seen as reciprocity dynamic, ie when employees perceive organization behaving positively towards their safety they in turn respond similarly (Hoffman, 2003). Shen, Ju, Koh, Rowlinson and Bridge (2017) stated that transformational leadership has direct impact on safety behavior resulting in safety compliance and leader participation, participative leaders have been perceived as supportive.

Workplace safety has been studied with regard to safety outcomes like reduced injury rate and following of safety tactics. But it has not been studied widely with regard to employee outcomes like turnover and work engagements. Little attention has been focused on psychosocial factor like job satisfaction. Job satisfaction as an attitudinal variable affects various facets of the job (Judge & Kammeyer-Mueller, 2012). It seems to affect variables like work performance, work engagement and turnover which has many human resource implications (Judge, Thorosen, Bono & Patton, 2001; Rekitta, 2008 & Tett & Mayer, 1993). As the perception of workplace safety has been upraised by many researchers as affecting job satisfaction which in turn affects many human resource variables in a latent manner (Huang, Lee, McFadden, Murphy, Robertson, Cheung & Zohar, 2016).

The present study attempts to fill the gap between safety climate and work attitude like job satisfaction as most of the literature is focused on studying safety outcomes.

### **Literature Review**

Long before the emergence of positive psychology in the workplace, Maslow (1970) identified safety as one of the basic needs of humans and animals in his hierarchy of needs. No doubt, humans earn bread and butter as a result of their employment which satisfies their basic need of hunger and thirst and then move onto the next stage to secure resources for himself and his young ones. In other words, he looks for safer ways to secure resources for his survival.

Concerns for employees, be it health and safety, financial, physical and psychological have been the focus of attention even before the early 20th century. First, it was discussed under the heading of workers' comfort, later during the mid of 20th century job satisfaction was identified as a precursor of good performance. With the passage of time the same concept was considered as an important economic variable (Freeman, 1978). However concern for employees went through another development during the last part of the 20th century, this time it was discussed as an integrated ability to work, which means there should be a balance between worker's capacity and work demand (Gould, Iimarinen, Jarvisalo & Koskinen, 2008). Implication of such ideas may result in job satisfaction, which is an affective variable resulting from perceived working condition (Locke, 1969).

Well being in the workplace has gone through long historical development. Not only the human friendly tools, machines and buildings are designed to enhance performance, rather improving atmosphere, machines and ergonomics provide a way to capitalize on the skill of aging work force.

On a broader perspective, well being seems to have strategic implications (Zwetanen & Pat, 2004; Thun, Grobler & Miczka, 2007; Perca, 2011; Ilmarinen & Rantanen, 1999).

Numerous researchers identified several workplace characteristics like health and safety practices, work designs, ergonomics, workplace violence, workplace harassment, addiction and even relationship with colleagues have well being implications (Patterson, 1957; Hoke, 1997; Neuman & Baron, 1997; O'Leary-Kelly, Griffin & Glev, 1996; Blanchard, 1993; Cooper & Cartwright, 1994). By removing all these perils from the dangerous work situations, organizations can have positive impact on health and well being (Cooper & Marshal, 1998).

Danna and Griffin (1999) identified work related, personality and occupational stress related variables leading to workplace health, be it physical or psychological which results in individual consequences (in terms of physical and psychological health) and organizational consequence in terms of health insurance cost, absenteeism, productivity and lawsuits. Cooper and Cartwright (1994) pointed organizational consequences of well being and health can affect the income of the organization. Moreover, Neville (1998) brought to light that workplace hazards can result in low productivity and efficiency which results from the wages for lost time of uninjured workers. According to Conrad (1988) Cooper and Cartwright (1994) the employee benefit soared from 30% to 50% of national health bill, whereas, Elkin and Rosch (1990) reported that 54% of absences in the workplace were stress related and replacing these employees may result in huge cost. Workplace stress induced injury claims are the most common out of ten injury categories in workers' compensation statement (McElveen, 1992; Esters, 1997).

Skov, Borg and Orhede (1996) discovered that high job demands, lack of control and lack of support among sales personnel resulted in musculoskeletal symptoms. Esters (1997) reported the case of 1996 product liability lawsuit against Digital Equipment Corporation due to which company had to pay six million to three women whose injuries resulted from the use of company's keyboards. That is why, companies have become aware of "human factor" in the workplace, few considered it expensive but ergonomic adjustment resulted in workers' efficiency and productivity. Modern organizational literature reported that concern for human factor and ergonomic adjustments have resulted in more efficiency and productivity decreasing the number of uncomfortable moves like bending, stretching, leaning and pushing (Larson, 1998).

Most researches focus on traditional outcomes of safety, whereas, Huang, Lee, McFadden, Murphy, Robertson, Cheung and Zohar (2016) used social exchange theory to study how safety climate perception is related to employee outcome and the mediating effect of job satisfaction on safety climate and human resource outcomes. As proposed by need theory of Maslow (1954) their results indicate that safety climate ensures employees that their company cares for them. According to social exchange theory, they perceive that their safety needs are met, hence report more satisfaction and try to pay back by engaging more and more.

Moreover, LaBar (1997) and Champ (1951) maintained that responsibility for safety should be a part of every employee's job, at every level which only signifies safety culture. This culture is strengthened by management's commitment or non commitment (Manuele, 1997). The relationship between perception of safety climate and management's commitment has been reported by Cohen (1977) and Zohar (1980) as high rank of safety officers, safety training, safety inspection and promotion and recognizing of safety. This relationship is again based on social exchange theory that employees who perceive organizational commitment to safety as beneficial for their well being and reciprocate positively by engaging in safe behavior (Hofmann et al., 2003).

Satisfaction with workplace environment or workplace policies is perceptual in nature, i.e., if workplace is perceived as safe only then it can lead to satisfaction. In other words, job satisfaction and organizational climate seem to play a mediating role in workplace accidents. This could also be explained in the light of reciprocity theory (Gouldener, 1960) which states that when workers perceive the environment as safe then accident frequency is likely to be low rather satisfied workers also perceive their supervisors as supportive and consider their management's role as crucial in their safety. Moreover, Robin and Walker (2000) Sumrani and Seoprihanto (2000) found that companies sometimes provide occupational safety and health not only to increase sense of security among employees rather to enhance their satisfaction level. Yousuf, Eliyana and Sari (2012) discovered that changes in occupational safety and health also bring changes in the satisfaction level of employees. Stoilkovska, Pancovska and Mijoski (2015) studied the effect of perceived safety climate and job satisfaction with age as a moderating variable, results no relationship between age and job satisfaction with regard to safety.

Keeping the above literature in mind it was thought that these variables of workplace safety and satisfaction of employees be explored in Pakistani culture. As the above literature is mainly drawn from developed countries that is why it was decided to explore these variables in local culture as our country is not that advance and prosperous to spend much on safety aspects.

It was hypothesized that there will be a positive correlation between perception of workplace safety and job satisfaction. There would be a difference in different age groups.

### Methodology

**Sample:** 375 employees were approached conveniently from different industries of Karachi. The age range of the respondents was from 20 to 50 years, which was further divided into two groups of 20-35 and 36-50.

**Study Design:** The correlational study design was followed to find the relationship between perception of workplace safety and job satisfaction.

**Measures:** Perception of workplace safety was measured through Safety Culture Perception Survey by Simon and Cistario (2009), which is 7 item 5 point likert type scale ranging from 1 not true to 5 definitely true. Job Satisfaction was measured through Job Satisfaction Scale by Ganguli (1954), which is three item 7 point likert type scale, ranging from 1 that is strongly disagree to 7 that is strongly agree, high score showing greater satisfaction with job.

**Procedure:** 375 people working in different industries of Karachi were approached individually, by contacting their management. Permission was granted after the reason for data collection was explained. Reluctance on the part of respondent was overcome by giving assurance of unanimity of data.

**Ethical consideration:** Employees were assured of confidentiality. Their reluctance was overcome by telling them that the data is meant for research purpose only. They were also assured that they can withdraw at any stage of research.

**Statistics:** Pearson Product Moment Correlation was calculated through SPSS 19.00. Regression model was also carried out to find the predictive relationship between the two variables. Furthermore, age difference was calculated through t test for independent sample.

**Time frame:** The data was collected during the year 2014 and 15, the writeup was completed in 2016.

### **Operational Definition**

#### *Job Satisfaction*

Job Satisfaction has been defined by Locke (1976) “as a pleasurable and positive emotional state resulting from the appraisal of one’s job or job experiences and as a function of the perceived relationship between what one wants from one’s job and what one perceives it as offering.”

#### *Perception of safety culture*

Perception of safety culture has been defined by Piers, Montin and Balk (2009) as “a set of enduring values and attitudes regarding safety issues, shared by member of every level of an organization.”

## Results

Table 1  
*Showing descriptive statistics*

Variables	N	Minimum	Maximum	Mean	St Deviation
Job satisfaction	375	3.00	22.00	14.276	5.5401
Safety	375	7.00	38.00	23.0404	7.248

Table 2  
*Pearson's Correlation between Job Satisfaction & Safety*

		Job Satisfaction	Safety
Job Satisfaction	Pearson Correlation	1	.608**
	Sig. 1-Tailed		.000
	N	322	322
Safety	Pearson Correlation	.608**	1
	Sig. 1-Tailed	.000	
	N	322	322

\*\*Correlation is significant at the .000 Level (1-tailed)

Table 3  
*Regression model expressing the predictive relation between perception of safety and job satisfaction*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	R <sup>2</sup>
	B	Std. Error	Beta			
(Constant)	3.561	.819		4.348	.000	
Safety	.465	.034	.608	13.716	.000	.370

Job satisfaction: dependent variable

The model result states that increase in safety measures is related to increase in job satisfaction. Results show that safety positively affects job satisfaction ( $p = .000$ ,  $\beta = .680$ ,  $R^2 = .370$ , which means the model is 37% explained.

Table 4

*Age difference between 20-35 and 36- 50 age group*

Age groups	N	Mean	Std Dev	Df	T	Sig	95%confidence Interval
20-35	168	19.24	7.36				Upper limit Lower limit
				2	7.934	0.000	8.42 14.00
36-50	207	35.73	9.92				

### Discussion

The impact of safety management practices is such that it promotes positive workplace perception, thereby making workers follow safety practices.

The present study attempts to explore the relation of perception of workplace safety and job satisfaction. Results revealed strong and positive correlation significant at .000 level, table no.2. Results support the related literature and existing hypothesis that there will be a positive correlation between perception of safety and job satisfaction.

Furthermore, it was also analyzed whether safety practices predict satisfaction at the workplace, regression model was carried out which strengthens the assertion that safety practices predict job satisfaction,  $R^2 = .370$ , which means the model is 37% explained, table no.3. Wachter & Yorio (2014) stated that safety management system could be predictor of lost time injuries and illnesses as an outcome and the same predictor seems to be related to the safety climate; justice climate and safety related behaviors as a mediator. They concluded out of their research that system of safety management practices significantly predicted all of the employee safety perceptual and behavioral constructs. At yet another place, these two authors in 2013 stated that perceived level of safety management negatively predict injuries.

Adjekum (2014) studied perception of safety among students of aviation program, his study revealed that freshmen had favorable perception of safety culture as compared to senior students and

it was attributed to different operations which they had to perform.

These results are further supported by Gyeke's (2005) results, which state that highly satisfied workers consider their work to be safe. Moreover, they consider their colleagues' efforts toward safety as worthy and encourage others to behave safely.

Past and recent, both studies have shown relationship between safety climate and job satisfaction (Gouldener, 1960). Moreover, job satisfaction in conjunction with organizational commitment mediates the relationship between safety climate and safety behavior (Clark, 2010).

Champ (1997) stated that responsibility for safety rests with everyone in the organization from top to bottom, which is how culture ensures it. Huang, Ghen, Krauss and Rogets (2004) stated that company's safety and health policy is basically an investment in human resource because it cut down injury cost rather it increases job satisfaction and cut down turnover rate. Promoting health and safety issues plays a pivotal role in improving the well being of employees.

With regard to age, Aronowitz in 1973 found that younger workers expect more from workplace, if their expectations are not met with they become frustrated and dissatisfied.

Qureshi and Sarki (2014) proved that there exists a relationship between age and job satisfaction. The present study also supports the existing literature with a t value significant at .000 level.

### **Conclusion**

It is safely concluded that no doubt safety and job satisfaction seem correlated, but there is a lot that needs to be improved like building, location, machinery, equipment and so on. Change and improvement with regard to work is not constant, since stability is something that can never be achieved ideally. With regard to the accompanying variables like human resources, like job performance, work engagement, turnover and absenteeism that are indirectly affected by job satisfaction as an implication of perception of workplace safety. The current study proves the relationship between work attitudes like job satisfaction and perception of safety climate in the workplace. It also provides impetus to future researchers and human resource professionals to look into the application of safety policies and practices to impact not only attitudes rather work motivation, turnover and absenteeism.

### **Limitations and Recommendations**

The data was collected from different types of companies that makes it difficult to generalize. Satisfaction and perceptual measures are subjective in nature; efforts should be made to include objective measures. Constructs like work setting variables and individual and organizational

consequences can be assessed objectively. The study was also restricted to just one work attitude like job satisfaction, because the time spent in filling out a form was considered a barrier to work or time consuming despite the shortness of scales, therefore it is recommended for future research to include a few more variables like motivation, turnover and engagements.

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# THE ROLE OF FINANCIAL DEVELOPMENT AND FINANCIAL OPENNESS IN THE GROWTH OF ASEAN NATIONS

Mazhar Mahmood<sup>1</sup> and Kashif-ur-Rehman<sup>2</sup>

## Abstract

*This study aims at ascertaining the impact of financial development and financial openness on the growth of ASEAN nations. Panel data of six ASEAN nations (Indonesia, Malaysia, Singapore, Thailand, Vietnam and the Philippines) were taken and results were obtained through Mean Group Estimation. Our results show that by and large trade openness and stock market development played a significant role in the growth of ASEAN nations in the short-run as well as in the long-run. However financial openness and credit market development were not found significant for growth. Cross-sectional results show that only Indonesia and Malaysia witnessed a positive role of financial development in the short run, while Singapore witnessed a significant role of trade channel and credit market development. Philippines did not observe any role of financial development, financial openness and trade openness in their growth. Thailand experienced a positive role of financial openness in growth.*

**Keywords:** Financial Development, Financial Openness, Trade Openness, Pool Mean Group Estimation, Dynamic Heterogeneous Panel.

**JEL Classification:** G390

## Introduction

With the emergence of economic blocks and increase in trading of financial assets across the borders, it would not be out of interest to inquire in to the benefits of financial openness like economic growth. And when financial openness is associated with financial development, it is interesting to see the impact of both on growth. ASEAN is a good model to observe the effects of financial openness and financial development on growth.

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The Association of Southeast Asian Nations (ASEAN) was established with the objective of enhancing economic ties between countries. It took a step ahead and established ASEAN Economic Community (AEC). This forum would facilitate the free flow of goods, services, and capital across the region by the year 2020. The formation of ASEAN Economic Community (AEC) was a step towards enhanced integration encompassing the economic and market integration

The ASEAN financial integration was also augmented by preferential trade agreements. Although financial integration among ASEAN nations was not up to the mark, some progress in this area was made in the form of one stop investment centers and ASEAN Investment Area (AIA). On the pattern of European Economic Community, ASEAN nations thought of creating an ASEAN economic community (AEC) by 2020.

ASEAN has also taken a step towards the formation of ASEAN Bond Market which later on suffered from problems of market depth and liquidity. The role of sound institutional frame work and robust regulatory supervision also deserves attention. Less developed countries generally lack in institutional quality and financial depth<sup>3</sup>. ASEAN can be differentiated from Europe on the basis that in EU most of the countries had achieved robust level of financial development while in case of ASEAN many developing countries lacked in financial development and financial depth. When we talk about financial development we mean stock market development and credit market development. Most of the economies of ASEAN region are emerging economies offering robust returns to the investors and attracting foreign capital. Despite this ASEAN is far behind in reaping the fruits of financial integration. One of the reasons may be a rather weak institutional framework, inadequate regulatory supervision and lack of financial depth.

ASEAN nations experienced considerable financial integration during the last few decades. Countries like Indonesia, Malaysia, Singapore, and Thailand took concrete steps for capital market integration. After the financial crisis of 1997-1998, ASEAN nations experienced higher degree of integration. Generally financial integration results in growth, risk sharing, and consumption smoothing. These benefits are derived from financial integration when it is accompanied by financial development. This study is an endeavor to find out whether ASEAN nations (Malaysia, Indonesia, Singapore, Thailand, and Philippines) witnessed economic growth as a result of financial openness and financial development<sup>4</sup>.

### **Literature Review**

This section provides ample previous research findings and discussion in respect of factors that may impact growth in the context of financial openness and financial development. That is financial

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<sup>3</sup> Financial depth is proxies by ratio of credit to private sector to GDP ratio.

<sup>4</sup> Financial openness is measured by taking ratio of foreign assets and liabilities to GDP.

development (Capital market development (stock market development), credit market development (financial depth); financial openness and trade openness were discussed in the light of previous studies.

Let us see how the earlier research on the issue of financial openness is thought provoking for us. Financial openness has been a growing phenomenon in recent years. The evidence to this has been a considerable increase in quantum of international assets and liabilities which has become thrice of GDP since the mid-1980s (Lane & Milesi-Ferretti, 2007). It would be interesting to see whether financial openness served to enhance growth. This question is, no doubt, significant academically and from policy point of view. Some studies shed light on this phenomenon as in the case of Imbs (2004) and Kose, Prasad, and Terrones (2003) establishing that financial openness has a positive effect on financial development which ultimately leads to growth. Kose et al. (2008) and Kose, Otrock, and Whitman (2008) affirmed the same.

The importance of financial development can be judged from the fact that it helps countries reap the benefit of growth as well as absorb shocks. Credit market linkages may cause the spread of crises as highlighted by Kaminski and Reinhart (2000). The said phenomenon was empirically observed by Moto et al. (2007). International credit market openness may be beneficial as well as harmful. Recent financial crisis of 2008 may be attributed to cross border credit market openness<sup>5</sup>. The same was empirically tested and affirmed by Citronella and Goldberg (2010). Some researchers such as Baxter and Crucini (1995), Kehoe and Perri (2002), Heathcote and Perri (2002, 2003, 2004) and Faia (2007) established that with increase in degree of financial openness, business cycle correlation decreases. Therefore, financial openness may provide avenues for diversification and risk sharing. It is worth mentioning that empirically financial openness and cyclical co movements are positively associated. However in theory it is otherwise (Imbs, 2006).

One of the aspects of financial openness is access to foreign equity markets for trading purpose. It was observed that equity market openness between developed countries is high while equity markets of emerging economies are less integrated. Hence, the degree of stock market openness is important from academic and empirical point of view. Korajczyk (1996) observed that the degrees of equity market openness influences economic growth, financial market development and explicit capital controls. Auzairy et al. (2012) stressed on the need to ascertain the determinants of equity market openness in order to achieve the regional and world financial market openness.

The degree of equity market openness has important implications for the investors as it may affect the diversification benefits for the investors. Ibrahim (2005) observed that the degree of equity market openness has major implications on the financial stability of a country. The study of forces behind the market openness is beneficial for international investors to understand the risks and returns of diversification. Especially with reference to ASEAN countries, Karim and Karim (2012) identified

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<sup>5</sup> Many economies in the world received shocks from sub-prime mortgage crisis that erupted in USA. This phenomenon is also referred to as financial contagion effect.

contagion effect, economic integration and capital market characteristics in order to contribute to the research on financial openness. Chuah (2005) reported that the level of financial openness of emerging markets is determined by the stock market development, trade openness and country risk.

Financial openness gives rise to financial development which brings about growth and other benefits. Hence, financial development is a bridge between financial openness and growth. The growth benefit would depend on the degree of financial openness and removal of some frictions in the markets. The impact of financial development on growth was tested on large data set by controlling the other factors of growth (King & Levine, 1993a, 1993b, 1993c). The positive impact of stock market development and credit market development on growth was observed by Levine and Zervose (1998). It is interesting that the effects of financial development on growth are non-linear and not uniform. An important finding was reported by De Gregorio and Guidotti (1995) that the growth effects of financial development vary across countries and time. That is growth supported by financial development is time and country variant. They added that such effects may become adverse. An important research finding came from Rioja and Valve (2004) that relationship between financial development and growth changes on the basis of different levels of financial development. Different regions of financial development were identified which may affect the growth of financially integrated countries<sup>6</sup> (Rioja & Valve, 2004).

In the context of financial development and financial openness the study conducted by Masten et al. (2008) is quite relevant. Using panel data of countries they observed that growth benefits are reaped by the countries when the threshold level of <sup>7</sup>financial development passes 90% of GDP then it gradually declines. When the level of financial development exceeds 160% of GDP, the growth benefits become insignificant. Although it was not a rigorous study to capture the threshold effects of financial development, yet a conjecture may be made that positive effects of financial openness accrue to the economies when countries experience financial development in the range of 60% and 150% of GDP.

Masten et al. (2008) added that countries having less financial development suffer from costs of financial market openness. They reported that the growth benefits accrue to the economies when a threshold level of financial development is achieved. The countries below this threshold level or above this level fail to achieve the desired benefits of market integration. The advanced countries (financially developed and enjoying more financial depth than emerging market economies) do not reap fruits of growth from financial openness. They added that financial market openness would not be fruitful for the countries having weak financial institutions (less financially developed). That is why financial development gains importance as a factor effecting growth.

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<sup>6</sup> Here we mean different levels of stock market development and financial depth.

<sup>7</sup> Financial development is calculated as ratio of domestic credit to gdp and market capitalization to GDP.

Trade openness is a factor which deserves special attention in the context of financial openness and growth. This is a well documented fact that capital market openness follows economic integration. Clausing and Dorobantu (2005) reported that investors would divert funds to those markets (economies) which are open to trade and enjoy stable economic environment. Davis (2012) also incorporated bilateral trade integration in a model. Therefore the inclusion of trade openness as an explanatory variable to augment growth is justified from literature.

### **Data Model and Methodology**

For the purpose of our study panel data of countries from ASEAN regions (Malaysia, Indonesia, Singapore, Thailand, & Philippines) was collected. Yearly observations of these countries from 1970 to 2012 were taken. Our data consists of dynamic heterogeneous panel, since countries differ in level of financial development, trade openness and degree of financial openness. Data was taken from World Development Indicators, World Bank publication, external wealth of nations data set compiled by Lane, Millese-Ferretti and <sup>8</sup>IFS published by IMF. This data contains the yearly observations of our variables of interest. Yearly observations were taken since it is more appropriate to measure growth, financial development and financial openness on a yearly basis. Moreover for our variables like growth, financial development, financial openness and trade openness, monthly and quarterly observations would not serve the purpose from analytical point of view. Usually in case of macroeconomic variables yearly observations are more suitable than quarterly or half-yearly data.

As far as measurement of financial openness is concerned, net foreign asset position of countries was taken in to account. We have relied on Lane, Milessi-Ferretti (2007) who used ratio of net foreign assets to gross domestic product (GDP) to measure the degree of financial openness. This measure incorporates foreign assets and liabilities in the form of portfolio investment in equities. Moreover, correlation of returns on financial assets was also computed to ascertain the convergence of returns. The reason being financial openness results in convergence of returns on financial assets traded in different markets. On the basis of the volume of trade and available data, five countries from ASEAN were taken in our sample.

#### *Variables and Measurement*

Our model includes independent variables i.e. financial development further decomposed in to Stock market development (STCKMKTDEV) and Credit market development (CMKTDEV), Trade Openness (TRADEOPEN) and degree of financial openness (FINOPEN). Stock market development is a proxy for capital market development and measured by ratio of market capitalization

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<sup>8</sup> IFS stands for International Financial Statistics published by IMF every year.

to GDP. Credit Market Development or financial depth was measured by taking ratio of domestic credit to private sector to GDP. Trade openness was worked out by obtaining ratio of sum of exports and imports to GDP. Financial openness was worked out by taking absolute ratio of net foreign assets to GDP. As far as measurement of dependent variable GDP growth is concerned, it was measured by as a percentage change in gross domestic product (GDP).

### *Model Specification*

On the basis of cited relationship between growth, financial development and financial openness, our growth model is proposed. Financial development and economic growth are correlated with each other. Financial development positively influences the economic growth. Similarly financial development is also influenced by the growth. There is simultaneity in the specification of relationship between financial development and economic growth. Other variables to be included in the model are trade openness (TRADEOPEN), financial openness (FINOPEN), financial development (STKMKETDEV & CMKTDEV). It is assumed that the dependent and independent variables are linearly related to each other.

Let us look at equation (1) which shows the relationship of growth with variables i.e. trade openness, stock market development, credit market development, and financial openness. It has been observed that countries establish economic ties in the form of bilateral trade before financial openness. Therefore, trade openness was included in the model. Stock market development and credit market development represent financial development which may impact growth.

$$\text{GROWTH} = \pi + \alpha \text{TRADEOPEN} + \beta_1 \text{STKMKTDEV} + \beta_2 \text{CMKTDEV} + \beta_3 \text{FINOPEN} + \mu$$
 (1) It is established that economic growth is also influenced by other factors in addition to the above said independent variables. The effect of other independent variables is captured in error term  $\mu$ . The above equation may have an intercept  $\pi$  which shows that the economic growth assume a value  $\pi$  when the slopes of independent variables and error term are zero.

Economic growth may depend on its lagged values as well as on the lagged values of dependent variables. Therefore our equation takes the following ARDL form.

$$\text{GROWTH} = \pi + \alpha \text{TRADEOPEN} + \beta_1 \text{STKMKTDEV} + \beta_2 \text{CMKTDEV} + \beta_3 \text{FINOPEN} + \eta \text{GROWTH\_L1} + \eta_1 \text{STKMKTDEV\_L1} + \eta_2 \text{FINOPEN\_L1} + \alpha_1 \text{TRADEOPEN\_L1} + \mu \quad (2)$$

Where L1 represents the lagged values of the growth, and other dependent variables, financial development, trade openness, and financial openness. One Lag was included on the basis of Akaike Information Criteria (AIC). Equation (1) and (2) enjoy support from J. Scott Davis (2014), Imbs (2004) where trade integration and financial integration were incorporated in a model. Lane, Milesi and Feretti (2007) used financial openness in the context of financial integration. Model specification has ample support from literature.

### *The rationale for selection of methodology*

The methodology was selected keeping in view the attributes and nature of the data as well as the objective of research. We have macro level data of different countries. These countries differ in level of financial development, trade openness, and financial openness. Our variables like financial development, degree of financial openness and trade openness are not fixed rather time varying. Therefore our panel is a dynamic heterogeneous panel.

Transformation of data to eliminate the country specific effects is not a satisfactory solution to the problem. This technique suffers from two short-comings. The first one is the elimination of those variables which do not change with time. Thus, it would render us unable to measure the time invariant effects which may lessen the explanatory power of the model<sup>9</sup>. The second issue is when variation across different cross-sections is not taken into account; our estimator no longer remains an efficient estimator. The first issue is more problematic when the primary objective of the research is to ascertain those parameters which do not depend on time.

Historically, we know that when countries integrate, their level of financial development, growth rates, financial openness would not be same across the board. The differences in parameters in the long run as well as in the short run are of great importance to us since it would enable us to appreciate the impact of our variables like financial development and financial openness in respect of each country in the long run as well as in the short run.

Given the objective of study we had to choose from three alternatives, fixed effect estimators, random effect estimators and mean group estimators. However we preferred Pool Mean Group Estimator to the other methods. In choosing Mean Group Estimation, we have relied on Pesaran et al. (1999) and Vermeulen and Haan (2014). Mean group estimator helps us measure cross-section wise long-run and short-run coefficients. That is why it is preferred to other estimators.

## **Results and Discussion**

Table 1 gives us long run coefficients of trade openness, stock market development, credit market development and financial openness for six ASEAN countries. The results speak for the significant role of variables like trade openness, stock market development and credit market development. In the long run trade openness and stock market development and credit market development were found significant to enhance growth. Stock market development had a higher

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<sup>9</sup>The variables which keep on varying with time must be taken in to consideration.

coefficient than other parameters. However financial openness took negative sign which implies that financial openness may have a negative impact on growth in the long run. These results hold for all six countries in our sample in the long run.

Table 1  
*Estimated Long-run Coefficient for ASEAN Countries*

ARDL(1,1,1,1,1)		
Regressors	Coefficients	Is Significant at 5% Sig. level
TRADEOPEN	0.0105 (2.83)*	Yes
CMKTDEV	0.0218 (8.95)*	Yes
STCKMKTDEV	0.03336 (9.84)*	Yes
FINOPEN	-0.0126 (-2.73)*	Yes

\*Values in parenthesis show Z-statistics & shows significance of coefficient at 5%.

Table 2 gives us short run coefficients of trade openness, credit market development, stock market development and financial openness. The results speak for the significant role of variables like trade openness and stock market development. In the short run trade openness and stock market development were found significant for growth. Stock market development had a smaller coefficient than that of trade openness. However credit market development and financial openness took negative sign but not found significant. These results hold for all six countries in our sample in the short run.

Table 2  
*Estimated Short run Coefficients for ASEAN Countries*

Short-run Coefficients		
Regressors	Coefficients	Is Significant at 5% Sig. level
$\Delta$ TRADEOPEN	0.1304 (3.2)*	Yes
$\Delta$ CMKTDEV	-0.04399 (-1)	No
$\Delta$ STKMKTDEV	0.0003 (2.07)*	Yes
$\Delta$ FINOPEN	-0.0149 (-0.82)	No
Constant	1.1491 (4.6)*	Yes
ECT	-0.7363 (-15.62)	Yes

Values in parenthesis show Z-statistics. \* shows significance of coefficient at 5%.

In the short run trade openness and stock market development were found significant for growth. Trade openness had a large coefficient as compared to other variables. Coefficient of stock market development was small but significant. However financial openness and credit market development were not found significant in the short run.

Table 3 provides country wise results of pool mean group estimation in the form of short run coefficients of regressors. In the short run, Indonesia experienced positive role of stock market development, credit market development, trade openness and financial openness for growth. Financial openness (FINOPEN) had a large coefficient as compared to other variables which show that financial openness had a comparatively large impact on growth in the short run.

Table 3  
*Estimated Short run Coefficients for ASEAN Countries*

ARDL(1,1,1,1,1)						
<i>Regressors</i>						
<i>COUNTRY</i>	<i>TRADEOPEN</i>	<i>CMKTDE</i> <i>V</i>	<i>STKMKTDEV</i>	<i>FINOPEN</i>	<i>CONST.</i>	<i>ECT</i>
Indonesia	0.06(2.7)*	0.03(2.35)*	0.10(4.4)*	0.2(2.2)*	-0.1(-0.3)	-2(-1.1)
Malaysia	0.02(2.27)*	0.01(2.07)*	0.01(2.4)*	0.21(0.6)	0.5(0.3)	-1.2(-4.5)
Philippines	0.02(0.97)	-0.01(-0.11)	-0.001(-0.1)	0.03(0.4)	-1.03(-1.6)	-0.3(-2.6)
Singapore	0.18(2.55)*	0.02(2.6)*	-0.01(-1.8)	0.01(1.65)	-0.6(-1.7)	-0.2(-2.03)
Thailand	0.34(1.8)	-0.13(-0.8)	-0.1(-1.5)	0.53(2.2)*	3.6(1.92)	-1.1(-4.9)
Vietnam	0.21(0.8)	0.004(0.1)	0.01(0.66)		-2.8(-2.1)*	-0.42(-2.2)

Values in parenthesis show Z-statistics. \* shows significance of coefficient at 5%.

In case of Vietnam, no variable was found significant for growth. Capital market development and financial openness did not provide any support to GDP growth. Trade openness was also found insignificant for having an impact on growth.

In case of Malaysia, Trade openness and financial development (credit market development and stock market development) were found significant for growth in the short run. However financial openness did not play any role in growth for Malaysia. Philippine did not observe any role of financial development, trade openness and financial openness in the short run. Singapore is a developed nation and enjoys good institutional strength and financial development. For Singapore credit market development and trade openness were found significant for growth in the short run. Moreover its stock market development and financial openness did not lend support to growth in the short run. For

Thailand, financial openness was found significant for growth in the long run. However, trade openness and financial development (credit market development and stock market development) were found insignificant for growth in the short run.

### Conclusion

Our results show that when we estimate the growth model for panel data, trade openness and stock market development were found significant for growth for all countries except Vietnam in the short run and the long run.<sup>10</sup> However credit market development and financial openness were found significant but assumed as a negative sign. Therefore, we may infer that in the long run credit market development and financial openness played a negative role for growth. In the short run credit market development and financial openness were not found significant. It implies that by focusing on stock market development and trade openness growth may be enhanced in the short run as well as in the long run.

Cross section wise results show that Indonesia may enhance its growth through trade channel, financial development and financial openness. Vietnam and Philippine found no role of financial development, trade channel and financial openness. Malaysia could enhance growth through trade channel and financial development. Singapore could augment short term growth through trade channel and credit market development. Thailand may witness positive role of financial openness in fostering short term growth. Summing up it may be inferred that for countries having low level of financial development, there is a great potential of fostering growth through trade channel and financial development<sup>11</sup>.

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<sup>10</sup> This means capital market development has a greater role to play in growth of ASEAN nations.

<sup>11</sup> The role of stock market development is greater than that of financial depth in fostering growth.

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# AN EMPIRICAL STUDY OF RELATIONSHIP BETWEEN CUSTOMER SATISFACTION, EMPLOYEE PRODUCTIVITY AND PROFITABILITY-EVIDENCE FROM BANKING SERVICES SECTOR OF PAKISTAN

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## Abstract

*Today, many businesses considered the laying-off employees as a mean to improve their productivity and ultimately to achieve higher profits. However, in services oriented business it may not work well as customer satisfaction can be at stake. Fewer no. of employees have to handle more customers thereby customer satisfaction may be hampered. The aim of this paper is to investigate the same that whether there exists a trade off between productivity and customer satisfaction or not and how the simultaneous change in both affect the profits of the business. To conduct this research, data is taken from the banking industry of Pakistan. The regression analysis is used to find out the results. The findings suggested that there exists a trade off between customer satisfaction and productivity as both of these have a significant negative association. Further, it is explored that both of these a positively associated with the profits however their combine affects on profitability found to be negative.*

**Keywords:** Productivity, Profitability, Customer Satisfaction, Banking Services.

**JEL Classification:** Z000

## Introduction

The world is growing fast as well as businesses are growing and it is essential for the companies to create substantial difference from each other to increase their profitability and also full fill customer satisfaction. Firms always believe to have higher rate of productivity as well as customer satisfaction but compatibility between these two variables is uncertain. Customer satisfaction and

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productivity may sometimes show the inverse relationship between them because if a company is focusing on having less employees which can improve the productivity, but the quality of the product or services could be at the stake. On the other hand, if companies want to have higher rate of employee at their operation, will decrease the productivity of the company. But may increase the customer satisfaction, so it could be revealed that there is always a trade off in the level of productivity and customer satisfaction.

Profitability of any organization is depending upon the customer satisfaction and productivity. It is obvious that happy customers will retain for a longer period of time and will always have positive mouth of word and will buy product several time. From the investigator point of view that is definitely a positive relationship among profitability of organization and customer satisfaction level.

According to Hoyer and MacInnis (2001) gratified customers makes the standing foundation of any prosperous business, as a happy and satisfied customer will may make a reappearance and may will repeatedly buy a product, that will show a positive attitude of customers towards the product and will speak positively and also recommend to others. Contemporary to this if a firm increases its productivity then it may will decreases its cost of production and input cost making profits for the company in short run but this will may decreases the customer satisfaction in long run.

This research paper has focus upon the inspect and explore the core and vital relationship among the customer satisfaction, productivity and profitability of the organizations by using the data of the companies which are using different strategies to augment their profits, so this exploration tends to examine the effects of productivity (whether increases or decreases), on company's profitability and its customer satisfaction. Hence it will be very helpful for the companies to understand this trade off between the productivity and customer satisfaction, which if not handled correctly can hamper the profits of the companies. The study is also significant in a way that very few researcher has explore this association between the variables earlier and in Pakistan no efforts has yet been put forth to examine this relationship between customer satisfaction, productivity and profitability. Hence the research work will add lots of contribution to the existing literature.

Next part of the research include link between all three variables, it include the relationship between profitability and customer satisfaction then relationship between profitability and productivity and also link between productivity and satisfaction of the customers. Further then objectives, literature review and methodology will be discussed.

## **Employee Productivity and Customer Satisfaction**

### *Customer satisfaction*

Today in the business world clients are central focus of every business and they always prefer what customer wants and how customer wants it. the procedures, plan faction and development of strategies are developed according to the need of potential customers. Today in the modern world and in era of marketing the focus of business is towards the need of customer and their satisfaction. Business has acknowledged the significance of the customer. Zairi (2002) said “Customers are the purpose of what we do and rather than depending on us, we are very much depend on them. The customer is not a source of problem; we should not perhaps make a wish that customers should go away, because our future and security will be put in jeopardy”. Customer satisfaction is a sense of achievement and also the strategies focused by money businesses to increase their profit. The word customer satisfaction can be classified as the fulfillment of the need of the customer through the use of the product of that company. Kolter (2000) demarcated the term as “an individual emotions of gratification or displeasure is resultant from comparing a product’s supposed performance in relation to his or her understanding”

It is quite obvious that if customers expectation will meet with the performance of products and services of any company, they will ultimately satisfied and will show positive response for the company, on the other hand if the expected outcome is not fulfilled, the customer will not wished to use that products or services thereafter, which will harm in losing the potential customer. Thus, a gratified consumer can make proceeds for the business although and disappointed one can hinder company’s sales. Thereafter, it can be concluded that taking in accordance the other factor, satisfaction of the consumer is connected with effectiveness and profitability of the company it is quite vital have to notify that product and services are important factor but there are certain other factors that distort level of customer satisfaction. According to Hackanson (1995) the factor that can affect the customer satisfaction generally are responsive employees, educated employees, cooperative employees, well-mannered employees bills are formed accurately. Billing relevance and on time, competitive pricing, quality of the product and services, excellence of goods and swift services from this we can conclude that employees can play vital role in the satisfaction of the customer.

### *Productivity*

The conversion of raw material input into valuable goods output can be defined as the term productivity. A firm productivity supposed to be greater if a firm consumes minimum input to generate the maximum output possible or a firm uses similarly level of inputs to generate the maximum level of output.

Here we can conclude that productivity is a ratio of specific type of input to output. We can take specified in put as our firms employees decreasing the number of work force might diminishes the cost, as increasing the profit for the organization such that reduce in cost will grow the productivity of organization. The result of the rise in productivity will directly affect the satisfaction level of the consumer as discussed earlier there are plenty of factors that distrust the satisfaction level of the consumer and many of these reason are directly related to the employees of the organization such that responsive employ, expert employees, supportive employees, well mannered employees etc.

On the other hand decreasing the quantity of employees to increase productivity means every employee of the organization has additional responsibilities under a lot of pressure, burden and responsibilities. So the managing of work can be difficult for the employees which ultimately effect the behavior of the employee, he or she can be less friendly, less helpful to his/her customer. The result of additional responsibility may affect his work regarding the work environment, replies to the e-mail, he may not handle complaints and concerned of his customer, ultimately reducing the satisfaction level of the customer which leads toward unsatisfied customer. Result of this could be upon the sales and profit such that they might reduce.

It can be concluded that there is positive relationship among satisfaction of the customer and productivity of organization .investigation and studies have shown great variance among the bounds of customer satisfaction and productivity of organization.

Reichheld and Sasser (1990) claim that decreasing faults, primes to increasing level of loyalty, which had positive effect on productivity decreasing the cost of transactions, positive word of mouth. In comparison to economic point of view this relationship is studied as to be negative.

### *Research Objectives*

The objectives of this study are:

- To examine the relationship between customer satisfaction and productivity
- To investigate the association between customer satisfaction and profitability
- To analyze the relationship between productivity and profitability
- To explore the simultaneous affect of productivity and customer satisfaction on profitability

### *Research Questions*

1. What relationship exists between productivity and customer satisfaction?
2. What is the association between profitability and productivity?
3. How customer satisfaction and profitability relates?
4. What is the instantaneous affect of employee productivity and customer satisfaction on profitability?

Hypothesis:

*H0*: There is no relationship between employee productivity and customer satisfaction.

*Ha*: There is negative relationship between employee productivity and customer satisfaction.

*H0*: There is no relationship between employee productivity and profitability.

*Ha*: There is positive relationship between employee productivity and profitability.

*H0*: There is no relationship between customer satisfaction and profitability.

*Ha*: There is positive relationship between customer satisfaction and profitability.

*H0*: Productivity, will not mediate the association between Customer Satisfaction and Profitability

*Ha*: Productivity, will mediate the association between Customer Satisfaction and Profitability.

### **Literature Review**

There are numerous studies concluded earlier to show the inter-dependence of profitability on the satisfaction level of customer and also interdependence of productivity and profitability. There have been little amount of research conducted and exist which shows the relationship between these three variables productivity, profitability and level of customer satisfaction instantaneously. The prior studies related to relationship of level of customer satisfaction and profitability and productivity with profitability are very rare in numbers.

Roger (1996) focused on connections and relations among the level of customer satisfaction, loyalty of the customers and profitability related to them. Data of approx. 12000 retail-bank customers is collected by roger to study relationship between these variables. To analyze and study the influence of level of customer satisfaction, profitability and loyalty OLS regression analysis is used. The outcome recommended that there is a constructive relation among level of customer satisfaction and loyalty of customer and further more positive relation among profitability and level of customer satisfaction.

Timothy et al. (1996) data of institutional securities industry of North America is used to study and analyze the relation among satisfaction of customers and profitability of the firm. Statistical tool of correlation is used to analyze variables and concluded that negative correlation occurs among profitability and level of customers satisfaction for the customers who are un-profitable for firm and positive correlation occurs among level of customer's satisfaction and customers who are profitable for the organization.

Bernhardt et al. (2000) also concluded relation among level of customer satisfaction and organizations profitability. He exhibited it and analyzed that there is no substantial correlation among the variables but instead of that these variables are tested upon time-series basis then there would be positive relation of correlation among customer satisfaction and profitability. His study further concluded that latitudinal analysis is not affective to demonstrate the true and vital relations among these variables.

Gyu-Chang et al. (2006) Korean firms are used to study the effect of less level of employee/workers on productivity of the firm and its financial performances. In the years 1997 to 2000 listed Korean companies are used and data of 250 companies is collected and analyzed. To study the relation among the number of employees, productivity and profitability of the organization multiple regression method is used. On the basis of results, it is concluded there exist a positive relationship between the no. of employee and profitability and there is no existence of relationship among productivity and numbers of employees.

(Eugene Anderson, 1997) Study indicates that relation of customer satisfaction and changing productivity is different for goods and services. Research indicated that relation is positive between satisfaction of customers and productivity for goods while negative for the services.

(Zhang, 2009) Study focused on non-financial measures than can affect performance of organization. 2 years data of 78 enterprises was concluded and stated that there is positive relationship between non-financial measure customer satisfaction and long term financial position of organization. There would be increased profitability and sales if there would be higher satisfaction of customers.

(Mathew Yeung, 2002) in today's market customer satisfaction is beneficial for the organization in two ways such that customer satisfaction creates strong loyal customers and positive word of mouth created by customer's and on the other hand increases the performance of the organization while lift in profits. It can be predicted that there is positive linear relationship between customer satisfaction and profitability. Data is used from (ASCI) American customer satisfaction index.

(Wiele, 2001) It is always difficult to find a relationship between customer satisfaction and profits of any organization. The result of empirical data used shows that there exists a positive relation among these two variables but existence of this relationship is not very strong. There always exist some factors those effects the nature and existence of this relation such that sales, margin etc.

(Mafini, 2013) A research conducted on government department in South Africa concluded that there exist a positive relationship between different variable of customer satisfaction and organizational performance. For this purpose methodology used was correlation and regression. Data was collected from 272 customers.

Study by (Christiana and Geng, (2009) Study was conducted for Hospitality Company and this financial health and founded the direct relation among the financial performance and customer satisfaction, among included indirect relation to the employee satisfaction. There exist a linear relation among all three variables. Data was collected from 3 and 4 star hotel both from customers and employees, further structural equation modeling with 2-step approach was used to analyze data.

## Methodology

The principal endeavor of this research work is to investigate the association between productivity, customer satisfaction and profitability. For this purpose a sample of 23 commercial banks listed at Karachi stock exchange, will be taken. The data related to productivity and profitability will be taken from the financial statements of these banks while the data related to customer satisfaction will be collected through questionnaire.

### *Sample and data set*

The scheduled commercial banks of Pakistan, listed at Karachi stock exchange are chosen as sample. Data set will be comprised of Secondary as well as primary data that will be drawn from the financial statements of these banking companies and through questionnaire. Hence the study will be cross-sectional where the data will be gathered one time from the chosen sample.

### *Variables*

To measure the productivity, usually a ratio of output to a specific input is taken. Here it will be measured through the ratio of total sales generated in a year to the total no. of labor used to produce that output. The return on asset (ROI) will serve as proxy to measure the firm's profitability. The main reason to choose ROI is that, the net income can change due to change in the assets base (or investments) therefore taking the absolute net profit or net profit margin can't capture the true picture. That is why ROI will be used by the researcher. It is calculated as a ratio of net profit available to common shareholders to total assets.

Finally customer satisfaction will be measured through a questionnaire that will be filled by the customers to determine their level of satisfaction. For, this purpose researcher will adopt the methodology used by Zhang and Pan (2009). They measured the customer satisfaction through 10 detailed measures, including: (1) Product quality (2) Service quality, and any award if company has got in recent three years in this regard (3) the warranty and guarantee system in the company, and rules regulation related to that (4) techniques used to compare the standards a company with other national and international industries (5) branding strategies, and product reputations (6) customers feedback regarding the services and the record of complaints and compliments of customers (7) marketing campaign strategies and sales record (8) services offered and delivered to the customers (9) pricing strategies, if the prices are reasonable according to customers (10) after sale services quality and performance of product. The researcher in this paper adopted the same way to measure the customer satisfaction and to analyze the association between Customer Satisfaction, Productivity and Profitability.

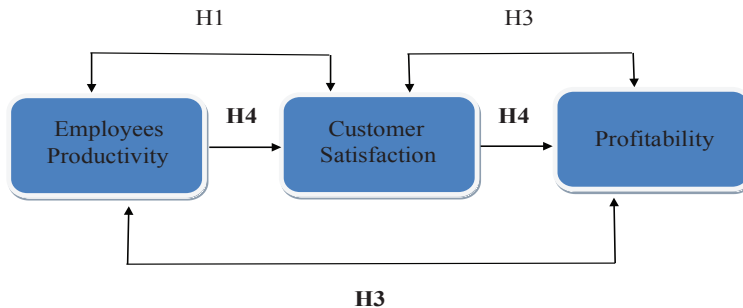


Figure 1  
**The model**

To examine the association among customer satisfaction, productivity and profitability, correlation and regression analysis will be used. Following are the models that will be tested through correlation and regression.

1st equation will investigate the association between productivity and customer satisfaction:

$$C.S_t = \beta_0 + \beta_1 E.PROD_t + \mu_t \quad (1)$$

$C.S_t = \beta_0 + \beta_1 E.PROD_t + \mu_t$  will be then regressed to study the simultaneous affect of customer satisfaction and productivity on profitability.

$$ROA_t = \beta_0 + \beta_1 E.PROD_t + \beta_2 C.S_t + \beta_3 C.S_t * E.PROD_t + \mu_t \quad (2)$$

$$ROA_t = \beta_0 + \beta_1 E.PROD_t + \beta_2 C.S_t + \beta_3 C.S_t * E.PROD_t + \mu_t$$

ROA = Return on Asset

C.S = Customer Satisfaction

$\mu$  = error term

## Analysis and Results

### Testing the Hypothesis

$H_0$ : There is no relationship between employee productivity and customer satisfaction.

$H_a$ : There is negative relationship between employee productivity and customer satisfaction.

The regression analysis showed the following results, indicating that there exists a trade off between customer satisfaction and productivity. Hence, decreasing the productivity (in terms of more employees to handle the few customers) means the customer satisfaction will improve and vice versa.

Table 1  
estimation of equation: 1

Dependent Variable	Coefficient
$\beta_1 E.PROD_t$	-6.7**
<b>F-statistics</b>	6.799**
<b>R<sup>2</sup></b>	0.23

The 2nd, 3rd, and 4th hypotheses are tested using the equation 2. The finding suggested that there exist a significant positive relationship between customer satisfaction and profitability that is compatible with previous studies results. There is also a significant positive association between productivity and profitability which means high productivity leads to higher profitability and vice versa. However, the simultaneous changes in customer satisfaction and productivity, leads to a significant negative association with profitability. It means to achieve profitability through productivity in services oriented industries can leads to lower profitability as it effects the customer satisfaction and reduces the sales and there by profits of a firm.

Table 2  
estimation of equation: 2

Dependent Variable	Coefficient
$\beta_1 E.PROD_t$	0.16**
$B_2 C.S_t$	0.12*
$\beta_1 E.PROD_t * C.S_t$	-1.08
<b>F-statistics</b>	6.799**
<b>R<sup>2</sup></b>	0.18

### Conclusion

The findings of the study confirm that there exists a trade off between customer satisfaction and productivity. It is also found that both of these measures are positively associated with the profitability. However, there simultaneous affect relate negatively with the profitability. These results help us understanding that for the services business, employees layoff to increase the productivity can

badly affect the customer satisfaction that will ultimately leads to lower profitability. Therefore it is not a wise approach to go for downsizing to improve the productivity and profitability of a firm.

Although previous studies have identified the positive association between customer satisfaction and financial performance, such as Miguel et al. (2004), Hassan, Elnaby and Wier, (2003), Yeung and Ennew (2000), Ittner and Larcker (1998), Anderson, Fornell and Lehmann's (1994), Nelson, Rust, Zahorik, Rose, Batalden, and Siemanski (1992) but this study makes a unique contribution to the literature as it also analyzed the trade off between customer satisfaction and productivity.

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