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Editorial Note

It is with immense pleasure and pride that I present to you the twenty-fourth edition of the *Journal of Business Strategies*. After a thorough evaluation and analysis, my team and I unveil this new issue, which we hope our readers will benefit from. With a total of eleven research papers, researched and penned by national and international authors, making this issue an international publication.

This journal portrays a wide array of themes surrounding Finance, Management, Marketing and encompasses the economic state of Pakistan. It is interesting to know that the research scope in Pakistan is flourishing vigorously. As the economic condition of the country is stabilizing, the business environment is prospering as well, transferring the responsibility of investigation of the emerging business opportunities on the shoulders of the academic researchers. Concurrently, the researchers today are concentrating and already delving on the emerging phenomena to address current as well as future issues. In this volume we welcome new contributors as well as former authors to publish their articles for the world to read and deliberate upon.

The *Journal of Business Strategies* is the collective thinking of a group of innovative individuals with whom I was privileged to interact and have worked meticulously during the publication process. The editorial team is striving hard to make the journal a premier academic journal in the national and international community. In this essence the journal has adopted the Open Journal Systems software, to streamline the publication process and simplify it for our authors and readers. The *Journal of Business Strategies* is a diverse and dynamic academic journal and thanks to my team, we have made sure that this edition remains consistent and extraordinary to the extent of our abilities. *JBS* aims to create and strengthen relationships between authors of *JBS* and the academic world.

Lastly, I would like to thank all authors, peer reviewers, members of the editorial board and my publication team to help get this journal published.

Sincerely,

Sadia Khurram
Editor
Journal of Business Strategies

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EXAMINING THE PSYCHOMETRIC PROPERTIES AND VALIDATING THE MULTI-DIMENSION ETHICAL LEADERSHIP INSTRUMENT IN BANKING SECTOR OF PAKISTAN

Dr. Munawar Hussain Pahi, Dr. Karim Bux Shah, and Dr. Tania Mushtaque

ABSTRACT

This study examines the psychometric properties and validation of the multi-dimensional instrument of ethical leadership encompassing orientation, fairness, power-sharing, ethical guidance, role clarification and integrity dimensions in the banking sector of Pakistan. For the data collection purpose, five hundred questionnaires were distributed to the employees of banks in the province of Sindh, Pakistan based on multi-stage cluster sampling. A total of one hundred ninety one usable questionnaires were received. The Partial Least Squares (PLS) path modeling was adopted to analyze the data using Smart-PLS 2.0. The findings revealed that all the ethical leadership dimensions considered in the study were highly relevant. The results of the study also demonstrate an adequate level of internal consistency, reliability, convergent validity and discriminant validity for each of the dimensions. This study has confirmed that the ethical leadership instrument could be useful in measuring ethical leadership construct in the service sector. The study findings established that ethical leadership dimensions demonstrate adequate psychometric properties in the banking sector of Sindh, Pakistan.

***Keywords**: Ethical leadership, Psychometric Properties, Banking, Pakistan.*

INTRODUCTION

The leader of the organization is an important position and who plays an important role in formulating the behavior of the employees (Dewettinck & van Ameijde, 2011). Unethical behavior of the organizational leaders has directed the attention of practitioners and academicians towards the research on ethical leadership (Walumbwa,

Hartnell, & Misati, 2017). Ethical leadership and ethical behavior play a central role in reducing frauds and scandals in the organization (Waldman, Siegel & Javidan, 2006). Repeated scandals of frauds involving corporate and public sector leaders over the past decade have increased the interest in studying ethical leadership subject (Johnson, 2017). Previous research studies have highlighted that ethical leadership is warranted due to the increase in employee's ability to deal with different situations and to bring the solutions based on ethical norms (Sabiu et al., 2018; Zhang et al., 2013). The relationship between leadership and ethics is natural (Hartnell et al., 2016), as the ethical leader performs actions based on morals and ethics (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009).

Previous literature has focused on ethical leadership in diverse areas including medicine and finance (Ciulla et al., 2018). In the past decade, interest in studying the antecedents, outcomes, and processes of ethical leadership has attracted considerable attention of the researchers. However, there have also been controversies in the literature of ethical leadership with regard to its effective measurement (Kalshoven, Den Hartog, & De Hoogh, 2011). Researchers have suggested different ways to measure employee perception with regard to effective leadership styles (Northouse, 2015; Brown & Treviño, 2006; House, 1971). In addition, studies specifically focusing on measuring ethical leadership through questionnaires, covering various dimensions of ethical leadership provided confusing results in terms of the number of items for effective measurement of leadership styles (Langlois et al., 2014; Yukl et. al., 2013; Kalshoven et al., 2011). Thus, in line with the above elaborations, the present study aims at attempting the existing body of knowledge on the ethical leadership literature by examining the psychometric properties of ethical leadership constructs. In order to achieve the research objective, the data has been employed from the banking sector of Pakistan. In this connection, the present study attempts to address the following key research question:

- What are the psychometric properties of the ethical leadership questionnaire and its structure factors in the Pakistani banking sector context?

LITERATURE REVIEW

Ethical Leadership

Research on ethics has received much attention from researchers and scholars (Kalshoven, 2010). Likewise, scandals, frauds, and breakdown

of trust within the organization have remained an area of concern for the business leaders and organizations (Waldman et al., 2006; Mendonca, 2001). Many authors, such as Tanner, Brügger, van Schie, and Lebherz (2015), and Piccolo, Greenbaum, Hartog, and Folger (2010), state that ethical leadership is instrumental in reducing the misconduct and absenteeism, and hence, enhancing the performance of employees and organizations as a whole. Ethical leadership becomes more significant and essential pillar to the effective organizational operation, especially in countries where relatively higher cases of corruption are recorded (Conrad, 2013). Several authors have discussed the different discourses on ethical leadership, as a leader's integrity; honesty, and trustworthiness. Van Gils et al. (2015), have explained that ethical leadership is considered to be beneficial to others. These authors have further added that a good behavior of leaders helps in avoiding conflicts at the workplace. The success of ethical leadership is based on ethical standards; fair treatment with followers, and, in the true sense, endorses ethical behavior by practicing and dealing ethics and holding everyone liable for it (Yukl et al., 2013).

Leaders play a central role in uplifting the morale of the employees and become a real guide for them (Brown, Treviño, & Harrison, 2005). Ethical leadership is also positively related to affective trust in the leader and negatively related to abusive supervision (Brown et al., 2005). Research on organizational leadership has long suggested that leaders' honesty, integrity, and trustworthiness are among the most important predictors of leadership effectiveness (Hoffman, Woehr, Maldagen-Youngjohn, & Lyons, 2011). An ethical leader must be honest, altruistic, fair decision maker. He is not only supposed to act in the interest of employees but also for the well-being of society as a whole. In addition, those moral principles values, actions, and ethics are seen in the ethical leaders (Newman et al., 2014). Ethical leaders influence their followers with their style of leadership based on ethical and moral standards, which helps eradicate the unethical behavior within the followers Mayer et al. (2009), proposed a trickle-down model in this aspect and found that the ethical leadership flows down from executives to employees via the supervisory level. Frisch and Huppenbauer (2014), state that the ethical leadership concept goes beyond conventional leadership concepts, as it adds the element of the moral manager who promotes the employees' ethical conduct.

The extant literature on ethical leadership offers several measures of ethical leadership. Some of these include Perceived Leader Integrity Scale

(PLIS) (Craig & Gustafson 1998), Ethical Leadership Scale (Brown et al. 2005), Ethical Leadership at Work Questionnaire (De Hoogh & Den Hartog, 2008), and Servant Leadership Questionnaire (Barbuto & Wheeler, 2006).

Perceived Leader Integrity Scale (PLIS) was developed by Craig and Gustafson (1998), on the ethical traits of leadership. The PLS questionnaire aimed at identifying the observable traits of a leader and consist of thirty one items that describe several types of unethical behaviours. The respondents were asked to record their observations in four choices (i.e. not at all, somewhat, very much, exactly). Parry and Proctor-Thompson (2002), validated the instrument. However, the instrument had certain limitations such as the lack of positively worded items. Since the absence of unethical behaviour does not necessarily imply the presence of ethical qualities in the leader, the excess of negatively worded items was one of the noticeable drawbacks of this instrument.

Secondly, in a survey called Ethical Leadership Scale seeking to elicit the core characteristics of ethical leadership, Brown and Treviño (2006), found that honesty, fairness, communication and role modelling of ethical behaviours, values, and accountability were the key qualities of ethical leaders. Based on these findings, Brown et al. (2005), devised a questionnaire to measure these characteristics. The questionnaire was validated in later studies confirming that leader's overall score on the questionnaire was the predictor of job satisfaction among employees and perceived effectiveness of leaders.

Another measure of ethical leadership used in literature was developed by De Hoogh and Den Hartog (2008). Using the interviews and questionnaire, the authors conducted a study on the ethical leadership in top management, the authors concluded that the aspects of fairness and morality were distinctive properties of ethical leadership which differ significantly from power sharing and autocratic behaviours among managers.

Furthermore, the authentic leadership questionnaire used in leadership literature was developed by Walumbwa et al. (2008). The questionnaire primarily measures the core traits of authentic leadership by the means of four scales including self-awareness, related transparency, internalized moral perspective, and balanced processing. While each of the scales aims at describing leadership behaviour, it strongly reflects that the internalized moral perspective carries a noteworthy relationship with ethical leadership.

Internalized moral perspective assumes that leader's behaviour is an outcome of his moral standards, beliefs, and values. The other theme in the questionnaire which seems somewhat relevant to ethical leadership is relational transparency, which suggests that leader exhibits her norms, beliefs, and values accurately. In other words, the leader means what he says. Moreover, the other two aspects of authentic leadership questionnaire, however, have no substantial relevance to ethical leadership.

Finally, an instrument called the Servant Leadership Questionnaire also serves as a measure of ethical leadership. The questionnaire was developed by Barbuto and Wheeler (2006), and contains five subscales namely: altruism; organizational stewardship; persuasive mapping; wisdom; and emotional intelligence. Each of the scales includes four of five items. In this questionnaire, the subscales relating to altruism has an important bearing in the context of ethical leadership. Leader's personal traits like putting organizational/employee interests ahead of his personal interests; willingness to sacrifice his personal benefits for meeting employees' needs etc. are some essential characteristics defining ethical leadership.

In short, there appears a substantial confusion in the literature on the scope, domain, and measurement of ethical leadership. However, some of the topics which seem most pertinent to ethical leadership include honesty; integrity, enforcing ethical standards; fairness; kindness and concern for others.

RESEARCH METHODOLOGY

Adapted from the work of Kalshoven (2010); and De Hoogh and Den Hartog (2008), six dimensions of ethical leadership which include orientation; fairness; power-sharing; ethical guidance; role clarification; and integrity are examined in this study.

Sample and Technique

This study administered the scale validation technique using the sample from the private banks of Pakistan. For this reason, the respondents taken were the private bank employees. The present study followed the multi-stage cluster sampling on the guidelines of Kothari (2004), and Allen et al. (2002). A cluster (a group of population elements), constitutes the sampling unit, instead of a single element of the population. The sampling in this technique is mainly geographically driven and the population is divided into subgroups (clusters) like families. A simple random sample is taken from each cluster.

Using these criteria in this study, first the population is considered at country (Pakistan) level and then it is divided into provinces; from four provinces, Sindh province was selected; furthermore, the population of Sindh province was divided into four major regional fractions including Karachi, Hyderabad, Larkana and Sukkur; thus data was collected from banks located in all these four segments of Sindh province (Kothari, 2004; Allen et al., 2002).

The total population for this study according to the Pakistan Banking Association was 70,594, whereas, referring to the Krejcie and Morgan (1970), the total number of respondents for a population of 50,000 should be 381 and 382 for a population of 75,000. Hence a total number of 382 respondents were minimum required. There is a severe paucity of research on the banking sector and on its services in the Pakistan region (Umrani et al., 2018), especially in the Sindh province. Therefore, finding a specific response rate is very hard.

For responsive and sufficient data collection, researchers extended the original sample size as suggested by Bartlett et al. (2001), and Joseph Hair (2018). Hence 500 questionnaires were circulated amongst the banking employees in Sindh province out of which 323 questionnaires were returned. However, after preliminary data screening (discarding incomplete questionnaires, removing outliers) a total of 191 usable questionnaires were used for the data analysis.

RESULTS

Table 1. Respondent's Profile

Respondent's profile frequency	
Gender	
Male	101
Female	90
Education	
Master	127
Bachelor	11
Diploma	48
Others	5
Age	
20-30	110
31-40	58
41-50	19
51-60	4

Table 1 shows the ratio of 101 males and 90 female employees in the bank which indicates the presence of male employees almost equal to that of female employees. The table indicates that 127 employees have master's degree during employment in the bank, while the number of employees holding bachelors, diplomas, and others was 11, 48, and 5 respectively. Therefore, the sample is dominated by the employees having a masters degree. Considering the age distribution, the category under 20-30 includes 110 employees, 30-40 category includes 58, 41-50 category contains 19 respondents, while 51-60 category included only 4 employees. The age distribution suggests that more than half of the sample consists of young employees between 20 to 30 years of age.

ANALYSIS & RESULTS

In order to examine the dimensions of ethical leadership in the banking sector of Pakistan, Partial Least Squares (PLS) path modeling was adopted. The analysis was carried out using Smart-PLS 2.0 developed by Ringle et al. (2005). The Structural Equation Modelling (SEM) technique is gaining popularity in research for its user-friendly approach and other powerful mechanics. Besides its numerous other powerful functions, this approach is highly advised as a useful tool when the objective of the study is to test and validate the models (Hair et al., 2012; Henseler et al., 2009). The present study used Smart-PLS 2.0 for examining the psychometric properties of the ethical leadership questionnaire through validating measurement model. In this regard, the study has established and reported individual item reliability, internal consistency reliability, convergent validity, and discriminant validity; Table 2 and Table 3 depict the results of the measurement.

Table 2. Confirmatory Factor Analysis of Ethical Leadership

Code	Indicators	PO	FN	PS	EG	RC	IN
	People Orientation						
PO1	Is interested in how I feel and how I am doing	0.94					
PO2	Takes time for personal contact	0.72					
PO3	Pays attention to my personal needs.	0.79					
PO4	Takes time to talk about work-related emotions.	0.87					
PO5	Is genuinely concerned about my personal development.	0.69					
PO6	Sympathizes with me when I have problems.	0.67					
PO5	Cares about his/her followers.	0.76					

	Fairness						
FN1	Holds me accountable for problems over which I have no control.		0.82				
FN2	Holds me responsible for work that I have no control over.		0.83				
FN3	Holds me responsible for things that are not my fault.		0.72				
FN4	Pursues his/her own success at the expense of others.		0.75				
FN5	Is focused mainly on reaching his/her own goals.		0.63				
FN6	Manipulates subordinates		0.69				
	Power Sharing						
PS1	Allows subordinates to influence critical decisions.			0.92			
PS2	Does not allow others to participate in decision making			0.71			
PS3	Seeks advice from subordinates concerning organizational strategy			0.87			
PS4	Will reconsider decisions on the basis of recommendations			0.81			
PS5	Delegates challenging responsibilities to subordinates			0.86			
PS6	Permits me to play a key role in setting my own performance goals			0.75			
PS7	Concern for sustainability			0.73			
PS8	Would like to work in an environmentally friendly manner			0.82			
PS9	Shows concern for sustainability issues			0.93			
PS10	Stimulates recycling of items and materials in our department			0.65			
	Ethical Guidance						
EG1	Clearly explains integrity related codes of conduct				0.69		
EG2	Explains what is expected from employees in terms of behaving with integrity			0.68			
EG3	Clarifies integrity guidelines				0.72		
EG4	Ensures that employees follow codes of integrity				0.87		

EG5	Clarifies the likely consequences of possible unethical behavior by myself and my colleagues				0.67		
EG6	Stimulates the discussion of integrity issues among employees				0.81		
EG7	Compliments employees who behave according to the integrity guidelines			0.73			
	Role Clarification						
RC1	Indicates what the performance expectations of each group member are					0.82	
RC2	Explains what is expected of each group member					0.87	
RC3	Explains what is expected of me and my colleagues					0.69	
RC4	Clarifies priorities					0.65	
RC5	Clarifies who is responsible for what					0.83	
	Integrity						
IN1	Keeps his/her promises						0.68
IN2	Can be trusted to do the things he/she says						0.69
IN3	Can be relied on to honors his						0.92
IN4	Always keeps his/her words						0.65
	Average Variance Extracted (AVE)	0.921	0.720	0.740	0.707	0.821	0.813
	Composite Reliability (CR)	0.930	0.881	0.780	0.901	0.791	0.960

Individual Item Reliability

The individual item reliability, obtained using confirmatory factor analysis, is ascertained though factor loadings whereby an item loading has to be greater 0.50 or more (Hair et al., 2012). Table 2 presents the results of individual item reliability which range from 0.61 to 0.94. Hence, it is concluded that the present study demonstrates adequate inter-item reliability.

Internal Consistency Reliability

The internal consistency reliability denotes the degree to which every item in an individual scale measures the same concept (Bijttebier et al., 2000). Hair et al. (2011), stated that a construct meets the composite reliability criterion when it scores 0.7 or more. The composite reliability coefficients are shown in Table 2, which depict that all the constructs of the present study (ranged between 0.780 to 0.960) have met the criterion. Therefore, the results indicate that all constructs meet the minimum requirement of acceptability.

Convergent Validity

The concept of convergent validity denotes that items truly represent

the intended latent constructs and correlate with other measures of the same latent construct (Joseph Hair, 2018). This validity was ascertained on the basis of Average Variance Extracted (AVE) of the latent variables following the guidelines of Chin (1998); according to him, the suggested minimum AVE threshold is 0.5 or above for each of the latent construct. Table 2 outlines that the average variance extracted for the dimensions ranged between 0.720 to 0.921 respectively. It, therefore, suggests that the current study has successfully demonstrated the convergent validity.

Discriminant Validity

Lastly, the current study attempted to assess the discriminant validity of all the latent variables. The discriminant validity denotes the degree to which a given latent variable is different from other latent variables (Duarte & Raposo, 2010). The discriminant validity was assessed by drawing upon the guidelines suggested by Fornell and Larcker (1981). According to the authors, the square root of average variance extracted should be above the correlations among latent variables. The square-root of AVE (in the boldface values) and correlations among latent constructs are provided in Table 3.

Table 3. Discriminant Validity

Constructs	1	2	3	4	5	6
People orientation	**0.844**					
Fairness	0.253	**0.781**				
Power sharing	0.712	0.276	**0.821**			
Ethical guidance	0.623	0.761	0.602	**0.901**		
Role clarification	0.521	0.673	-0.73	0.359	**0.790**	
Integrity	0.631	0.501	.0261	0.198	0.419	**0.793**

The square root of the AVE value suggest that all the latent constructs have successfully demonstrated a satisfactory level of discriminant validity; as all the values of the square root of AVE were greater than the correlations. Therefore, the findings confirm that all the dimensions of ethical leadership construct have sufficiently met the requirement of discriminant validity (Henseler, Ringle, & Sinkovics, 2009).

CONCLUSION

This study aimed to examine the psychometric properties of ethical leadership in the banking sector of Pakistan. The main aim of this study was to contribute to the ethical leadership literature in establishing its psychometric properties. Five dimensions of ethical leadership were tested

which include orientation, fairness, power-sharing, ethical guidance, role clarification, and integrity. The study confirmed that the ethical leadership questionnaire demonstrated adequate psychometric properties. Furthermore, previous findings have also supported this multi-dimensional ethical leadership scale (Yukl et al., 2013; Langlois & Lapointe, 2010; Langlois & Lapointe, 2007). This study confirms that ethical leadership instrument/questionnaire has high reliability and discriminant validity. Hence, it encourages using ethical leadership measurement in future research. Previous studies on ethical leadership dimensions, were examined in the developed countries with specific samples and limited focus on the industries (Yang, et al., 2016), whereas this study examined the psychometric properties of ethical leadership in developing country (Pakistan). Finally, the result of this study confirmed that all the constructs of ethical leadership meet the criteria in the banking sector of Pakistan.

LIMITATIONS OF STUDY

The authors of this study also came across some limitations. Due to time and cost constraints, the sample for this study was limited to only one province of Pakistan. Moreover, it is probable that some of the respondents have hesitated to provide the requested information. Care should also be taken to generalize the findings of this study as it is based on the banking sector only. Hence, it is recommended that the data collection may be made possibly at the country level; across the service sector industry and in other industries too. Finally, the present study applies cross-sectional data. It would be useful to apply longitudinal data to study the same sector or different sectors.

IMPLICATIONS OF STUDY

The present study encourages using the ethical leadership measurement in organization. The banking sector has become increasingly cognizant of the importance of ethical leadership. Hence, bank managers need to consider and play the due role in the cultivating and understanding the ethical leadership within the organization.

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GLASS CEILING EFFECT ON WOMEN CAREER PROGRESSION IN URBAN PAKISTAN

Rozina Imtiaz, Sadia Shaikh, and Syeda Qurat ul Ain

ABSTRACT

Regardless of the notable increase in the women workforce worldwide, their advancement toward the senior managerial designations has remained limited. The obstruction for women to achieve senior-level positions due to gender discrimination is referred to the Glass Ceiling (GC) effect. Gender discrimination persists as a constant setback globally, but it has become an acute problem in developing countries. The key objective of this study is to investigate the glass ceiling effect on women career growth in urban Pakistan. Deductive approach is used to determine the variables which support the GC effect. A total of 150 questionnaires were distributed using random sampling technique among the female employees of Karachi, out of which 100 responded. Data is analyzed using descriptive statistics with the help of SPSS. The study concluded that urban working women are drained with family responsibilities, workload and gender discrimination at work, which eventually results in inefficiency and a high degree of stress. Study findings reveal that the strongest predictor that hinder Women Career Progression (WCP) is Gender Stereotype (GS), followed by Organizational Practices (OP), and the Work-life Conflict (WLC). Based on the study findings it is recommended that the organizations in Pakistan should inculcate equality, encourage diversity in the senior management, offer the women workforce flexible-job arrangements and maternity leaves, and provide day care facilities to the children, to balance the women work-life conflicts.

***Keywords**: Stereotype, Work-Life Conflict, Glass Ceiling, Gender Discrimination, Developing Economies.*

INTRODUCTION

The term glass ceiling is referred to the invisible barriers which obstruct women to reach the senior management positions in an organization (Pai & Vaidya, 2009). The 'ceiling' is an impediment that

obscures upward career progression while the 'glass' indicates the invisibility of the obstacle (Lathabhavan & Balasubramanian, 2017). It has been observed that, globally, women are earning only ten percent of the world wages instead of making about seventy-five percent of the world's total workforce (OXFAM, 2016). Conventionally, women are considered to bear and up-bring the children and run the household chores only (Barnett & Hyde, 2001). This attitude has created unnecessary obstacles and hurdles in women's career progression (Hejase, 2015). Interestingly this trend is witnessed not only in the developing economies but all over the world (Barnett & Hyde, 2001), for which the Glass Ceiling Commission was set up by the US corporate to examine the reason of relatively fewer women at the senior level positions as compared to their proportion at lower and middle management levels (US Glass Ceiling Commission, 1995). The US Corporate Leadership report proclaimed that the women as leaders in the business division are moving with slow advancement in the USA (Clevenger & Singh, 2013). In Lebanon, which has the highest literacy rate in the world, women entrance in decision making & public positions are relatively low due to the factors like gender career choice; low technical skills; and early exit due to marriages (Hamdan, Hamdan, Batlouni, & Mansour, 2007). The United Nations Statistical Division (2010), reports similar circumstances persistent in India, where due to occupational separation and lack of job opportunities for the women, men get more benefits.

In the past, due to the cultural and societal factors, women of Pakistan were hesitant to work in the job market (Faizan, Nair, & Haque, 2018), but now they have started participating in the economic activities. According to the World Economic Forum (2016), Pakistan ranked 143 out of 144 in the economic participation & opportunity gender wise; in labor force participation it ranked 139 out of 144 countries, whereas the male/female ratio was reported as 25:85. Furthermore, the country ranked 138 in the estimated earning income claiming the male/female ratio of 1,745:7714; ranked 119 in the professional and technical worker category with a work ratio of 22:78; and ranked at 122 in the senior officials, legislators and manager category declaring the male/female ratio as 3:97. According to CPDI (2017), and the Pakistan Employment Trends (2013), there persists a large wage/earnings gap between the two genders in Pakistan. The data reports that the wages of females stayed at 61.45% as compared to that of male's income.

Yukongdi and Benson (2005), ascertain that the women workforce participation in Asia involved in economic activity is quite high, which is nearly 64%. However, a small number of women in senior positions is the real research concern and it suggests that the women may face glass ceiling (Blank, 1996). Interestingly contribution of Pakistani women in the corporate boards is only 4.6% in the national firms, which is not only more than India (4.1%), but Indonesia (4.2%) too (Pakistan Bureau of Statistics, 2012).

The share of women in the top management positions has remained negligible due to the existence of biased obstacles which prevent women to get into senior management positions (Bazazo et al., 2017). It is the managerial level ahead of which women don't get promoted although attain the same qualification as their male colleagues (Pollard, 2007). Although Asian women workforce is quite high, nearly 64% (Yukongdi & Benson, 2005), still a smaller number of women on the senior positions is an alarming situation for the researchers (Blank, 1996). A safe and non-discriminative environment is not only in favor of women but in general for societies too (Yousaf & Schmiede, 2016). In such circumstances, the researchers intention of this study is to find the existence of the glass ceiling on women professional progress in Pakistan. The study is guided by the following research questions:

- What is the association between glass ceiling and low women career progression in Pakistan?
- What is the effect of organizational practices on women career progression in Pakistan?
- What is the effect of work life conflict on women career progression in Pakistan?
- What is the effect of gender stereotype on women career progression in Pakistan?
- How to overcome glass ceiling on women career progression in Pakistan?

LITERATURE REVIEW

The term 'glass ceiling' was first mentioned in the Wall Street Journal in 1986 (Al-Manasra, 2013). All the way through the history of human psychology, researchers have persistently interested to study not only the prejudice, stereotyping, and discrimination (Dovidio, 2001; Brewer, 1999; Fiske, 1998), but also the trend of 'intergroup biases' (Hewstone, Rubin, &

Willis, 2002). These topics have remained an area of interest for the discipline of anthropology and sociology. Moreover, the social psychologists, Allport, Clark, and Pettigrew (1954), in their book, 'The Nature of Prejudice', built a concrete foundation on discrimination, in which they conducted critical and systematic analysis (Dovidio, Hewstone, Glick, & Esses, 2010), which later became part of many disciplines including, sociology and political science, and also emerging disciplines such as neuroscience (Dovidio et al., 2010). Their research was further recognized and later implemented in law, business, medicine, media and education curriculum (Brief et al., 2000; Baldus, Woodworth, & Pulaski, 1990).

The women and gender issues have become key concerns in the organizational studies today. Different level of discussion groups and workshops are extensively held to spread awareness related to these issues (Varma, 2002). Although the intensity of women inequality issues today has lessened to some extent, but it still persists at senior level positions (Kilgour, 2013). Globally, women get less likely promoted on the higher corporate hierarchy, get comparatively low wages, and mostly hold part-time jobs whether it is Europe, Africa or Asia (Wilson, Gadbois, & Nichol, 2008). In countries like USA & UK where the forty percent of the workforce is comprised of women, and where the gender equity target has already proclaimed to be accomplished, only two percent of the women workforce succeed in getting a top position (Cole, 1997).

Theories on Gender Discrimination

Several theories have enlightened the hierarchy of gender discrimination in society. Some of them are discussed in this paper to support the issue of gender discrimination which women face in all the spheres of life.

Structural Functionalism Theory

It is one the most important sociological research of the twentieth century. The structural functionalist theory rationalizes present division of labor among the genders as necessary for the progress of a competent society (Virginia, 1990). Functionalists theory states that the gender roles were created way before the pre-industrial times. It was when men thought about more tasks outside of the home, like hunting or farming to feed the family, and women took the household tasks. After the industrial revolution the changes occurred in the society which changed the family structures too. Women started going out as breadwinner along with their domestic roles which eventually disproportioned imbalanced the societal balance (Hawke, 2007).

Conflict Theory

In the conflict theory, Farrington (1993), stated that there is a competition persistent between the social groups (men and women) for the dominance of society's inadequate resources. The problem arises when the dominant group takes advantage of the subordinate group. It is quite difficult for the women to formulate a system for the success in this race.

Statistical Discrimination Theory of Sexism and Racism

Phelps (1972), presented this theory and mentioned the supposition of doubt in appointment decisions. While appointing employees, although companies inspect the aptitude and qualification of their candidates, they cannot be ascertained about a candidate's better performance. Therefore, to overcome this doubt most employers prefer male applicants over the females they consider the male applicants to be more productive than females. The consequences of this discrimination are damaging. In case a woman is paid less with fewer or no training, then chances are high that she will give up her job; consequently, this strengthens the view of the specific discriminatory employers' group. On the contrary, if women are paid well like their counterparts and get all firm-specific trainings, the chances of quitting her job are very low (ibid).

Organization Policies & Practices

Organizational policies emphasize and make clear standard operating procedures in any organization. Good policies facilitate the company to deal with the workforce more effectively by clearly stating what behaviors are acceptable and what are not (Hammer et al. 2005). As it is a well-known fact that these jobs are getting more demanding, thus it is essential for the firms to understand how they can support and enable the employees to balance work and family life (Kossek, Lewis, & Hammer, 2010).

Globalization has opened a venue of opportunities to the women for their career development (Rai & Srivastava, 2010). It is observed that women with the same skills and qualities as their counterparts, has to struggle more than her male colleagues (NJIRU, 2013). It is concluded in a study by Mainiero and Sullivan (2005), that although women workforce is increasing, still most achieved designations are not higher than the head of the middle management. (Lemière & Silvera, 2008; Gavray, 2004), claimed that these jobs are not considered as important as it provides little chances of promotion with fewer career opportunities for women. In the US, a native male has edge over native female not only in respect of pay but also in

authority and better job status (Dunn & Skaggs, 2006). Al-Manasra (2013), mentioned that the glass ceiling is the main reason for a female middle manager not getting promoted like her counterparts or having fewer career opportunities.

Gender inequality against women makes the organization's unfriendly for them (Abrams, 1991). Some of these gender inequalities comprise of gender wage gap (Petersen & Morgan, 2013); lack of women in leading positions (Eagly & Carli, 2007); and low career growth compared to their counterparts (Blau & Devaro, 2007). The reason of occurrence of such discrimination is none other than the HR policies and related decision-making, which ultimately not only affect physical and mental health of the female employees (Borrell et al., 2010; Schmader, Johns, & Forbes, 2008), but also affect their commitment towards the organization (Hicks-Clarke & Iles, 2000), and performance (Spector & Cohen-Charash, 2001).

Moreover, organizational prejudice also takes place during the process of performance evaluation such as rewards (compensation), opportunities (promotion, role assignments), and punishments (termination) (Stamarski & Hing, 2015). Another key factor that creates obstacle in female career growth is harassment. Harassment is an unwanted or unwelcomed behavior from one of the participants. In a research conducted in India Kakker and Bhandhari (2015), observed sexual harassment as the key factor, that hold back women from moving towards top management (Sandhu, Singh, & Batra, 2014). In Nepal, nearly 53.88% women experienced harassment in their workplaces in 2004 (Elder, & Schmidt 2004), while Japan Ministry of Labor, found nearly 40% of participants experienced sexual harassment in the workplaces (Caran, Secco, Barbosa, & Robazzi, 2010). In a report by Human Rights Watchdog it is revealed that 68% Pakistani women were harassed sexually (Arab Naz et al., 2013), most of these complaints don't get reported as victims fear to get disgraced and/or fear to lose their jobs (D'Cruz & Rayner, 2013).

Ambivalent Sexism

Ambivalent sexism is a theoretical framework which theorizes that sexism has two sub-components: hostile sexism and benevolent sexism. Hostile sexism is based on aggressive negative stereotype towards women, where women are viewed as incompetent, overly emotional, and sexually manipulative figures, whereas, men are believed as more authoritative and commanding (Cikara, Lee, Fiske, & Glick, 2009).

Although Benevolent Sexism is based on a comparatively better view about the women, as far as they are acting their traditionally feminine roles. Benevolently sexists believe females as a fragile figure who need their protection, support, and adoration (Glick et al., 2000).

Thus, managers with hostile beliefs discriminate against women in human resource policies and decision (Glick, Diebold, Bailey-Werner, & Zhu, 1997). It is noted that the organizational decision makers with the hostile sexism beliefs discriminate women in the form of gender harassment which includes hostile terms of address, negative comments regarding women in management, sexist jokes, and sexist behavior (Fitzgerald, Gelfand, & Drasgow, 1995). While the organization's authoritative person with benevolent beliefs gives high authority roles to men and low authority roles to the female employees (Rudman & Kilianski, 2000). Barreto, Ryan, and Schmitt (2009), affirmed that the careerist women who strive to get on top hierarchy face discrimination along with sexual harassment, which comes at a cost to them which they carry along all their life as a victim of chauvinism, harassment & stereotype.

In Pakistan, one of the successful working women, Salma Jafri, CEO of WordPL.net, mentioned that she got rejected in an interview of a multinational firm as her family have a tradition of female's early marriages, as the organization did not support that notion. Another Pakistani woman, Maria Umar, who is the owner of 'The Women Digital League', quitted her job when management refused to grant her maternity leave (Muhammed, 2013). There are pieces of evidence of women getting bullied, faced hostility, given underrated tasks and expected to make tea at the job (Dale, Jackson, & Hill, 2005). Moreover, women recruitment decisions are made on several inquiries about their personal life plans, it reflects employers concern that having a family will affect women's professional efficiency (Dale et al., 2005). Traditionally, all human resource policies and structures are arranged as per a man's life which conflicts with women's life (Newman & Mathews, 1999).

Work-life Conflict

A balanced work life builds a supportive and healthy workplace environment, which enables an employee to maintain a balance between work and family responsibilities, which in return enhances their productivity (Garg, 2018). Women employees as a member of society have diverse roles like wife, mother, employee, and a friend, thus, there is high possibility of

conflict to take place among these roles (Rantanen et al. 2011). The male model of work, where the men work full time, having no obligation other than office work, who was considered as more committed to the organization (Lewis, 1997), is outdated now (Bailyn & Harrington, 2004).

Men and women both encounter work-family conflict, which arises when one of both family and work starts affecting the other, like the long-jobs hours which are not suitable for parenting (Kumari, 2014). Work-life conflict arises in three forms namely: time, strain, and behavioral constraint (Dizaho, Dizaho, Salleh, & Abdullah, 2016). Among them, time is the main factor, as for women it is quite challenging to manage time with her career, kids, home tasks and herself (Pirzada et al., 2013). Time conflict plays an important role in career development of employees, especially working mothers, who face this conflict while balancing their roles as an employee and a mother. Thus, they are left with little time to deal with higher responsibilities (Bartolomé & Evans, 1979). Employees who could not dedicate most of their time to the firms are assumed as less productive employees (Lewis, 1997), as compared to the employees who are available for long hours. These employees thus successfully avail the career development opportunities (Burke, 2002).

For a working mother, it is quite difficult to be enthusiastically involved while balancing her work and family roles (Tausig & Fenwick, 2001). Firms rewarding long hour sittings at the workplace thus make it far more difficult for women, especially mothers, to fulfil the organizational commitment and balance work and family time (Lockwood, 2003). Women, no matter working or housewives, are more answerable than men when we talk about home tasks and kids. These uneven duties reflect that the women are leading dual-gendered life (Cook, 1993). A survey conducted by the Conference Board of Canada (2000), revealed that 52% of female employees of Canada found difficult to deal with both spheres of life simultaneously. As parents, they go through stress when failed to spend enough time with their children, and it is witnessed more among full-time working women of aged 25-44 years (NJIRU, 2013).

Extended work hours and days are common in today's organizations, which forces women to act as superwomen or discover further ways to achieve success in both fortes thus may result in stress (Kumari, 2014). Studies in India postulate that the traditional authoritarian culture tilts towards men, and the Indian women face troubles due to her dual role. These

troubles result in work-life conflicts which lead to stress, ill-health, poor work performance or even quitting the job (ibid). It is also discovered in a study that work-life conflict and the occurrence of illness such as hypertension, hypercholesterolemia, gastrointestinal disorders, allergies, and migraines are strongly correlated (Thomas & Ganster, 1995). Moreover, Duxbury & Higgins (2012), recognized that most of the time the cause of missing work was related to emotional, mental or physical fatigue. Work life conflict is considered as a source of cognitive problems like staying awake, lack of concentration, and low alertness (MacEwen & Barling, 1994). Due to all these pressures and conflicts, working women contribute less effort for their career development (Duxbury & Higgins, 2012).

Gender Stereotypes

The term "Gender Stereotype" is used for judging men and women over culturally recommended roles then restricting their perspective (Agars, 2004). Schein (2001), describe gender stereotyping as a belief that a set of qualities and capabilities is more probable to be existent among one gender than the other. A gender stereotype basically means role fixation linked up with diverse genders. (Shabir, Shakeel, & Zubair, 2017). Fiske, Haslam, & Fiske (1991), explain gender stereotypes, as expectations of how a man and a woman should be like. Organizations and the decision makers have different expectations for a male and female professional capability and performance. These expectations can cause gender discrimination" (Roberson, Galvin, & Cherise Charles, 2007). Gorman (2005), asserts that in a male chauvinistic world, a male boss represents the role of conventional and typecast male in the firm. Moreover, it's a traditional mindset that female cannot be a productive manager and they are not capable for executive posts (Tajfel, 1969). Furthermore, it is considered that women should work in the traditional female occupations, comparatively on low remuneration, no matter full-time or part-time, somewhat like administrative occupation & services while men are portrayed as businessmen, craftsmen, workmen and managers (Čeněk, 2013).

Conventionally females are believed to be not physically strong and that is why males are more connected in particular tough job fields such as carpenters (Helgeson, 2016). Gender stereotype moreover comprises some vivid attributes of specifying duties and limitations as per the gender (Burgess & Borgida, 1999). Previous research also confirms the reality of gender stereotyping which considers women as less competent, but keen

on achieving goals as compared to the males (Broverman et al., 1972). However, women's role is assumed to be miss-fit and contradictory when she approaches for the role meant for the men, as a consequence, her performance decreases (Heilman, 1983). It can cause women to reconsider her career even force her to change the career path she decided for herself (Pinel & Paulin, 2005). Similar stance has also been witnessed among business managers (Gibson & Tulgan, 2002). It is further stated by Flanagan and Green (2013), that minority and female members under the influence of stereotype threat, demonstrated low performance. Stereotype threat lessens enthusiasm and interest, eventually, individuals entirely distance themselves from any connection with the job domain (ibid).

CONCEPTUAL FRAMEWORK

Figure 1. Glass Ceiling Effect

RESEARCH HYPOTHESIS

H_1: Organizational policies, work-life conflict and gender stereotype are positively related to career progression of urban Pakistani women.

H_2: Organizational policies and practices are positively related to career progression of urban Pakistani women.

H_3: Work Life conflict is positively related to career progression of urban Pakistani women.

H_4: Stereotype is positively related to career progression of urban Pakistani women.

RESEARCH METHODOLOGY

The study adopted descriptive as well as inferential research design. The research is quantitative in nature. Moreover, positivism research philosophy is adopted for the study. This research has collected cross-sectional data, as the data has been collected only once (Bell, Bryman, & Harley, 2018). Deductive approach is adopted as the theory and hypothesis are developed, and research strategy is designed to test the hypothesis (Saunders, Lewis, & Thornhill, 2009). For the estimation of population of the sample size, we gathered information from the Pakistan Bureau of Statistics. According to the survey report of Pakistan Statistical Year Book (2012), there is a total of 87.64734 female labor force in Pakistan, out of which 14,20763 lies in urban Pakistan. Through the Rao soft sample calculator (2004), the sample size calculated is 384 with 95% significance & 5% margin of error. Due to time constraint, only 150 questionnaires were distributed out of which 100 responded completely. We have used probability convenience sampling technique to gather data from different corporate sectors of Karachi. The summary of the constructs adopted in this study is presented in Table 1.

Table 1. Constructs Adopted

Construct	No of Items	Author
Career Progression	3	(Al-Manasra, 2013)
Organizational Policies	14	(Al-Manasra,2013), (Kumari, 2014), (Tran, 2014)
Work Life Conflict	4	(Al-Manasra, 2013),
Stereotype	4	(Mihail, 2006)

Pilot testing was carried out on 20 respondents to measure the reliability of the construct. The summarized results of the reliability analysis are mentioned below in Table 2.

Table 2. Reliability of the Pretest

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.911	.926	26

The overall reliability of the constructs is (α=.911). Thus, based on the reliability analysis it can be safely assumed that the questionnaire was valid for conducting the research survey.

Multivariate Model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

RESULTS

The result discussion on the descriptive analysis, reliability analysis, correlation and regression analysis are presented in this section. Table 3 illustrates the univariate normality which is measured by Kurtosis and Skewness analysis.

Table 3. Descriptive Statistics

Construct	Mean	Std. Dev.	Skewness	Kurtosis
Organizational Practices	2.2900	.47420	0.4025	1.575
Work-Life Conflict	1.9950	.47405	0.4979	0.4246
Career Progression	2.2933	.65010	0.4730	0.3054
Stereotype	2.3340	.52498	1.6680	1.928

Table 3 shows that stereotype with a mean of 2.33, and SD .525 has the highest skewness (SK=1.67) and organizational practices with a of mean 2.29 and SD of .474 has the lowest skewness (0.402). Moreover, stereotype with a mean of 2.33 and SD of .525 has the highest kurtosis (KT=1.928). Whereas, career progression with a mean of 2.29 and SD of .650 has the lowest kurtosis (KT=0.305). It is mentioned in Table 3, that all the constructs fall within the range of ±1.96 which proves the normality. Furthermore, Cronbach's Alpha is used for testing internal consistency of the research constructs. The results are illustrated in Table 4.

Table 4. Reliability Analysis

Construct	Cronbach's Alpha	Standardized Cronbach's Alphas	Mean	Standard Deviation
Organization practices	.799	.818	2.290	0.4230
Work Life conflict	.762	.763	1.995	0.0316
Career Progression	.788	.788	2.293	0.0447
Stereotype	.771	.776	2.334	0.089

Results from table 4 show that the alpha values deviate between (α=0.762 to α= 0.799). Besides, the work-life conflict with (α=.762, Mean=1.99, SD=0.0316) has the lowest reliability, the organizational practices with (α=.799, Mean=2.290, SD=0.4230) has the highest reliability. Since all the above alpha values are greater than 0.7, it indicates the acceptable reliability (Leech et al., 2005).

To ensure the uniqueness of the constructs and to assure there is no

issue of multicollinearity, correlation analysis is carried out. The results of the correlational analysis are illustrated in Table 5.

Table 5. Correlation

Construct	Mean	STD_DV	ORG_P	WRK_LF	CARER_P	STEREO
Organizational Practices	2.2900	0.47520	1	519	.757	.635
Work Life Conflict	1.9950	0.47405	.519	1	.464	.380
Career Progression	2.2933	0.65010	.757	.464	1	.839
Gender Stereotype	2.3340	0.52498	.635	.380	.839	1

The highest correlation (r=.83) is between the pairs of career progression (Mean= 2.29, SD=.0.650) and gender stereotype (Mean= 2.33, SD=0.524). Whereas, the lowest correlation (r=.380) is between the pair of work-life conflict (Mean=1.99, SD=0.474) and gender stereotype (Mean= 2.33, SD=0.524). Correlation results of all the constructs fall within the ranges of .30 and .90 which indicates that there is no multi-collinearity and all the constructs adopted are unique.

Hypothesis 1: Organizational Policies, Work-life Conflict and Gender Stereotypes

To measure the combined effect of all predictors (work-life conflict, organizational practices, gender stereotype) on career progression, multiple regression analysis is used. Result summary of the results is illustrated in Table 6.

Table 6. Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 Career Progression	-.667	.169		-4.010	0.00
Work Life Conflict	.076	.075	.055	1.009	.316
Organizational Practices	.480	.090	.351	5.352	0.00
Gender Stereotype	0.737	.075	.595	9.810	0.00

Dependent Variable: Career Progression, R^2= .889, Adjusted R^2=.79, F= 120.676, p=0< 0.05.

The results show that the predictors (work-life conflict, organizational practices, gender stereotype) aggregately explain 88. of the variance F=120.676, p=0< 0.05. It is mentioned in table above that the career progression is getting significantly influenced by gender stereotype (ß=.737, p<.05), followed by organizational practices (ß = .480, p<.05); and work-life conflict (ß = .076, p<.05). Moreover, we

concluded that the developed model explains the glass ceiling effect on career progression, which is apparent from the regression equation mentioned below:

Career progression= .667+ .076*Work Life conflict+0.48*Organizational practices+0.737* Gender Stereotype+ .169

Hypothesis 2: Organizational Practices and Career Progression

The results of claimed hypothesis, organizational policies and practices which have direct impact on career progression of urban Pakistani women is summarized below in Table 7.

Table 7. Summarized Results (Simple Regression)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
1 Career progression	-.079	.211		-.375	.709
Organizational practices	1.036	.090	.757	11.479	.000

Dependent Variable: Career progression, R^2= .757, Adjusted R^2=.569, F=131.757, p=0< 0.05.

Regression summarized results illustrate that the organizational practices defines 75.7% of the variance (R^2=.757, F=131.757, p<.05). It is found that organizational practices (ß = 1.036, p<.05) significantly influence career progression. For career progression the regression equation is:

Career progression = .079 + 1.036*organizational practices +.211

Hypothesis 3: Work-Life Conflict and Career Progression

Table 8. Summarized Results (Simple Regression)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
1 Career progression	1.025	.252		4.073	.000
Work life conflict	.636	.123	.464	5.181	.000

Dependent Variable: Career progression, R^2= .464, Adjusted R^2=.207, F=26.841, p=0< 0.05.

The regression summarized results illustrate that the work-life conflict defines 46% of the variance (R^2=.464, F=26.841, p<.05). It is found that work-life conflict (ß = .636, p<.05) significantly influence career progression. For this relation the regression equation is devised as:

Career progression = 1.025 + .636*work life conflict+.252

Hypothesis 4: Gender Stereotype and Career Progression

The results of claimed hypothesis, gender stereotype, has direct impact on career progression of urban Pakistani women is illustrated below in Table 9.

Table 9. Summarized Results (Simple Regression)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
1 Career progression	-.131	.163		-.802	.425
Gender Stereotype	1.039	.068	.839	15.243	.000

Dependent Variable: Career progression, R^2= .839, Adjusted R^2=.700, F =232.355, p=0< 0.05.

Regression summarized results illustrate that the gender stereotype defines 83% of the variance (R^2=.839, F=232.355, p<.05). It is thus found that the gender stereotype (ß = 1.039, p<.05) significantly influences career progression. The regression equation is given below:

Career progression = .131 + 1.039*gender stereotype+.163

DISCUSSION & CONCLUSION

Almost all the claimed hypotheses seem to be consistent with the earlier studies, and all of them have answered the research questions. The hypothesis stating that predictors (Organizational Practices, Work-Life Conflict, Gender Stereotype) are positively related to Career Progression of urban Pakistani women is established (refer to Table 6). This conclusion supports the earlier studies, which also found that that glass ceiling positively affects women career progression (Wilson, Gadbois, & Nichol, 2008). Another hypothesis claiming that the predictor Organizational Practices is positively related to Career progression of urban Pakistani women is also established (refer to Table 7). It is also well supported by the result of frequencies distribution as More than 70% of respondents agreed that Organizational Policies and Practices on selection and promotions are hampering their career. Likewise, more than 70% of respondents agreed that they receive inadequate support from organizations to balance job and home life. In this connection, 80% agreed that they have to put more effort than their male counterparts to carry their career and 70% of respondents affirmed that their dual roles, lessen their working ability. Similarly, more than 65% agreed that they faced

discriminations while promotions and trainings and received less pay as compared to their male counterparts. Correlation results show strong positive relationship between Organizational Practices and WCP in urban Pakistan (Table 5). All these findings are consistent with previous studies, such as a research conducted in Malaysia concluded that women middle managers experienced glass ceiling at their workplace (Al-Manasra, 2013). The hypothesis stating that the predictor Gender Stereotype positively affects the WCP of urban Pakistani women is also established (refer to Table 9). Interestingly results of frequency distribution show that most women (65%) think that their organization gives important tasks to their male counterparts (Table 5). These findings are consistent with previous research of Flanagan and Green (2013), who assert that the stereotype threat lessens enthusiasm and interest amongst the individuals, eventually, they distance themselves from any connection with the job domain. The hypothesis stating the predictor Work-Life Conflict is positively related to Women Career Progression of urban Pakistani women is also accepted. Although it doesn't show high R^2 value (Table 8) and show moderate relationship with WCP (Table 5).

Regarding the dual role, more than 80% of the respondents agree that WCP is strongly hindered by dual role (Table 5). These findings are consistent with the survey conducted by the Conference Board of Canada (2000). The overall model successfully explaines the GC effect on WCP of urban Pakistani women. It was also found that the strongest predictor that hindered WCP is Gender stereotype (R^2= .84) followed by Organizational Practices and Policies (R^2 =.75) that also strongly effect the WCP, and Work-Life Conflict (R^2 =.46). All the established hypotheses not only answered all the research questions but also validated previous findings.

RECOMMENDATIONS

It is empirically proved from this study that Pakistani urban women are facing challenges in their career development. Women are facing diverse discrimination; gender stereotype and organizational policies are the two most hindering factors in the path of women career progression. The study recommends initiating gender equality and fairness in promoting women career progression policies. Thus, organizations in Pakistan should practice encouraging the appointment, retention, and progression of women by adopting work/life policies. These policies should help women to balance the job and family roles in today's fast competitive environment. Moreover, facilities like maternity leaves, flexible-job arrangements and daycare for children should be provided to the working women to promote WCP and disdain the persistent glass ceiling in the organizations.

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ASYMMETRIC EFFECT OF GOLD AND OIL PRICES ON STOCK MARKET PERFORMANCE IN PAKISTAN: NEW EVIDENCE FROM ASYMMETRIC ARDL COINTEGRATION

Muhammad Saeed, Muhammad Hafeez, Ghulam Mustafa Shaikh, and Dr. Muhammad Shahid

ABSTRACT

The previous studies on stock market modelling in Pakistan context has assumed a linear relationship between stock market performance and its determinants. Most of the macroeconomic variables do not have linear properties, therefore considering asymmetric features of macroeconomic fundamentals, this study is a first attempt to explore the asymmetric impact of gold and oil prices on the stock market performance of Pakistan, covering the time period of 1990 – 2016. For the consideration of nonlinear, short-run and long-run associations between gold, oil prices and stock market performance, a novel approach of nonlinear ARDL or asymmetric ARDL is being used. The long-run parameters of the study affirm the asymmetric association between gold, oil prices and stock market performance, while short-run dynamics validate the asymmetric association between oil prices and stock market performance. Furthermore, negative and significant link between the exchange rate and the stock market was also found. The empirical outcomes propose that ignoring intrinsic asymmetries may lead to the misrepresentative implications in case of stock market performance. The achieved suggestion of asymmetries, both short and long-run dynamics could be of key prominence for more effective policy-making and to forecast the Pakistan Stock Market.

Keywords: *Asymmetric Cointegration, Asymmetric ARDL, Oil Prices, Gold Prices, Pakistan Stock Market.*

INTRODUCTION

Emerging economies have offered considerable opportunities to investors and stock market stakeholders to earn higher returns through

market capitalization. During the last couple of decades, a recent pattern of capital inflows and growth in trade volume is observed Kumar (2014). Furthermore, higher returns and other earning opportunities have attracted investors to invest in emerging markets to earn more, as compared to the developed capital markets such as the European and United States stock markets. Consequently, substantial inflows are expected to go into emerging stock markets from developed economies (Prasad et al. 2005). Stock prices in emerging economies, in terms of capital inflows and outflows, are more volatile and instable due to the good or bad news or occurrence of any other event around the globe. The global financial crises have also set in motion an upheaval in the global stock markets since last few decades (Ji & Fan, 2012). During the 2007-2008 crisis resulting from the subprime mortgage, the stock markets of Pakistan and other countries experienced disproportionate fluctuations and an adverse downturn in stock prices which eventually affected stock market performance (Bernanke, 2009).

In the past few decades, the relationship between exchange rate, oil prices, gold prices, economic growth and stock market performance has been studied in a linear setting (Okwuchukwu, 2015; Kanjilal & Ghosh, 2014; Shahbaz et al., 2014; Beckmann & Czudaj, 2013; Wang, Lee, & Thi, 2011). However, few studies are carried in a nonlinear fashion. Stock market performance is a reflection of an economy's macroeconomic drivers such as exchange rate, gold rate and oil prices. In developing economies, any good or bad news or event(s) significantly affect the macroeconomic drivers and their rates and prices (Raza et al., 2016). Furthermore, the stock market study is an enduring topic, which is discussed extensively with various other determinants such, Saeed Meo (2017), explored the relationship between the stock market and governance indicators.

Moreover, volatilities in oil prices, exchange rate and gold prices profoundly affect the stock prices and macroeconomic variables in most developed and emerging economies (Cologni & Manera, 2008; Gronwald, 2008; Kilian, 2008; Lardic & Mignon, 2008). Oil price volatilities, for example, affect differently (i.e. positively and negatively) on oil importing and exporting countries. For the importing economies, as oil prices decline, it gives rise to government expenditure, cost of production and a decrease in foreign reserves. For exporting economies, on the other hand, it results in decreased revenue than before oil prices actually decline. This

varied effect produces sudden shocks in stock prices. Hence, this encourages research practitioners to use nonlinear framework for volatile variables (Jiménez-Rodríguez & Sánchez, 2005).

Changes in exchange rates considerably affect stock prices in developing countries like Pakistan. Previously numerous models have been employed to see how the exchange rate affects stock markets in linear settings. Various researchers have used unconditional models (Chen et al., 2004; Di Iorio & Faff, 2001), while different researchers have used conditional models to investigate the effect of exchange rate on stock prices (Choi, Hiraki, & Takezawa, 1998; Ferson & Harvey, 1994). However, covariance among foreign exchange, market return and risk premium results in a positive or negative correlation between the said variables. Hau and Rey (2005), suggested that exchange rate and stock returns are negatively correlated because it adjusts the portfolio. Furthermore, the adverse effect of exchange rate volatilities and firm cash flows are also observed (Dumas, 1978; Shapiro, 1975). For this reason, studies on exchange rate volatilities in non-linear settings is required.

Because of the cultural and social significance of gold, women largely use gold in South Asia, especially in Pakistan and India. Investors keep gold in their portfolio because it provides hedge against extreme changes in the exchange rates, inflation, economic downturn, political turmoil and during poor performance of the stock markets (Worthington & Pahlavani, 2007; Capie et al., 2005; Ghosh et al., 2004; Mahdavi & Zhou, 1997). In addition, the inclusion of gold in a portfolio can offer diversification benefits because it normalizes the volatilities in stock prices and increases overall portfolio return (Chua, Sick, & Woodward, 1990; Sherman, 1982). Therefore, gold prices are a major concern for the central bank and other stakeholders. Although, having hedge and diversification benefits, fluctuations in gold prices negatively affect the stock markets. The minor fluctuations in gold price make the situation secure for investments and vice versa (Baur, 2012; Tully & Lucey, 2007). Therefore, it is imperative for investors to understand the changing behavior of gold markets when adding it in the portfolio for hedge or diversification purpose (Ewing & Malik, 2013).

As discussed earlier, most studies have investigated the relationship between macroeconomic factors (i.e. gold and oil prices; interest, inflation and exchange rate) and the stock market performance in a linear setting.

However, in practice, these variables are subject to frequent fluctuations and exhibit nonlinear behavior which is ignored in previous studies. Anoruo (2011), explains that the fundamental limitation in a linear model is that it considers linear series whereas, they are nonlinear in practice. Moreover, the linear model fails to account short-run fluctuations and structural changes. Consequently, prior studies have provided mixed results, which propose that an increase in afore-mentioned variables may have a positive or sometimes negative effect on the stock market performance and vice versa. In order to fill the above-mentioned gaps and to get reliable results, this study will incorporate both short and long-run fluctuations and structural changes in the selected variables. The task will be completed using nonlinear ARDL suggested by Shin et al. (2014), that makes it possible to examine whether an increase or decrease in oil prices, gold prices, and exchange rate react in a different way (both in short-run and long-run) on the stock market. The basic benefit of using NARDL over linear model is that it enables underlying study variables to move along the different time periods. Furthermore, it provides error correction mechanism or a system which consider asymmetries in long-run co-integration. This permits asymmetric observations' response of oil prices, gold prices and exchange rate to both positive and negative fluctuations in stock market performance. The NARDL is thus, compatible in developing new structural analysis to retain the variables under study.

LITERATURE REVIEW

The stock market is one of the major areas where people invest their capital to receive higher returns. However, what drives the stock market returns is a major concern for the research practitioners. Most of the studies on stock markets performance have been conducted using linear models and little attention has been given to non-linear models. As a result, these models have not provided reliable results. Currently, research on different issues using Nonlinear Autoregressive Distributed Lag Model (NARDL) is emerging and very effective to assess the relationship between different variables. Thus, shows the growing interest in the use of Nonlinear Autoregressive Distributed Lag Model (NARDL) around the globe.

Vacha and Barunik (2012), examined this phenomenon and found asymmetries in oil and stock prices, because of the rational economic agents with different level of risk and expectations. Arouri et al. (2015), reported that investors are usually risk aversive and they choose to invest in gold due to the minimum risk associated with it. The risk-aversive

behavior of investors has considerable implications for the stock market capitalization and performance. Secondly, the volatility or fluctuation in gold and oil prices also differs. The strength of gold to hold its value during a slump or sluggish growth compared to the value of oil provides an edge to investors to invest in the gold. Tiwari and Sahadudheen (2015), reported that investors are willing to invest in gold and oil due to their property of high liquidity and this is a safe option for them in the time of economic downturn or financial crisis. Goodman (1956), revealed that there are higher chances of loss of assets' value, including the investments in the stock market during inflationary pressure in the economy, while the gold usually holds its purchasing power.

Extensive literature is available that explains the frequent fluctuations in the gold prices and its potential negative impact on investment in the stock market. In the presence of low volatility, investment in gold is very instrumental and considered as a profitable option for portfolio diversification and hedging. Chen and Lin (2014), observed that central banks consider and retain gold as a secure asset to avoid the assets loss during an economic downturn. This nature of gold significantly reduces investment in stock markets. Kaufmann and Winters (1989), investigated the behavior of central bank during economic uncertainties and their inclination for investment in gold which affect the investment in the stock exchange. They suggest a positive nexus between gold investment and uncertainties which implies higher investment in gold by the central bank with a higher degree of uncertainties in the stock market. Baur (2012), found that frequent fluctuations in gold prices increase the investment inflow in the stock market. In other words, intense volatility in gold prices is negatively associated with the stock market investment. Investment in stock market declines with a lower fluctuation and volatility in gold prices. Ewing and Malik (2013), assessed this problem and reported that investigating the fluctuations and volatility in oil and gold market is very essential for investors to make hedging decisions. The investment in the stock market is highly responsive to the volatility in the gold market. Tully and Lucey (2007), reported that variables like gold and crude oil prices are very instrumental and investors are keen to understand stock market reactions on these variables. Similarly, Beckmann and Czudaj (2013), argued that besides the other factors, fluctuations in the gold and crude oil prices have major implications for investment and ultimately on the performance of stock markets. Furthermore, Maghyereh and Al-Kandari

(2007), observed that commodity prices show a nonlinear effect on stock markets. The stock markets in both emerging as well as developing economies are susceptible to oil and gold prices (Driesprong et al., 2008).

Considerable literature is available on the issue of nonlinear modelling approach in different countries, however, as far as our knowledge is concerned, no research is yet available in Pakistan. Asymmetric causal links between exchange rate, oil, gold prices and stock market are expected which provides the justification of this study and the use of NARDL model. The results of the studies on the nexus between gold prices, oil price and stock market performance in both developed as well as developing countries are largely heterogeneous. Jones and Kaul (1996), found a significant negative effect of oil prices on stock prices. Henriques and Sadorsky (2008), also reported that there exists a strong nexus between the variables. However, the results considerably vary from firm to firm depending on the size or capital share of the firm. Bekiros and Diks (2008), investigated oil prices nexus with future returns and found a nonlinear asymmetric relationship. According to the literature, all oil shocks are not similar. Kilian (2008), identified and explained numerous oil price shocks. These shocks are sometimes caused by supply-side shocks, demand-side shocks and production shocks. These different shocks to oil prices have different implications for investment in the stock markets. Kilian and Park (2009), revealed that investment in stock and its return in relation to changes in oil and gold prices varies across time and place. Hamilton (2009), explain that association between oil prices & investment in financial market hinges on origin and nature of the crisis. The results are either inconclusive or heterogeneous because different factors like shock to production, aggregate demand shock or shock to oil and gold prices due to uncertainty considerably affects financial investments.

This paper has considered an in-depth literature review and intends to report some important relationships among, exchange rate, gold prices and oil prices impact on stock market using NARDL, which is not reported previously in Pakistan. A Considerable number of economists tried to investigate the relationship among different variables of their interest using Nonlinear Autoregressive Distributed Lag model (NARDL). However, NARDL is rarely used to analyze stock market performance but is getting high attention in economics and finance literature (Meo et al., 2018; Fareed et al., 2018; Meo et al., 2018). The use of the nonlinear

autoregressive distributed lag model in our study will allow us to assess the impact of different variables in short-run and long-run. Literature involving data of time series has largely ignored the nonlinearity in oil and gold prices along with stock market performance. Disregarding nonlinearity in any time series variable has significant implications not only for the findings but for policy implications as well. Anoruo (2011), argued that fundamental weakness in linear modelling is the failure to apprehend the asymmetry in different time series variables.

ECONOMETRIC MODELLING

Firstly, a linear equation is postulated to examine the nature of the relationship between exchange rate and stock market performance along with oil and gold prices,

$$LSP_t = \beta_0 + \beta_1(LEXR_t) + \beta_2(LOP_t) + \beta_3(LGP_t) + u_t \quad (1)$$

In equation (1), LSP, LEXR, LOP, and LGP refer to the log of stock market performance, log of the exchange rate, log of oil prices, and log of gold prices respectively. Current literature assumes that positive and negative changes in oil prices and gold prices have a similar impact on stock market performance. Raza et al. (2016), explored that the negative and positive changes have asymmetric effects on stock market prices. The prime objective of this study is to explore asymmetric effect(s) of oil and gold prices on stock market performance in the context of Pakistan. Therefore, the nonlinear functional form of the model is derived as follows.

$$LSP_t = f(LEXR, LOP_t^+, LOP_t^-, LGP_t^+, LGP_t^-) \quad (2)$$

Whereas, the general form of asymmetric ARDL will be as following.

$$LSP_t = \beta_0 + \beta_1(LEXR_t) + \beta_2(LOP_t^+) + \beta_3(LOP_t^-) + \beta_4(LGP_t^+) + \beta_5(LGP_t^-) + \varepsilon_t \quad (3)$$

Where LSP refers to stock prices, LOP^+ and LGP^+ denote the positive partial sum of oil prices and gold prices respectively. Whereas, LOP^-, LGP^- refer to the negative partial sum of oil prices and gold prices respectively. While, $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are the long-run coefficients to be estimated. ε_t is the error term.

There are five reasons for using nonlinear ARDL of (Shin, Yu, & Greenwood-Nimmo, 2014). Firstly, it permits co-integration modelling that could have been existed between the exchange rate, oil prices, gold prices and stock market performance. Secondly, nonlinear ARDL approach produces long-run and short-run effects of independent variables on the

dependent variable. Thirdly, stationary order restriction is needed to compute linkage between under-considered variables in traditional models like error correction models. Traditional models can only be applied if all the variables are integrated in the same order. On the other hand, NARDL can be applied either if all variables are purely stationary at I(0), I(1) or I(0) & (1) except I(2) (Bacha, & McMillan, 2017; Ibrahim, 2015; Ilyas et al., 2010). The fourth reason stresses that the NARDL performs well in a small sample size (Narayan, 2005; Ghatak & Siddiki, 2001; Pesaran et al., 2001; Romilly et al., 2001). Finally, the last benefit of nonlinear ARDL model is its quality to produce long-run and short-run asymmetric associations.

The specified Eq.1 only provides long-run coefficients of exogenous variables. While, for the short-run effects the Eq.1 is rewritten following the Pesaran et al.'s (2001) bounds testing approach under the error correction mechanism, as follows:

$$\Delta lsp_t = \gamma_0 + \sum_{k=1}^{m1} \gamma_{1k}\, \Delta lsp_{t-k} + \sum_{k=1}^{m2} \gamma_{2k}\, \Delta lexr_{t-k} \sum_{k=1}^{m3} \gamma_{3k}\, \Delta lop_{t-k} + + \sum_{k=1}^{m4} \gamma_{4k}\, \Delta lgp_{t-k} + \lambda_1 lsp_{t-1} + \lambda_2 lexr_{t-1} + \lambda_3 lop_{t-1} + \lambda_4 lgp_{t-1} + \mu_t \quad (4)$$

Specification (4) provides short and long-run effects under the error correction mechanism where, $\gamma_1,\gamma_2,\gamma_3,\gamma_4$ refer to short-run coefficients and $\lambda_1,\lambda_2,\lambda_3,\lambda_4$ denotes long-run coefficients of the model. However, for the validity of long-run coefficients, Pesaran et al. (2001), suggested using bounds test/F-test.

Furthermore, the specification (1) & (4) assume a symmetric effect of all exogenous variables on the dependent variable. While the prime intention of the current study is to check asymmetric effects of all the exogenous variables on the dependent variable, thus Shin et al.'s (2014) four steps of NARDL approach are followed. Firstly, the oil prices and gold prices are decomposed into their positive and negative partial sums. The decomposition regression is taken as $w_t=\lambda^+ + z_t^+ + \lambda^- z_t^- + \mu_t$ where λ^+ + and λ^- are associated in long-term and z_t is a vector of regressors, decomposed as:

$$z_t = z_0 + z_t^+ + z_t^- \quad (5)$$

where, z^+ and z^- are the independent variables, which are decomposed into a partial sum of negative and positive changes. The following Eq.6, 7, 8, & 9 are the partial sums of positive and negative changes in oil prices, exchange rate and gold prices.

$$lop^{+} = \sum_{i=1}^{t} \Delta lop_i^{+} = \sum_{i=1}^{t} \max(\Delta lop_i, 0) \quad (6)$$

$$lop^{-} = \sum_{i=1}^{t} \Delta lop_i^{-} = \sum_{i=1}^{t} \min(\Delta lop_i, 0) \quad (7)$$

$$lgp^{+} = \sum_{i=1}^{t} \Delta lgp_i^{+} = \sum_{i=1}^{t} \max(\Delta lgp_i, 0) \quad (8)$$

$$lgp^{-} = \sum_{i=1}^{t} \Delta lgp_i^{-} = \sum_{i=1}^{t} \min(\Delta lgp_i, 0) \quad (9)$$

In the subsequent stage t in Eq.4 is supplanted by LOP^{+}, LGP^{+} LOP^{-} and LGP^{-} variables. In this way, formulation of nonlinear ARDL (hereafter NARDL) is completed:

$$\Delta lsp_t = \theta + \sum_{k=1}^{P1} \theta_k \Delta lsp_{t-k} + \sum_{k=1}^{P2} \theta_k \Delta lexr_{t-k} + \sum_{k=1}^{P3} \theta_k \Delta lop^{+}_{t-k} + \sum_{k=1}^{P4} \theta_k \Delta lop^{-}_{t-k} + + \sum_{k=1}^{P5} \theta_k \Delta lgp^{+}_{t-k} + \sum_{k=1}^{P6} \theta_k \Delta lgp^{-}_{t-k} + \lambda_1 lsp_{t-1} + \lambda_2 lexr_{t-1} + \lambda_3 lop^{+}_{t-1} + \lambda_4 lop^{-}_{t-1} + \lambda_5 gold p^{+}_{t-1} + \lambda_6 gold p^{-}_{t-1} + \mu_t \quad (10)$$

Furthermore, Shin et al. (2014) also suggested that the Pesaran et al's. (2001), bounds testing approach is fully functional for equation (10). When we add the negative and positive partial sum of oil prices and gold prices in the model (4) it becomes nonlinear ARDL, while without negative and positive series of said variables it remains linear ARDL

DATA AND EMPIRICAL RESULTS

Data

The annual data, covering a time span of 1990-2016 has been used to examine the asymmetric effect of gold price, oil prices, and the exchange rate on stock market performance. Stock market performance (SP) is calculated as aggregate market capitalization. Gold prices (GP) are calculated as rupees per 10 grams of yearly average. The data on stock market performance and gold prices are taken from statistical supplements of the State Bank of Pakistan. Official Exchange Rate (EXR) is extracted from the World Bank database recognized as WDI (World Development Indicators). Oil prices (OP) are measured by spot crude prices and are taken from the world energy survey. All variables are taken in log arithmetic form to calculate elasticities and data normalization. The descriptive statistics are reported in Table 1. Mean of the exchange rate and oil prices are lesser than stock market performance and gold prices.

Exchange rate, oil and gold prices indicate that there is minimal variation in the data as compared to stock market performance. The Jarque-Bera test provides evidence of data normality since the probability magnitudes of all considered variables are greater than 1% level of significance (0.322334, 0.270322, 0.241057 and 0.200094 > 0.01) for stock market performance, exchange rate, gold and oil prices respectively.

Table 1. Descriptive Statistics

	LSP	LEXR	LGP	LOP
Mean	5.550886	1.595459	3.775032	1.491427
Median	5.579616	1.674137	3.695961	1.433830
Maximum	6.880154	2.020233	4.451812	2.037741
Minimum	3.818424	0.995635	3.196176	1.086696
Std. Dev.	0.925794	0.309790	0.399257	0.301265
Skewness	-0.226222	-0.299548	0.384914	0.518269
Kurtosis	1.857699	1.823023	1.857927	1.965167
Jarque-Bera	2.264336	2.616286	2.845447	3.217938
Probability	0.322334	0.270322	0.241057	0.200094

Unit Root Tests

Traditional co-integration tests can only be applied if all the variables are integrated at the same order. However, NARDL can be applied if either all the variables are purely stationary at I(0), I(1) or I(0) & (1) except I(2) (Dhaoui & Bacha, 2017; Ibrahim, 2015; Ilyas et al., 2010). ADF, PP and KPSS tests are applied to ensure that all the considered variables are not I(2). The compiled results are reported in Table 2. The results of table 2 indicate that all the considered variables are non-stationary at the level I(0) while they became stationary at first order of integration I(I).

Table 2. Unit Root Tests Results

Tests	LSP	LEXR	LOP	LGP
ADF				
I(0)	-1.317418	-2.578880	-1.106281	0.034485
I(I)	-5.615854*	-4.521955*	-5.702930*	-5.754789
PP				
I(0)	-1.318233	-2.578880	-1.194615	0.034485
I(I)	-5.615104*	-4.486037*	-5.703180*	-5.760521*
KPSS				
I(0)	0.703699**	0.705969**	0.460442***	0.679180**
I(I)	0.114372	0.387383	0.186966	0.133743

*, **and *** depict 1, 5 and 10 % significance level respectively.

Bounds tests are reported in Table 3. The F-statistics test indicates no co-integration in non-linear form of under considered series. Whereas, the error correction term is a useful way to establish a long-run relationship (Banerjee et al., 1998; Kremers et al.,1992).Thus, t_{BDM} statistics are calculated to test the null hypothesis; on long-run relationship (proposed by Banerjee et al., 1998). The t_{BDM} statistics affirmed the long-run relationship among the study variables.

Table 3. Bounds Tests Results

Model	Test statistic	Upper bound	Lower bound	Remark
LSP/(LEXR, LOP, LGP)	F-stats =2.683422	3.67	2.79	Inconclusive
LSP/(LEXR, LOP, LGP)	t_{BDM} = -2.612968	Critical value = 2.38[4]	Conclusive	

F stats indicate the null hypothesis = all coefficients equal to zero.

The estimates of NARDL are reported in Table 4. General to specific approach is adopted to reach final NARDL estimation version. Whereas, insignificant independent variables were eliminated to enhance the estimation accuracy of the dynamic multiplier (Pesaran et al., 2001). We have applied Wald test to examine the long-run ($W_{LR, LGP}$ and $W_{LR, LOP}$) to test the symmetric hypothesis among negative and positive part of concerned variables to validate the suitability of NARDL. Symmetric hypothesis results are reported in Table 5. The results of the symmetric hypothesis accept the alternative hypothesis i.e. $\frac{\beta_1^+}{\beta_p^+} \neq \frac{\beta_1^-}{\beta_p^-}$ asymmetry between negative and positive part of the concerned variables. Furthermore, for the LGP part the long-run Wald test is found 2.284 (P-value = 0.143), whereas for the LOP part, it is found 11.5295 (P-value = 0.0023). Short-run dynamics exits only in case of oil prices. So, the short-run symmetric hypothesis is also tested, which is stated as $W_{SR, LOP}$: $\sum_{i=1}^{l} \Delta lop_i^+ = \sum_{i=1}^{l} \Delta lop_i^-$. The results of the short-run symmetric hypothesis are also reported in Table 5. The Wald test for the LOP part in the short-run is 5.26 (P-value = 0.03). The aforementioned empirical findings provide further evidence that the linear model for the dynamics of gold and oil prices in Pakistan would be undoubtedly model misspecification.

Moreover, we come back towards long-run dynamics which are reported in Table 4. NARDL estimates validate gold prices as significant both positive (LGPPOSITVE) and negative (LGPNEGATIVE) long-run magnitudes. The estimated coefficients on LGPPOSITVE and LGPNEGATIVE are 1.64 and

[4]*The critical value at 2.5 % proposed by Banerjee et al. (1998).*

-2.98 respectively. Consequently, it may conclude that a 1% increase in gold prices results -2.98% declines in stock market performance while a 1% decrease in gold prices results in 1.64% decline in stock market performance but the negative component is statistically insignificant. The empirical findings suggest that positive changes are making greater effect than negative changes.

On the other side, oil prices are statistically significant in both positive (LOPPOSITVE) and negative (LOPNEGATIVE) components. The estimated coefficients on LOPPOSITVE and LOPNEGATIVE are 3.06 and -3.16 respectively. The impact size of the negative component of oil prices is greater than the positive component. The estimate can be interpreted as a 1% increase in oil prices, results, 3.06% increase in stock market performance while a 1% decrease in gold prices results in 3.16% increase in stock market performance. However, the response of stock market performance to exchange rate is statistically insignificant (-1.64 with P-value= 0.27) which suggest that the increase in the exchange rate will decrease in stock market performance. The results of the oil prices suggest that both are helpful to enhance the stock market performance for either positive or negative component of the concerned variables, while gold prices enhance stock market performance in the presence of the positive component only. The diagnostic tests are presented in Table 6.

Table 4. Dynamic Estimation of NARDL Results

Dependent variable	**D(LSP)**			
Impact variable	**Co-efficient**	**Standard error**	**t-Statistic**	**Prob.**
C	1.968150	0.650432	3.025910	0.0057
LSP (-1)	-0.301155	0.115254	-2.612968	0.0150
LEXR (-1)	-0.496297	0.440218	-1.127387	0.2703
LGPPOSITVE (-1)	-0.897826	0.387028	-2.319792	0.0288
LGPNEGATIVE (-1)	0.494599	0.942831	0.524589	0.6045
LOPPOSITVE (-1)	0.924441	0.302394	3.057075	0.0053
LOPNEGATIVE (-1)	-0.953199	0.339726	-2.805786	0.0096
DLOPPPOSITVE (-1)	-1.148698	0.497242	-2.310140	0.0294
DLOPNEGATIVE (-1)	0.581804	0.375022	1.551384	0.1334
Long-run impact				
Lgp^{+}	-2.98*	Lop^{+}	3.06*	
Lgp^{-}	1.64	Lop^{-}	-3.16*	
LEXR	-1.64			

L shows long-run and subscript "+" and "–" depicts the positive and negative component, * shows 1% significance level.

Table 5. Symmetric Hypothesis

Symmetric Hypothesis					
Long-run	**Wald Stats**	**Prob.**	**Short-run**	**Wald Stats**	**Prob.**
$W_{LR, LGP}$	2.284	0.143	$W_{SR, LOP}$	5.26	0.03
$W_{LR, LOP}$	11.5295	0.0023			

Long-run symmetric hypothesis: $\frac{\beta_1}{\beta_0} = -\frac{\beta_2}{\beta_0}$ and $\sum_{i=1}^{l} \Delta lop_i^+ = \sum_{i=1}^{l} \Delta lop_i^-$ short-run symmetric hypothesis:

Table 6. Diagnostics Tests

Diagnostics		
R^2	0.40	
DW-statistic	2.17	
Diagnostic tests	**Test stats**	**Prob.**
X^2_{Ramsey}	2.69	0.050
$X^2_{\text{Normality}}$	0.68	0.71
X^2_{Hetro}	0.97	0.47
$X^2_{\text{Serial correlation}}$	1.44	0.25

Brown et al. (1975), recommended CUSUM (cumulative sum) and CUSUMSQ (the cumulative sum of squares) tests to validate long-run coefficient's stability. Figure "A" depicts that plots of CUSUM and CUSUMSQ statistics are inside the critical bounds at 5 % significance level. This concludes that all estimated coefficients are stable.

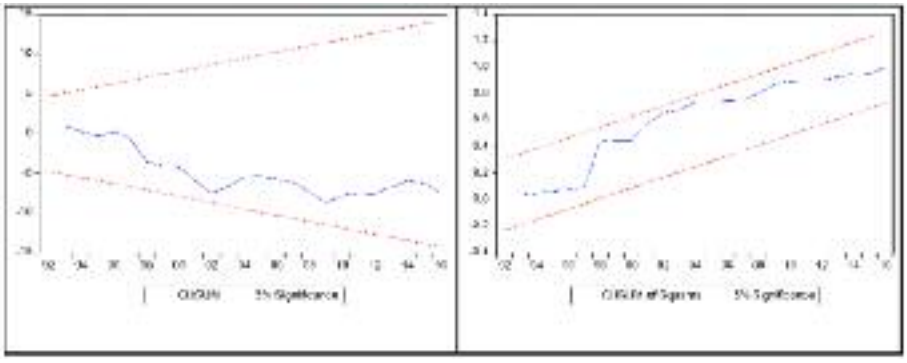

Figure A. Plot of CUSUM and CUSUMSQ

SUMMARY AND CONCLUSION

This paper explored the dynamics among gold prices, oil prices and stock market performance, using Pakistan annual data. The time series data covers the time span from 1990 to 2016 and takes into account the exchange rate, gold prices, stock market performance and oil prices. The

empirical outcomes of the study contribute to prior literature by utilizing an asymmetric ARDL approach recently developed by Shin et al. (2014), which provides both possible asymmetric short and long-run dynamics. The empirical estimates affirm the asymmetric association between gold, oil prices and stock market performance. In the short-run dynamics, estimates indicate a significant asymmetric effect of oil prices.

Moreover, this investigation suggests that ignoring intrinsic asymmetries may lead to the misrepresentative implication in the case of stock market performance. The achieved suggestion of asymmetry could be of key prominence for more effective policy-making and forecasting in the Pakistan stock markets. For future research perspective, our paper results provide hints of possible dimensions. Firstly, the short and long-run asymmetry arise in the oil prices and creates increment on stock market performance, which is statistically significantly related to the stock market, thus it likely points out market forces in the Pakistan stock market. Therefore, policymakers may pay consideration directly to stock market forces and powers. Secondly, this investigation can further be organized with high-frequency data set to get more reliable policy implications.

APPENDIX

Why Nonlinearities /Asymmetries?

Ramos, Veiga, and Wang (2012), suggested that because of the change in oil prices, stock markets' behavior is asymmetric. The companies can transfer the burden of price increase to customers due to the fact that the company has monopolistic power in the industry or the demand does not change in response to increase in prices (Ramos & Veiga, 2013). Both facts explain the reason that why an increase in oil prices affects more than the decrease in the stock return of the oil and gas industry. The literature on the nexus between stock prices and exchange rate suggests a linear effect. It proposes that an increase or decrease in exchange rate affect symmetrically on stock prices. When believing a positive nexus, an increase in local currency destroys stock prices of the country, whereas a decrease in currency may augment stock prices at the same time with almost similar magnitude. However, in reality, this may not always be correct because technically speaking, considering the magnitude and signs both increase and decrease in the exchange rate should affect differently on stock prices. An asymmetry may appear in two shapes i.e. magnitude and sign. On one hand, asymmetry in magnitude implies that various industries and countries react differently to a degree of change in exchange rates. On the other hand, asymmetry in sign entails that industries and countries respond differently (i.e. positively or negatively) towards increase or decrease in exchange rates.

For a company, for instance, when a country's currency appreciates, it leads to a decrease in raw materials imported from abroad. As a result, firms' production costs decrease and profits increase, which eventually lead to an increase in stock prices. Similarly, when a country's currency depreciates, input costs increase and results in the decrease in stock prices. For the purpose of maintaining market share, the companies, however, can keep the same prices of their goods either by bearing the increased cost burden through cutting their profit margins or by increasing prices as a part of increased input costs, thereby, shifting some burden to the customer and retaining the market share. Moreover, there also exists an asymmetric relationship between gold and stock prices (Akgül, Bildirici, & Özdemir, 2015; Choudhry, Hassan, & Shabi, 2015). We suggest two key rationales for a nonlinear association between variables. Second, structural breaks, as well as asymmetric behavior resulting from bankruptcy or major credit incidents, are kind of non-linearities which frequently affect the dynamics of the market, specifically when sample period includes financial crisis such as the global crisis of 2007 and 2008 (Raza et al., 2016).

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HIGH PERFORMANCE AND ABUSIVE SUPERVISION: COMPARISON BETWEEN ORGANIC AND MECHANISTIC WORK STRUCTURES

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ABSTRACT

Individuals are the intellectual capital of an organization and the driving force of a company. It is their treatment which is of the prime importance that leads to their retention for long time. Thus, management should focus on improving the relationships between managers and their respective subordinates. This research investigates the factors which lead to abusive behavior of managers. One such factor is the high performance of subordinates which posits a threat to their hierarchy, thus managers involve in abuse. Furthering the study, the role of mechanistic and organic work structures has also been measured. This study was carried out in Karachi, Pakistan and a comparison was made between the mechanistic work structure of a government agency and organic structure of a software house. Total of sixty employees and their respective supervisors were taken as sample of the study. It was found that organic structures are more conducive for abuse as compared to mechanistic structures, where managers are socially dominant and exert power over resources. From this study the human resource professionals can gain insight into the effect of work structures on employees' performance. It is important for organizations to highlight and identify abuse even if it is subtle or done indirectly by the supervisors for the wellbeing of employees and goodwill of companies. The paper corroborates results from previous studies. A novelty in the study is its attempt to use the work structure as a moderator and the findings highlight the likely impact of organic versus mechanistic structures which have not been addressed previously.

Keywords: *Performance, Work Structure, Organic Structure, Mechanistic Structure, Abusive Supervision.*

INTRODUCTION

Abusive Supervision is a curse in an organization when supervisors use their right in an otherwise improper manner to control employees and abuse them. Majority of the literature in the recent past has given attention to the harmful and destructive outcomes of abusive supervision (Tepper, 2007). Individual variables such as job dissatisfaction, emotional exhaustion, psychological distress, intention to quit, workplace deviance, work withdrawal, aggression and creativity have been associated with abusive supervision in the past. While few studies have been conducted in which situational variables such as; stress, conflict, injustice, and supervisor characteristics such as; family history of abuse, emotional intelligence, machiavellianism and self-control have been studied, while subordinate characteristics such as, negative affect, narcissism, hostile personality style, and core self-evaluation, have been analyzed (Martinko, Harvey, Brees, & Mackey, 2013; Burton & Hoobler, 2011; Martinko, Harvey, Sikora, & Douglas, 2011; Aryee, Chen, Sun, & Debrah, 2007; Tepper, Duffy, Henle, & Lambert, 2006).

There is a possibility that subordinates own behavior causes the supervisor to treat him in an abusive manner. This idea resonates to the theory of victim precipitation and few studies have validated this hypothesis that the subordinate behaviors also trigger abusive supervision. Few studies have studied this phenomenon including, Walter, Lam, Van der Vegt, Huang, and Miao (2015), which demonstrated that supervisors are involved in abusive behaviors with their subordinates, if their subordinates are perceived to be low performing individuals. They concluded that these subordinates further reduce their performance as a response to the abusive behavior by their superiors. Tepper, Moss, and Duffy (2011), also concluded that supervisors treat their employees in an abusive manner if their performance is low. The same results have been found by Walter et al. (2015), in their research conducted in a controlled environment. On the contrary, latest researches conducted by Walter et al. (2015); Kim and Glomb (2014); Jensen, Patel, and Raver (2014); and Tepper, Duffy, and Breauz-Soignet (2012), found that even high performers induce supervisors to treat them abusively. Several theories have given the premise of abusive supervision such as victim precipitation theory, conservation of resources theory, moral exclusion theory and social dominance theory.

This research focuses on both victim precipitation theory and the social

dominance theory similar to Khan, Moss, Quratulain, and Hameed (2016), which focuses on the fact that supervisors who have high social dominance, feel threatened by high performers and this induces them to treat the high performers with abuse. If the supervisor has a high level of social dominance, he desires more power and status in the organization, that would conflict with the new passionate employee who is a high performer, because he may pose a threat to his position and the status quo (Duckitt, 2001). The supervisors perceive high performing employee, capable of achieving equal or even higher status based on his high performance, specifically if he might get a prominent position. Thus, the supervisors protect their socially dominant image by victimizing the subordinates (Shao, Resick, & Hargis, 2011).

Several studies on performance and abusive supervision have focused on moral exclusion (based on ethnocentric views of the groups), and victim precipitation theory (based on the fact that subordinates arouse the abused due to their low performance). Both the theories explain the negative or indirect association between performance and abuse. On the contrary, social dominance theory explains a positive approach towards the explanation of high performance and abusive supervision (Tepper et al., 2017; Khan et al., 2016; Walter et al., 2015). Therefore, social dominance is taken as a the control variable in this study, such that the supervisor's evaluation of subordinate is high, and it will threaten his position in the organization if he has high social dominance which leads to abusive supervision. The model is similar to Khan et al. (2016), with an exception of a moderating variable, the work structure, and the strength of the entire mediated model is dependent on the moderator. This research tests the mediation of perceived threat to hierarchy between high performers and abusive supervision, by hypothesysing that work structures (mechanistic and organic) strengthen this relationship.

Figure 1. Theoretical Framework

LITERATURE REVIEW

Abusive Supervision

Abusive supervision is referred to the degree to which supervisors involve in persistent hostile verbal and non-verbal behaviors, other than physical harm (Huang & Miao, 2015). It is a subjective assessment which might vary but usually includes using offensive names, yelling or screaming at someone with disagreement, threatening to fire, concealing information, staring someone aggressively, treating them silently, and humiliating a worker in front of staff (Keashly, 1997).

Several features create durability in abusive relationships, firstly; the targets of abuse feel powerless to take any action, they may be financially dependent on the abusive supervisor, they fear the uncertainty that will come with the separation even more than the abuse, the supervisor combines the abusive behavior with normal behavior which reinforces an individuals expectation that the abuse will end. Secondly, many times the supervisors involved in abuse, do not recognize or take responsibility for their behavior, rarely modify, and many times identify it as non-abusive (Khan et al., 2016).

Performance and Abusive Supervision

Tepper et al. (2011), conducted the pioneering research on this specific concept and utilized both moral exclusion and victim precipitation theory to establish the relationship between subordinate's poor performance and supervisor's abusive behavior. Moral exclusion theory states that, within the confines of justice, there is a psychological limitation which separates people into categories that are either entitled to a fair treatment or deprived of it. People who perceive the ones as belonging to the less entitled group are likely to treat them with hostility and refer them as morally excluded (Opotow, 1990). Moral exclusion theory also reflects upon the fact that people deserve fair treatment based on their perceived utility (Ibid). Poor performers can thus be categorized as unworthy of fair treatment and hence be abused by the supervisors based on their perceived low utility (Tepper et al., 2011). The victim precipitation theory examines individual dispositions that lead to hostile reactions from supervisors (Elias, 1986). Poor performance of subordinates frustrate and annoy their supervisors which further provokes them to abuse the subordinates. Supervisors select these poor performers as a target as they are apparently weak, vulnerable and susceptible to threat (Tepper et al. 2011). Studies on performance and abusive supervision which have used moral exclusion and victim

precipitation theories have explained the indirect or negative association between low performance and abuse, while social dominance theory explains a positive approach towards the explanation of high performance and abusive supervision (Khan et al., 2016; Walter et al., 2015; Tepper et al., 2011).

According to social dominance theory, if supervisor has a high level of social dominance, he will desire more power and status in the organization that would conflict with the new passionate employee who is a high performer because he may pose a threat to his position and status quo (Duckitt, 2001; Pratto, Stallworth, Sidanius, & Siers, 1997).

The supervisor will perceive this employee to be capable of achieving equal or even higher status based on his high performance specifically if he might get a top management position or a new opportunity (Shao et al., 2011). Therefore, the supervisor would protect his socially dominant status by victimizing the subordinate. This research focuses on victim precipitation and social dominance theory similar to Khan et al. (2016). Thus, the first hypothesis is as follows;

Hypothesis 1: High performance increases abusive supervision.

Performance and Perceived Threat to Hierarchy

Abusive supervision not only undermines individual, or departments' performance but also disrupts the smooth functioning of an organization and its profitability. The threats that produce abusive supervision may come from provocation, mistreatment by top management, or threat to the status quo (Tepper, Simon, & Park, 2017). High performers may pose a challenge to their supervisor's current position in the organization and threaten their hierarchical status and authority. It is threatening to have subordinates who outperform their supervisors. This high performance undermines the supervisor's authority and status. Also, the resources given to the high performers seem unjustly distributed (Tedeschi & Felson, 1994).

Thus, supervisors who want to sustain and retain their dominant position in the organization may strategically victimize high performers to reinstate the order. The purpose of supervisors is then to strategically victimize a high performer in order to maintain his social dominance in the organization which has threatened his position and status. This hierarchical loss is important because it includes chances for promotion, recognition from, and accessibility to, the top management. The supervisors then

exchange this loss in return for injustices done to the individuals and punish them for getting the resources the don't deserve (Tedeschi & Felson, 1994). In this regards, the second hypothesis is as follows:

Hypothesis 2: High performance increases perceived threat to hierarchy.

Perceived Threat to Hierarchy and Abusive Supervision

According to social dominance theory, hierarchy-based structures are constructed to promote the desire to differentiate status and power among groups (Pratto, Sidanius, & Levin, 2006; Sidanius, Pratto, Van Laar, & Levin, 2004). These structures also promote the superiority of dominant groups as compared to the inferior groups. Dominant groups have privileges and access to better resources as compared to inferior groups. Supervisors perceive a threat when they feel that the actions and values of the inferior group will harm their status in the current hierarchy. According to Davis and Stephan (2011), threat is felt when there is a perceived possibility of physical, emotional or psychological damage and there aren't enough resources to cope with that uncertainty. Supervisors who experience this threat then involve in actions to reduce it by exibiting abusive behavior and ill-treatment directed towards the perpetrator who was responsible for the threat in the first place. Supervisors see these offenders as inferior thus feel it is right and just to treat them badly (Esses, Jackson, & Armstrong, 1998). The third hypothesis is thus derived as follows:

Hypothesis 3: Perceived threat to hierarchy increases abusive supervision.

Mediation of Perceived Threat to Hierarchy between Performance and Abusive Supervision

Supervisors who have high social dominance are aware that they hold a higher position in the organization as they are part of management and thus would always want to maintain their status in the current hierarchy by any means. Therefore, the higher performance of a subordinate will be construed as a threat to his current position. Supervisor feels that his subordinate will surpass him and become his boss or at least he will get hold of more resources which are only the privileges of the supervisor due to his greater position. The supervisor responds by using ill-treatment or abusive behavior towards his high performing employee. Various studies have concluded that dominant groups react aggressively towards inferior groups when they pose a threat to their hierarchical status and authority (Davis & Stephan, 2011). Furthermore, empirically it has been identified that people diminish the root cause of threat and target the high performer.

Thus, the mechanism through which high performance leads to abusive supervision is the threat to hierarchy. Hence it is hypothesized that threat plays is an important mediator in the relationship between the high performance of individuals and abusive behavior of supervisors. The fourth hypothesis to test the mediation of perceived threat to hierarchy between performance and abusive supervision is as follows:

Hypothesis 4: Perceived threat to hierarchy mediates the relationship between high performance and abusive supervision when the supervisor's social dominance is higher.

Moderation of Work Structures in Performance and Abusive Supervision

This study postulates that the work structures moderate the mediated relationship between high performance, threat to hierarchy and abusive supervision. Work structures are defined as how the tasks and responsibilities are divided among the organizational members and how are they grouped to form a combined whole. Work structures are divided into two extreme degrees; namely mechanistic and organic structure (Ambrose & Schminke, 2003).

Mechanistic structures illustrate the work of Weber (1947), who gave the notion of ideal bureaucracy. They are characterized by high task specialization, centralization, high standardization, high formalization, top-down communication and rigid control and authority. On the contrary, organic structures have the features of low task specialization, decentralization, low standardization and formalization, open communication channels, and flexible control and authority (Slevin & Covin, 1997).

Abusive supervision tends to excel in organizational structures which are more mechanistic rather than organic, as the organic structures tend to be constraining the abusive supervision. Whereas, the mechanistic structures support the power difference between management and employees and thus emphasize the status of the supervisor as compared to his subordinates. This tolerance and acceptance of difference promotes dominance and conformity, which fosters overbearing and abusive supervision.

A comparison between bureaucratic (mechanistic), and adhocratic (organic) organizations was made by Ashforth (1994), in which he identified that centralization versus decentralization is the key factor in

stimulating abusive supervision in the organization. Centralized decision-making gives courage to the supervisor to involve mistreatment of his subordinates. He further stated that decentralization gives less autonomy and acceptance for abusive supervision. Likewise, Salin (2003), also observed that institutionalized bullying tends to exist in organizations where there are great power inequities.

The Conservation of Resources Theory (COR) conceptulizes that organic work structures act as a resource for subordinates and does not let the supervisors involve in abusive supervision. Particularly, decentralized decision making in organic structures help to mitigate the power imbalance between juniors and seniors, thus reducing the tendency of seniors to be insulting and abusive. Organic structures provide a conducive and a healthy environment for high performers and they can excel without any fear of unnecessary abuse by the supervisors. While the mechanistic structures encourage abusive supervision. Hence, it is expected that work unit structures tend to moderate the relationship between the high performance of subordinates, threat to hierarchy and abusive supervision.

This research has proposed a contrary idea to the study of Aryee, Sun, Chen, and Debrah (2008), in which work structures moderated abusive supervision and contextual performance and it was found to be significant. Conversely, this study has tested the reciprocal impact of Aryee et al., (2008), i.e. work structures (particularly mechanistic) moderate the mediated relationship of high performance of subordinates, hierarchial threat and abusive supervision. The final hypothesis of this study tests the moderated mediation of organic and mechanistic structures with respect to the entire model, which is as follows:

Hypothesis 5: Work unit structures moderate the relationship between abusive supervision and high performance.

RESEARCH METHODOLOGY

This study is conducted on the new employees who are considered to be more passionate and therefore their performance is higher. It is assumed that the new high performer will be treated badly by his/her supervisor for threatening their status in the organization and this will be higher in mechanistic work structures as compared to organic work structures. Two organizations were taken to form a comparison between organic and mechanistic work structures; one is a government agency and the other

one is a software house in Karachi, Pakistan. The study is a comparative case study of the two organizations. Twenty-two subordinates and their respective supervisors were taken from the software firm which had perceptions of organic structures from employees while thirty-eight subordinates and their respective supervisors were taken from a government agency which had perceptions of mechanistic structures from their employees. Total sixty employees and their respective supervisors were taken in the study. It was assumed that a government firm must be bureaucratic, centralized and have predetermined rules and regulations to guide the employee behavior. While a privately owned software house has more flexibility, decentralization, and fewer rules and regulations. The names of the firms are not disclosed for anonymity. Social dominance was treated as a control variable, thus only those respondents were taken, who were high on dominance.

Measures

Abusive supervision was tested using the 15 items scale (Tepper, 2000), with 0.692 Cronbach Alpha. Work unit structure was measured using 7 items divided by mechanistic or organic characteristics (Khandwalla, 1977), with 0.848 Cronbach Alpha. Perceived threat to hierarchy was measured using 3 items (Khan et al., 2016), with Cronbach Alpha of 0.711. Lastly, subordinate performance was tested using a 4 items scale (Liden, Wayne & Stilwell, 1993), with Cronbach Alpha 0.735. Social dominance orientation was measured by 16 items (Pratto, Sidanius, Stallworth, & Malle, 1994), and was used as a control variable, with a Cronbach Alpha of 0.629. Each variable was measured on a different scale but was categorized from 1 to 5 and the questionnaire was divided into two parts; one to measure subordinate's perceptions (abusive supervision and work structures), and the other to measure supervisor's perceptions (high performance, perceived threat to hierarchy and social dominance).

RESULTS

Table 1 represents the correlations, reliability statistics, item numbers, mean and standard deviations of all the variables in the model. Factor analysis was applied on all the items to check the structure of all the items; few items were removed from the study because their coefficients had values less than 0.5 (AB2, AB3 AB13, STR4, SD1, SD2, SD3, SD4, SD5, SD15, TTH2). Table 2 shows that the total variance explained by 5 factors was 76.94 %. Factors were fixed because the scale was adapted from previous studies. KMO was 0.630 while Bartlett test of Sphericity was

significant at 0.000 level. Table 3 shows the retained items amongst all the variables with coefficients greater than 0.5.

Table 4 shows the overall mediation analysis between high performance of subordinate, threat to hierarchy and perceptions towards abusive supervision. Social Dominance (SD) has a high correlation with work structures only. Supervisor evaluation of performance, perceptions of abusive supervision, and perceived threat to hierarchy have a high correlation with all variables except work structures. Work structure has no correlation with any variable except social dominance.

Table 1. Descriptive Statistics

	Mean	SD	Items	Reliability	1	2	3	4	5
AS	3.2331	.58684	15	0.692	-	-	-	-	-
WS	2.6043	.95370	7	0.848	-.055	-	-	-	-
TH	2.4263	.92178	3	0.711	-.201	0.635***	-	-	-
P	3.1180	1.08648	4	0.735	-.087	0.574***	0.402**	-	-
SD	3.2954	.39418	16	0.629	0.42**	.038	.025	0.161	-

N=60; P<0.000***, p<0.001**, p<0.05*

Table 2. Total Variance Explained

Component	Total Variance Explained		
	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	5.374	24.426	24.426
2	3.707	16.117	40.542
3	2.834	12.880	53.422
4	2.841	12.354	65.776
5	2.568	11.165	76.941

Harman Single Factor test was carried out to identify any common method biasness in the data set. All the items were entered and only one factor was fixated to know how much variance is explained by each factor. Table 4 in the appendix shows only one factor explained as 18.525 % of the data on 34 items retained after the initial exploratory factor analysis. This shows that the common method variance or biasness was not a major threat in the data set. KMO value is > 0.5 (0.595) and significance value of Bartlett's test of sphericity is less than 0.05.

Table 3. Rotated Component Matrix

	Rotated Component Matrix				
	Components Extracted				
Items	**1**	**2**	**3**	**4**	**5**
AB9	.787				
AB8	.735				
AB7	.680				
AB12	.658				
AB10	.647				
AB14	.645				
AB1	.614				
AB15	.613				
AB4	.573				
AB6	.570				
AB11	.526				
AB5	.522				
STR1		.776			
STR2		.707			
STR3		.640			
STR5		.571			
STR7		.536			
STR6		.508			
SD12			.780		
SD9			.725		
SD14			.713		
SD11			.646		
SD10			.639		
SD13			.551		
SD16			.546		
SD7			.688		
SD8			.556		
EP1				.813	
EP4				.743	
EP2				.719	
EP3				.576	
TTH3					.733
TTH1					.624

Table 4. Harman Single Factor Test

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.299	18.525	18.525	6.299	18.525	18.525
2	4.413	12.979	31.504			
3	2.750	8.089	39.592			
4	2.414	7.101	46.694			
5	2.289	6.732	53.425			
6	1.630	4.794	58.219			
7	1.353	3.978	62.198			
8	1.292	3.800	65.998			
9	1.264	3.719	69.716			
10	1.118	3.287	73.004			
11	.980	2.884	75.887			
12	.942	2.772	78.659			
13	.812	2.388	81.047			
14	.723	2.127	83.174			
15	.712	2.093	85.267			
16	.638	1.876	87.143			
17	.551	1.621	88.764			
18	.472	1.390	90.154			
19	.420	1.236	91.390			
20	.408	1.200	92.590			
21	.384	1.128	93.718			
22	.342	1.005	94.723			
23	.291	.856	95.580			
24	.251	.739	96.319			
25	.225	.662	96.981			
26	.179	.527	97.508			
27	.175	.515	98.023			
28	.152	.447	98.471			
29	.139	.409	98.879			
30	.119	.349	99.228			
31	.096	.283	99.512			
32	.073	.216	99.728			
33	.067	.198	99.926			
34	.025	.074	100.000			

Extraction Method: Principal Component Analysis.

Table 5. Mediation Analysis

	Coefficient	se	t	p	LLCI	ULCI
Constant	.3543	.2944	1.2035	.2336	-.2348	.9435
THREAT	.4986	.1015	4.9117	.0000	.2955	.7017
EP	.3336	.0861	3.8738	.0003	.1613	.5059

Table 6. Indirect effect of X on Y

	Effect	Boot SE	BootLLCI	BootULCI
THREAT	.1704	.0714	.0643	.3538

The overall Mediation Analysis show that supervisor evaluation of performance increases the threat to the supervisor's hierarchy which in turn increases subordinate's perceptions of abusive supervision. Table 5 and 6 explain the significance of the relationship between the variables. The lower and upper bounds show that there is a significant effect. Also, there is a 17.4% effect of independent variable on dependent variable via a mediator.

Table 7. Overall Mediated Moderation Analysis

STRUCTURE	Effect	SE	t	p	LLCI	ULCI
2.6714	.2423	.1149	2.1084	.0396	.0120	.4727
3.2551	.3337	.0874	3.8165	.0003	.1585	.5089
3.8389	.4250	.1120	3.7955	.0004	.2006	.6494

The overall mediation moderation analysis shows that supervisor evaluation of performance increases the threat to supervisor's hierarchy which in turn increases subordinate's perceptions of abusive supervision which is significant at all levels of the moderator (structure). Table 7 shows the overall mediated moderation analysis. The lower and upper bounds show that there is a significant effect. While if we compare the mechanistic and organic structures, the results are significant in organic structures rather than mechanistic structures. As organic structures allow subordinates to achieve higher performance targets which may pose a threat to the hierarchy of their superiors. This, in turn, triggers abuse from the supervisors. While in mechanistic structures, such as government firms, firstly, employees are not high performers and secondly, they do not pose a threat to their superiors as their superiors already are stable on their positions and anyone can get promotion via nepotism, political source or reference and bribe. Therefore, abuse is not prevalent in government firms and it's not so frequent as well (see table 8 and 9). Table 10 shows the hypotheses assessment summary of the study and the relevant status for each respective hypothesis.

Table 8. Mechanistic Structure Mediated Moderation Analysis

STRUCTURE	Effect	SE	t	p	LLCI	ULCI
2.3143	.1749	.1626	1.0753	.2957	-.1655	5152
2.6140	.2493	.1654	1.5075	.1481	-.0969	5955
2.8600	.3105	.2118	1.4658	.1590	-.1329	.7538

Table 9. Organic Structure Mediated Moderation Analysis

STRUCTURE	Effect	SE	t	p	LLCI	ULCI
3.2979	.3365	.16052	.0963	.0438	.0099	.6632
3.6241	.3844	.10823	.5523	.0012	.1642	.6046
3.9502	.4323	.1456	2.9682	.0055	.1360	.7286

Table 10. Hypotheses Assessment Summary

Hypotheses	p-value	Status
H1: High performance increases abusive supervision.	.0003	Accepted
H2: High performance increases perceived threat to hierarchy.	.0001	Accepted
H3: Perceived threat to hierarchy increases abusive supervision	.0000	Accepted
H4: Perceived threat to hierarchy mediates the relationship between high performance and abusive supervision when the supervisor's social dominance is higher.	.0003	Accepted
H5: Work unit structures moderate the relationship between abusive supervision and high performance (stronger for organic structures).	.0055	Accepted

DISCUSSION AND CONCLUSION

This study replicated the research of Khan et al. (2016), with addition to work structures in the model. This research identified that organic work structures have proved to be significant in affecting the performance-abuse relationship. Subordinates with high performance tend to become the target of their superiors as they pose threat to their positions and status within the organization. Managers in mechanistic organizations seem less caring about their subordinates' performance as performance is not the factor which leads to promotions, instead, political source or affiliations along with bribes or strong references provide career advancement opportunities. Meanwhile, in organic structures, there is a cut-throat competition to survive and sustain. Sustainability of jobs is only possible with better performances in organic structures. Thus, it poses a threat to the well-being of the superior's positions which may be taken over by their successors (most probably their juniors). This study gives an insight into

the challenges faced by subordinates who want to survive, succeed, and sometimes succumb to the abuse of their supervisors to safeguard their future careers.

Managers, thus need to understand that eventually, they need to plan for their successors and high performers do not pose a threat but an opportunity for the well-being of the organization itself. If managers focus on the organization's interests rather than the individual interests, then there will be a more positive work environment. Future studies may focus on the generational patterns; differences in work values and attitudes among the employees and supervisors which lead to abuse.

RESEARCH IMPLICATIONS

This study contributes to the development of work structures and positive antecedents to abusive supervision. The study provides intriguing insights to scholars and practitioners that the context or work structures create a conducive platform for abuse. It is highlighted that government organizations do not have individuals with high performance, as there are no KPI's or employee development path, therefore, they do not pose any threat to their supervisors. For an organic or multinational firm, employees are conditioned in the work environment and the abusive interactions are a reality, thus it is crucial for management to identify inappropriate consequences in interpersonal interactions which can accumulate and lead to disastrous outcomes (Mackey, Frieder, Brees, & Martinko, 2017; Chan & McAllister, 2014). Supervisors must detect and correct misunderstandings with subordinates in the early stages to reduce the damage which can become permanent over time. Furthermore, human resource department must reinforce explicit policies to counter such actions such as creating a feedback channel to report abuse anonymously which must be investigated for further actions (Sutton, 2007). Also, training on proactive and prohibitive behaviors; constructive conflict, and expression must be given to clarify acceptable and unacceptable interpersonal behaviors, which can help supervisors to improve their interactions with their subordinates. Abusive supervision can deteriorate the morale of high performers, and thus those employees which increase profitability will reduce their efforts and instead switch to other organizations. It is costly and a cumbersome process to find high performers, train them and retain them, thus it is important to focus on their well-being for the future of the organization. The findings of this study convey a crucial message to the administrators, managers and academicians alike, especially in the eastern context.

FUTURE RESEARCH

Future research can focus on the role of leadership, organizational culture and team dynamics with respect to abusive supervision (Tepper, Simon, & Park, 2017). Future research can also use supervisor self-reports and objective measurement of high performance of employees i.e. performance appraisal from the HR department. Scholars can also use experimental designs to test the same conceptual model. Other than that difference between the coping strategies of high versus low performers can also give insight into the outcomes and response to abuse. In future studies, the sample size can be increased to provide more generalized results which will enhance this relationship. Further, the role of coworkers in the supervisor-subordinate abusive relationship might also give interesting results. This study can also be applied in different cultures to compare results using Hofstede's cultural profiles.

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SUPPLIER SELECTION CRITERIA IN THE CONTEXT OF CITY GOVERNMENT: EVIDENCE FROM RENOWNED ORGANIZATIONS OF KARACHI CITY

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ABSTRACT

Supplier selection is one of the most important elements of the procurement process which has the ability to influence the performance of the entire supply chain management. Thus, it is considered as one of the major factors in the supply chain strategy in multinational organizations. Contrarily, least attention is given to the subject by the companies originated in Pakistan. Lack of research in this domain is also impairing this issue. Regardless of the importance of the supplier selection subject, the state-owned companies in Pakistan, are specifically, paying least concern towards it. Thus, the purpose of this study is to identify the importance of different factors of supplier selection, by the state-owned enterprises working under the city government of Karachi. In order to simplify the model, researchers predominantly focused on the generic criteria for supplier selection and further included some other variables like HSSE/ ISO policies and flexible contract terms to the research model. Moreover, moderation has also been used in order to replicate the model effectively with the scenario of Karachi. After adoption of the generic model of supplier selection, Hayes model has been used for the analysis of data. The study findings reveal that the organization working under the City Government of Karachi have different criteria and preferences for supplier selection. Hence the research is pervasive in nature and can be adopted by policy makers and technocrats in order to improve the supplier selection process of state-owned enterprises.

***Keywords**: Supplier, Selection Criteria, State Owned Enterprises, Pakistan, Under-Developed Countries.*

INTRODUCTION

Supply chain management is considered as an underdeveloped segment in Pakistan. There has been least concern towards the criterion for the

selection of suppliers and on the development of a strategic alliance with them. Nevertheless, international firms with high repute and stature are more focused towards the issue (Rashid, 2014), as each business entity uses customized supply process regardless to the industry they belong to (Galinska & Bielecki, 2017). Ellram (1990), emphasized that in order to compete effectively, companies have to keep their inventory level low, thus selection of a reliable supplier is one of the most important elements of the business philosophy. This is further supported by Galinska and Bielecki (2017), accentuating that the supplier selection is one of the main components through which company operates, it also helps augment the financial upsurge as well as the market standings of the company.

According to Galinska and Bielecki (2017), there are several ways to evaluate the supplier companies, even many companies today extensively use multiple criteria for supplier evaluation. According to Mwikali and Kavale (2012), the process of supplier selection usually takes considerable time to evaluate the suppliers on several criteria such as the cost of raw material, cost of production, cost associated with quality assessment, personal facilities and organizational goals and others. Gahan and Mohanty (2011), postulated that there is a need for systematic evaluation of the suppliers', regardless of the organization type or industry to which a firm belongs to. Same has been supported by Mutai and Okello (2016), emphasizing that the choice of the supplier should be backed by a structured evaluation of all the potential suppliers. Hibadullah et al. (2014), further clarified the importance of supplier selection by highlighting that the companies must evaluate the supplier performance and place subsequent orders only on the basis of their level of performance.

Procurement in Public Sector Organizations

Erridge (2007), claim that public procurement faces a tradeoff between public interest and logic, where favouring logic can yield most economical advantages, but decisions regarding public procurement are often subject to different political, administrative and regularity objectives (Schapper, Veiga & Gilbert, 2006). Regardless of the level in which the supply chain management process is undertaken, it is one of the most potent factors which can considerably enhance a company's performance (Rashid, 2014).

Abbasi, Sheikh, and Hassan (2015), specified numerous qualitative and quantitative studies to identify the criteria as well as the impact of each criterion used on the firm's performance. Although according to Ittner, Larcker, Nagar, and Rajan (1999), generally, price and cost per unit is

treated as the most suitable criteria for the selection of suppliers, focus on these measures forces the organizations to compromise on quality, which decreases the reliability of purchase and increases the frequency of losses due to delays and miscommunication (Degraeve & Roodhooft, 1999).

Moreover, Rashid (2014) defends the irrational criteria highlighted by Ittner et al. (1999), that to achieve cost-effectiveness in supply chain management, firms prefer price and cost per unit as a yardstick for supplier selection. Findings become complex when impaired with the illustrations of Shiati, Kibet, and Musiega (2014), who emphasized that the multinational firms are somehow more concentrated towards the selection of their suppliers than the regional or national organizations. Subsequently, in the state-owned enterprises, there is no set of attributes for selection of suppliers. It has been observed that there is a dearth of research work linked to the supplier evaluation methods by the state-owned enterprises (Shiati et al., 2014), especially in developing countries like Pakistan (Abbasi et al., 2015). Furthermore, there is a considerable research work available on public procurement (Arshad, 2017), but a minimal evidence is available from the territories of Pakistan, regardless of the indication that dynamics of doing business in emerging economies are different from the developed economies (Singh, Garg, & Deshmukh, 2010; Lynn, 2006).

This research is predominant in providing the base for conducting further research work associated with the optimization of supplier selection process not only in Pakistan but also in other developing countries. Moreover, this research could be a helpful tool for the suppliers to self-assess the set of criteria which is preferred by the state-owned enterprises. Thus, it is optimal to state that the significance of this research has many folds, and this is not only beneficial for the managers and intrapreneurs operating in the state-owned enterprises but also for the suppliers who are in hunt of further business contracts.

THEORETICAL FRAMEWORK

There are more than seventy-five (75) criterion' which can be used to evaluate the suppliers for an organization. These criteria are termed as generic and implemented across the industries as well as in the context of purchase (Ho, Xu, & Dey, 2010; De Boer, Labro, & Morlacchi, 2001; Weber, Current, & Benton, 1991). These criteria (Figure 1) are adapted from Kar (2014); and Kumar Kar & Pani (2014). Kar (2014), indicated that in recent times researchers and practitioners are forced to select the most appropriate set of criteria for supplier selection, which might look generic in nature but suit best to the objectives and

priorities of the company. Study of Obed and Vincent (2014), specified three major criterions for the selection of suppliers i.e. a) Cost of raw material; b) Commitment to provide quality raw material; and c) Flexibility of the contract terms. Similarly, Shiati et al. (2014), presented the generalized framework for the selection of suppliers which include price; delivery; quality; production capacity and location.

Although the most recent criteria which are applicable generically, has been proposed by Żak and Galińska (2017), asserting that the product cost; cost of product delivered; reliability of the delivery; quality of the delivery service and product delivered; quick response (order fulfillment time); timeliness of delivery; market position, image and experience of supplier; economic efficiency of supplier; availability of supplier/ accessibility to the delivery system; and the quality and suitability of delivery fleet are the major benchmarks to be considered for supplier selection. This criterion is also supported by Galinska and Bielecki (2017), endorsing that these are the most adopted yardsticks for the evaluation of suppliers.

SNAPSHOT OF DIFFERENT VENDOR EVALUATION CRITERIA USED ACROSS LITERATURE		
Product quality	Delivery reliability	Warranties
Exporting status	Packaging capability	Intellectual Property rights
Product pricing	Production capability	Technical capability
Management capability	Vendor reputation	Financial position
Labor relations	Service quality experience	Past business records
Reciprocal arrangements	Cultural fitment	Communication barriers
Inventory position	Electronic data interchange	Value-added productivity
Geographical distance	Foreign exchange rates	Trade tariffs
Acceptable parts per million	Service design	Order acknowledgements
Trade restrictions	Buyer's commitment	E-Transaction capability
Documentation	Design capability	Supply variety
Rejection rate during inspection	Dollar value of performance	Purchase order stability
Lead time	Indirect costs	Response flexibility
Innovation	Facility planning	Safety adherence
Domain experience	Exporting status	Conflict resolution systems
Customs duties	Product line diversity	Intimacy of relationships
Quality management	IT standards	Cost reduction capability
Electrical capacity	Judgment	Response time
Total cost of acquisition	Risk perception	Certification and standards
Research and development	Organizational culture	Availability of parts
Sub-component pricing	Regulatory compliance	Self-audits
Rejection from customers	Education level of personnel	Receiving inspection
Billing accuracy	Cost reduction performance	Indirect costs
Data administration	Improvement commitment	Procedural compliance
Service quality credence	Vendor's commitment	Skill level of staff

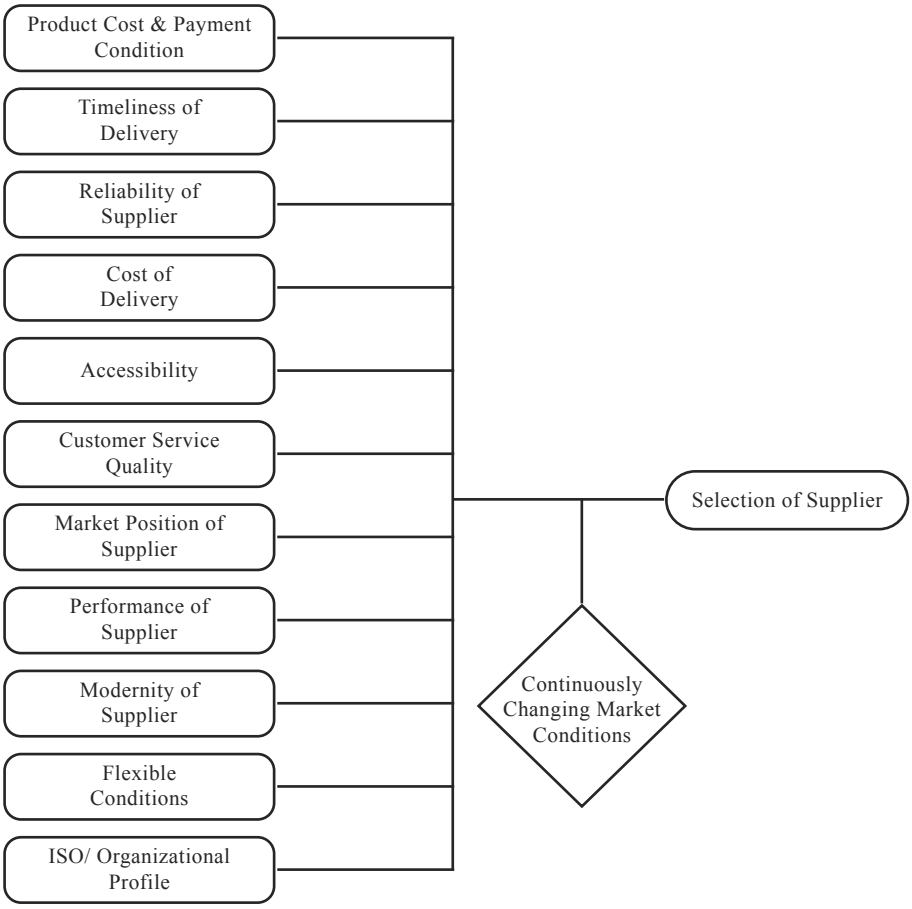
Figure 1. Various Criterions highlighted by Weber et al. (1991), adopted from (Kumar Kar & Pani, 2014).

No.	Major aspects of Suppliers' Evaluation and Selection	Generic Logistics Standard of "7 Rights"	Case Study 1 – Evaluation of LSPs	Case Study 2 – Evaluation of Meat Suppliers
1	Cost of Delivery	Right Cost	Transportation Cost	Cost of Delivery. Financial Conditions
2	Cost of the Product Delivered	Right Cost	(-)	Unit Price of the Meat.
3.	Reliability of Delivery	Right Product. Right Quantity. Right Place.	(-)	Accuracy of Order Fulfilment (No. of Claims/ Month) Risk of Delivery / Exposure to Danger.
4.	Quality of the Delivery Service and the Product Delivered	Right Condition. Right Customer.	Service Complexity and Flexibility. Quality of Human Resources	Flexibility of Supplier. Quality of the Raw Material.
5.	Quick Response. Order Fulfilment Time	Right Time	Delivery Time	Frequency of Delivery.
6.	Timeliness of Deliveries	Right Time	(-)	Timeliness of Deliveries
7.	Market Position, Image, Experience of the Supplier	(-)	Market Experience; Market Share	(-)
8.	Economic Efficiency of the Supplier.	(-)	Fixed Assets Turnover. Sales/ Employee.	(-)
9.	Availability of Supplier. Accessibility to the Delivery System	(-)	Service Complexity and Availability	(-)
10.	Quality and Suitability of the Delivery	Fleet Right Condition	Fleet Quality and Suitability	Quality and Modernity of the Fleet

*Figure 2. Supplier Evaluation Criteria adopted from (*Żak*, 2015).*

RESEARCH MODEL

For the study, generic framework of supplier evaluation and selection proposed by Żak and Galińska (2017), has been adopted which indicates product cost; delivery cost; timeliness of the delivery; and supplier profile/ performance of supplier as the independent variables. Furthermore, to develop a comprehensive research model; flexibility of contract terms (Gahan & Mohanty, 2011; Huang & Keskar, 2007); and the Health Safety, Security, and Environmental Policies (HSSE) (Rashid, 2014), are also taken as independent variables; as these are highlighted as potent variables by Obed and Vincent (2014). Moreover, the pressure of continuous change in market conditions (Mwikali & Kavale, 2012), is taken as the moderating variable in the research model.



Research Model

RESEARCH QUESTION

What are the various criterion which are use by the state owned enterprises (working under the City Government) for the selection of supplier?

LITERATURE REVIEW

Supplier relationship management is treated as one of the most important aspects of the supply chain management, which affects entire supply chain activities and organizational performance (So & Sun, 2010; Terpend, Tyler, Krause, & Handfield, 2008). Thus, selection of the supplier is also termed as one of the most important and multi-faced activity (Wilhelm, 2011; Lazzarini, Chaddad, & Cook, 2001). Selection of the most appropriate supplier results in mitigation of risk, increase in overall firm's performance and fosters a sound connection between the suppliers and the firm. The process might become fast

and easy to handle if the company sets particular criteria for the selection of its supplier(s). Hence, the process is dependent upon the development and selection of a series of criteria for the selection of an optimal supplier (Abbasi et al., 2015).

Subsequently, companies must out weight each criterion separately in order to individually examine its impact on firm's performance in order to develop the final set of its criteria for suppliers' selection (Yahya & Kingsman, 1999). Abbasi et al. (2015), also underlined that companies are involved in process of supplier selection since a long time and now they must shift their focus from selection of supplier to selection of most appropriate supply partner for a long-term association and healthy relationship. Hence, systematic literature has been developed which will highlight different criterion incorporated in the model of research shown above.

Product Cost

Garfamy (2011), implied that the cost is an important factor in supplier selection. Van Weele (2010), suggested that for any sort of supplier selection, one of the important tasks is to choose the most appropriate supplier who can provide the right amount of material at right time, within an acceptable range of price. In order to increase a firm's productivity, it is always preferred to opt for low-cost supply, as it can be linked with the minimization of the production cost (Mwikali & Kavale, 2012). On the other hand, Bhutta and Huq (2002) emphasized on the role of price and highlighted that price is one of the prime factors in the context of organizational buying along with the other factors like quality, service and delivery. Study of Hartley, Duplaga, and Lane (2005), also pinpointed the importance of price in the process of supplier selection and indicated that lower level of prices associated supplier is linked with the improvement of the purchase process.

Sim, Omar, Chee, and Gan (2010), conducted a survey on the manufacturing industry of Malaysia and ranked the cost, quality, and delivery as main components for the supplier selection. Similarly, a survey by Abbasi et al. (2015), from the automobile industry of Pakistan reflected that cost should be considered in the second position in the selection of the suppliers. On the contrary, Pearson and Ellram (1995), pointed out that for the small and medium-sized enterprises, achievement of low pricing is the major objectives in supplier selection and retention process, as the SMEs have limited investment resources.

Cost of Delivery/ Distribution

Mwikali and Kavale (2012), asserted that the companies must keep the delivery costs into account which will incur for the delivery of the supplies. Furthermore, Beamon (1999), stipulated that the consideration of price as well

as the cost of distribution must be included in the criteria of supplier selection. A similar indication is found in the research by Wilson and Collier (2000), which postulated that the selection of the supplier must be based upon the delivery rate of the raw material. This is also elaborated in the model proposed by Palaka, Erlebacher, and Kropp (1998), which indicate the consideration of direct variable costs, congestion cost or work-in-process inventory holding cost, and lateness penalty costs for the make-to-order system.

Reliability of Delivery

Vonderembse and Tracey (1999), postulated that continuous evaluation of suppliers must be an essential part of the supplier selection process. The assessment is required in order to ensure the timely availability of raw materials. Research further particularized that supplier monitoring is also required in order to renew order to the most suitable supplier. This is also useful when a company has multiple suppliers for any particular order and through this practice, alternative supplier(s) might also be selected at the time of need.

Research of Ernst, Kamrad and Ord (2007), further highlighted that unreliability of suppliers might result in an intensification of supply chain risks. Thus, it is better to believe that the reliability of suppliers is one of the most important variables for the selection and preference of the suppliers (Mukherjee, 2016). These findings are supported by Yang (2016), who highlighted that the criteria for loose selection of supplier should be at least seventy percent, that might be raised up to ninety percent for strict evaluation. On the other hand, Nurdiyana et al. (2016), implied that best delivery performance can be gauged through order fulfilment rate, the percentage of late delivery, lead-time, and location, type of transportation, shipping packaging standards and delivery of products in good condition.

Quality of Delivery Service and Product Delivered

One of the most initial works on the topic of supplier selection emphasized quality as the highest ranked criterion (Dickson, 1966). Cheraghi, Dadashzadeh and Subramaniam (2004), proposed that the quality is the variable whose impact lasts longer than price and delivery, hence it is treated as the topmost criterion for the selection of the supplier. Research even treats this criterion as the major source behind the development of a long-term relationship between companies and suppliers (Rashid, 2014).

According to Nurdiyana et al. (2016), quality can simply be defined as the degree in which customer requirements are met. In order to examine the quality, organizations must examine the percentage of rejection of parts

supplied by different suppliers. Shiati et al. (2014), stressed that the inadequate quality dimensions result in the rejection rate and also predicts the probability of a defect in the upcoming supply of products.

Timeliness of the Delivery

Żak (2015), pointed out that delivery deadline is one of the prime factors in the selection of the supplier(s) and is one of the threshold criteria. Delay in delivery leads to a delay in production and hence ultimately result in a decrease of overall satisfaction level of the customers (Vonderembse & Tracey, 1999).

Mwikali and Kavale (2012), established that the lead time is the terminology to define the time between the order placement and delivery of the material to the company. This means that the supplier rating will tend to be higher if the lead time is shorter. Moreover, the study of Beamon (1999), asserted that higher lead time prompts that the supplier is trying to serve more customers than its capacity to serve. Moreover, the study of Ray and Jewkes (2004) also described that the price cannot be determined individually, but the length of delivery must be considered. Thus, it is legitimate to state that improvement in the delivery time is the area of key concern for supply chain managers which will optimize the performance of delivery process (Forslund, Jonsson & Mattsson, 2008).

Cheraghi et al. (2004), compared and analyzed a number of research papers on supplier selection from 1966 to 1990 and from 1990 to 2001, and indicated timeliness in delivery as the second most important factor in the selection process of suppliers. The same research also stressed that the quality as the foremost factor which held its position even under the span of thirty-six years. Furthermore, the research study conducted by Imeri (2013), provided numeric weights to the associated factors in order to highlight their importance in the selection of supplier and mentioned that the delivery of supplies is an imperative factor. Similarly, Prasad, Kamath, Barkur, and Nayak (2016), also articulated the importance of timeliness of delivery in the context of the steel pipe industry.

Supplier Profile/ History of the Supplier

Evaluation of the supplier's financial condition should be considered as one of the prime factors in the pre-screening process for selecting a supplier (Handfield, Blackhurst, Elkins, & Craighead, 2007). In this regard, Awino (2002), postulated that the suppliers must have a strong financial background to support their operational activities. Further, to minimize the delays in payments, suppliers' financial abilities must be considered important in the entire procurement process (Danese, 2013).

Mutai and Okello (2016), indicated that there is a high level of relationship between supplier's financials and ability to deliver on time, which ultimately enhances the performance of the entire procurement process.

Moreover, the research study presented by Cheraghi et al. (2004), indicated that the suppliers with unstable financial background are not able to contribute effectively towards a strategic partnership. The study further revealed that factors related to the level of trust such as the outlook for the future; compatibility across the functions of buyers and supplier firms; and the supplier's organizational structure should also be included in the supplier selection profile. Although these factors are intangible in nature and so difficult to rate, however, are very important to evaluate the suppliers, as they formulate predictive intuitions about the organization and suppliers' long-term associations (Cheraghi et al., 2014).

Mwikali and Kavale (2012), emphasized the relative experience of the supplier in the selection criteria. For the evaluation of the relative experience of suppliers, monitoring of past production; schedule; response to the market; and its ability to make commercial relations, are considered. Furthermore, the customer base is also included in the list of factors optimizing the supplier's profile.

Availability of Supplier/Accessibility to the Delivery System

In the process of supplier selection, authorities must also evaluate potential supplier on the basis of the ease of communication (Baily, Farmer, & Jessop, 2005). MB Schertzer, Schertzer, and Robert Dwyer (2013), indicated that conveying recommendations to the stakeholders require empathy, commitment and clarity. Thus, it is optimal to believe Hallikas Kulha and Lintukangas (2013), that that there must be a systematic mechanism of communication and interaction between primary stakeholders included in the process of purchase. These findings are further clarified by Smith (2014), who indicated that purchasing organization must prefer those vendors who are willing to be in the process of continuous communication. Research further clarified that two-way communication results in the formation of mutual understanding & also diminishes the perceived risk.

Quality and Suitability of Delivery Fleet/ Modernity of Suppliers

Roy, Sivakumar, and Wilkinson (2004), stated that the ability of a supplier to provide technologically sound product, ability to assist in product development, and capability to cope up with the change of technology, are the determinants which prove the capability of suppliers to provide strategic inputs to the buying firms. A similar annotation has

been highlighted by Cheraghi et al. (2004), that the rapid change in technology is the basic concern due to which supplier's technical capabilities should be included in decision criteria for the selection of suppliers. The study also highlighted that buyers are also concerned about the level of technology and the future capabilities of their suppliers.

Thus, it is ideal to indicate that the innovativeness capability of the supplier can be assessed by the supplier's ability to forward items from the product development stage to the production stage. Moreover, the ability to cope up with the pace of changing technology in order to foster the new product development is also an important element for organizational buying (Cheraghi et al., 2004). Similar findings are proclaimed by Danese (2013), that the supplier selection is based upon two criteria and that the technical expertise is one of them. Study of Mwikali and Kavale (2012), specified that technical expertise of suppliers is especially important when a firm wants to include new products into its list of offerings or is trying to embrace the latest level of technology.

Flexibility of Contract Conditions

Shahadat (2003), professed three important factors for the selection of suppliers and emphasized that the flexibility on the payment terms is an important factor amongst them. Upton (1994), indicated that the flexibility of contract terms is required to deal effectively with uncertainties of the business environment and that the company can cope up with uncertainties, disruption, product life cycles, and consumption patterns (Swafford, Ghosh, & Murthy, 2006).

Furthermore, Tsay and Lovejoy (1999), studied the flexible nature of supply contracts which address the risk-sharing more practically. Similarly, Obed and Vincent (2014), concluded that there is a direct relationship between the flexibility of contract and the quality of raw material supplied, and further ascertained that the introduction of new products and customization also influences the selection of suppliers.

Health Safety Security and Environmental Policies (HSSE)

Socially responsible practices are now implemented throughout the supply chain process in order to deal effectively with an increased level of societal concerns (Gahan & Mohanty, 2011). Huang and Keskar (2007), identified that the contemporary supply chain is now equally focused on the company, customers, as well as towards the safety awareness and environmental attributes of suppliers. Therefore, it is a common belief that more sustainable business practices are

resultant of profitability, safety and societal concerns (Gahan & Mohanty, 2011).

Similar sort of findings has been implied by Thiruchelvam and Tookey (2011), that practices associated with the occupational health and safety are important, as they help in incident avoidance during the process of deliverance and installation of supplies. Moreover, CIPS (2013), also revealed that buyers must consider the linkage of supplier working criteria with ISO standards and evaluate the age of their equipment and production experience documentation.

RESEARCH DESIGN

This research has been linked with the research work of Saunders, Lewis and Thornhill (2009), in order to develop pervasive and applicative research in the context of Pakistan. The philosophy of research is epistemology as the entire focus of the study is towards knowledge building. This research has been compiled through collecting data from various research studies from the international context to complement with the context of Pakistan (Charmaz, 2006). As it is based on a collection of facts, therefore according to the research onion Saunders et al. (2009), the philosophical stance indulged in the study is realism. Moreover, as per Naibor (2018), when the data collection is based upon several firms then descriptive research method must be used, thus, the method of conducting and compiling the research is deductive in nature.

Furthermore, the research strategy is experimental and mono-method has been selected for the collection of the data, through having the responses at the convenience of the respondents. Accordingly, the nature of the experiment is a field experiment and study setting is non-contrived.

Sampling

In accordance to the research studies conducted by Mutai and Okello (2016); Mathiyalagan, Punniyamoorthy, and Sudhakar (2009); and Mugenda (2003), the type of sampling indulged in this research is probability sampling and the simple random sampling method is used. As in the state-owned companies of Pakistan, procurement is conducted only by one or few departments, there is no need of dividing the population into strata. Moreover, in order to make research optimal, the sample size for the research is two hundred.

Questionnaire and Research Tools

Items of the questionnaire have been adopted from the research studies by

Mathiyalagan et al. (2009); and Kannan and Choon Tan (2006). Moreover, previously regression has been used by some researchers as the method of analysis for the criteria of supplier selection, but regression is not able to trace the relative importance of each criterion used in the model (Kumar Kar & Pani, 2014; Tarofder & Haque, 2007). According to Kumar Kar and Pani (2014), the regression model is less effective to accommodate human subjectivity and preference. Moreover, when there is just one moderating variable in the research then it is appropriate to apply the Hayes (2013) model, for the purpose of analysis.

Statistical Testing and Analysis

Initially, Cronbach Alpha (α) has been used to check the reliability of the data, as the research instrument (questionnaire) is based on the Likert scale. According to McMillan and Schumacher (2006), the Cronbach Alpha (α) is used because it is treated as the most appropriate tool to trace out the reliability, especially when the respondents have to select from a variety of response variables. The levels of reliabilities for each item included in the instrument can be seen in table 1.

Table 1. Reliability of Data for Variables associated with the Supplier Selection

Variables	Reliability	Items
Product Cost	0.769	5
Cost of Delivery	0.824	5
Timeliness of Delivery	0.824	5
Quality of Delivery Service and Product Delivered	0.811	5
Timeliness OF Delivery	0.870	5
Availability/ Accessibility of Supplier	0.756	5
Quality and Suitability of Delivery Fleet/ Modernity of Suppliers	0.832	5
Flexible Contract Terms	0.766	5
Health Safety Security and Environmental Policies (HSSE)	0.835	5
Continuous Change in Market Conditions	0.847	5

Analysis

Findings of the tool indicated that all the variables used in the research have more than 75% of reliability in each case. Hence, in association to the explication by Pietersen and Maree (2007), it is appropriate to treat the data reliable, if the value of Cronbach Alpha (α) is equal to or greater than 0.7, in order to figure out reliable results. Therefore, as per the suggested research methodology, Hayes model has been implemented, to evaluate the impact of independent and moderating variables used in the research. These analyses can be seen in Table 2.

Table 2. Highlighting the impact of Hayes Model on the variables

```
Run MATRIX procedure
************* PROCESS Procedure for SPSS Release 2.16.3 *****************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3
**************************************************************************
Model = 1
    Y = Supplier Select
    X = P_Cost
    M = Continuous
Statistical Controls:
CONTROL= Product_C Cost_of_D Qual Timeline Supp Prof Availab Modernit Flexity
ISO
Sample size
       200
--------------------------------------------------------------------------

Outcome: Timeline

Model Summary
          R       R-sq        MSE          F          df1          df2          p
      .9736      .9481      .0586  2645.2997    11.0000  1588.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     -.2687      .1907    -1.4094     .1589     -.6427      .1053
Continuous   -.1597      .0179    -8.9449     .0000     -.1948     -.1247
Product_C     .9551      .0344    27.7508     .0000      .8876     1.0226
int_1         .0234      .0089     2.6214     .0001      .0139      .0408
Cost_of_D     .3593      .0164    15.8408     .0000      .3272      .3914
Qual          .0627      .0283     2.2186     .0267      .0073      .1182
Timeline      -.0007     .0241     -.0309     .9754     -.0480      .0465
Supp Prof     .1990      .0403     4.9392     .0000      .1200      .2781
Availab       .1166      .0125     9.3442     .0000      .0921      .1411
Modernit     -.2269      .0405    -5.6079     .0000     -.3063     -.1476
Flexity       .1394      .0133    10.4665     .0000      .1132      .1655
ISO          -.1100      .0305    -3.6086     .0003     -.1797     -.0509

Product terms key:
 int_1    Product_C     X      Continuous
R-square increase due to interaction(s):
         R2-chng          F         df1         df2          p
int_1      .0005     15.9312      1.0000   1588.0000      .0001
**************************************************************************

Conditional effect of X on Y at values of the moderator(s):
   Economic      Effect          se           t           p        LLCI       ULCI
     2.0186      1.0103      .0320     31.5866      .0000      .9476     1.0731
     3.0150      1.0376      .0329     31.5024      .0000      .9730     1.1022
     4.0114      1.0649      .0352     30.2392      .0000      .9958     1.1340
Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.
***************** ANALYSIS NOTES AND WARNINGS ************************
Level of confidence for all confidence intervals in output:
    95.00
                        ------ END MATRIX -----
```

Analysis

Table 2. indicates that there is a negative impact of the continuous change in the market conditions; and modernity of supplier and HSSE/ ISO policies, on the supplier selection of organizations controlled by the city government. Similarly, there is no impact of timeliness of delivery on supplier selection in these organizations. Findings also indicate that when

the moderating variable is linked with the independent variables, it demonstrates a significant impact. Thus, the continuous change in the market conditions, in association with other independent variables, affect supplier selection criteria more critically. This validates that the organizations controlled by the city government of Karachi tend to focus more on all the independent variables (mentioned in Table 1 & 2) when there is a change in the economic condition of the country.

CONCLUSION AND MANAGERIAL IMPLICATIONS

The findings of the research are completely coherent with the indication of Rashid (2014), that the continuous change in the market conditions is one of the moderating variables in the selection criteria of the supplier. It has been proved that the continuous change in the market conditions fosters more focus on the selection criteria of organizations controlled by the city government. But the findings of the study are relatively different from the prior studies, as they indicate no importance of timeliness in the selection criteria for the organizations controlled by city government. Similarly, there is also a negative impact of quality of fleet/ modernity of supplier and HSSE/ISO policies on the selection of suppliers.

Although timeliness of delivery has been treated as one of the potent variables by various studies (Prasad et al., 2016; Imeri, 2013; Forslund et al., 2008; Vonderembse &Tracey, 1999), but the study findings prove the least significance of the variable. This is an alarming condition, which indicates that for the government-controlled organizations, timeliness of the delivery does not have much importance, unlike the privately owned companies, as they are less focused on customer satisfaction. Thus, the government-controlled organizations pay the least attention to timely delivery which selecting the suppliers.

Additionally, quality of fleet/ modernity of supplier is treated as one of the potent variables by Cheraghi et al. (2004), but in the context of Pakistan, the variable negatively affects the selection criteria of the organizations controlled by the city government. This might imply that the supplier offering high-quality supplies are perceived to be expensive, thus a shortage of budgets to the state-owned companies might force them to surrender the requirement of the best quality for the selection of the supplier.

HSSE/ISO accreditations are considered important by the studies of Rashid (2014); Gahan and Mohanty (2011); Huang and Keskar (2007);

and Shahadat (2003), but here organizations controlled by the city government are negatively affected by these criteria, as their selection of supplier is negatively associated with the HSSE/ ISO accreditation. This might imply that the suppliers having high accreditation of HSSE/ISO are perceived as expensive and the state-owned organizations do not have optimal funds, neither they are much focused towards the societal concerns. Thus, their selection criteria of the supplier differ in comparison to the organizations of the developed world or the privately owned enterprises.

AREA FOR FUTURE RESEARCH

This research has been conducted on the organizations controlled by the city government, as though the importance of city-level government highlighted by Mawhood (1993); and Wraith (1972), but in countries like Pakistan there are several other forms of organizations which are controlled by provincial and national governments and study of those organizations may further enhance the level of understanding on this topic. Similarly, comparison of the selection criteria for suppliers followed by the city level, provincial level, and state level organizations might foster the degree of understanding and contribute significantly towards the body of research.

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COMPETITION AMONG BRICS COMPANIES FOR CLEANER PRODUCTION STRATEGIES

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ABSTRACT

Cleaner production is a universally defined policy ascertained by of the United Nations for countries worldwide. Multinational companies diligently emphasize the cleaner production strategy while setting their organizational goals. Keeping in view the importance of cleaner production in the world; this study investigates the vision and mission statements of selective multinational companies working in the BRICS countries. Top five multinational companies from each BRICS country; listed in the stock exchanges were taken and their vision and mission statements were analyzed via content analysis methods. The results of the study indicated that the Russian multinational companies were found to be most focused on the cleaner production strategies in their vision and mission statements. Moreover, the results reveal that the South African companies gave the least attention to the cleaner production as compared to other BRICS countries. This study opened the door for future studies and suggested the researchers to investigate more ineptly while focusing more countries and to expand the topic to know the universal implementation of cleaner production policies.

Keywords: *BRICS; Cleaner Production; Vision; Mission; Multinational Companies.*

INTRODUCTION

In today's world of competition, cleaner production has become a slogan of multinational companies to attract the attention of societies and to market their products (Moors, Mulder, & Vergragt, 2005). Companies specially arrange different programs related to cleaner production issues (Baas, 1998). Majority of the multinational companies formulate policies in practice to take part in sustainable production (Moors et al., 2005). The best way to know, which companies are more emphasizing on the cleaner production practices; is to study the vision and mission statements of the companies

(Lee, Barker, & Mouasher, 2013). Vision and mission statements are basically the face of companies, which they show to the general public (Velazquez, Munguia, Platt, & Taddei, 2006). Many countries develop their strategies according to the vision and mission statements which they usually share with the public for better communication (Campagna & Fernandez, 2007). Keeping in view the importance of cleaner production for society and to better know the current state of cleaner production and sustainability adoption, this study was conducted specially for BRICS countries to know the thematic issues highlighted in the vision and mission statements of the multinational companies operating in BRICS.

BRICS stands for some most major emerging national economies: Brazil, Russia, India, China and South Africa (Stuenkel, 2015; O'neill, 2001). This economic bloc has a high and significant influence not only in the region but all over the world (Wilson & Purushothaman, 2003). Every year this group conducts different meetings to discuss the prospects of better trade and to strengthen other relations (Roberts, Armijo, & Katada, 2018). Looking at its geographical composition the BRICS countries nearly cover and represent every continent of the world that is, Brazil in the Americas, Russia in the Europe, India and China in the Asia and South Africa in the African continent (Halkos, Managi, & Tsilika, 2017; Vijayakumar, Sridharan, & Rao, 2010). According to an estimation, the geographically covered area by the BRICS countries is nearly 39,000,000 square kilometers that is about twenty seven percent of the world's total geographic land area (Kirton, 2018). Moreover, the BRICS countries possess a very significant and influential role in the decisions taken by United Nations for business environmental issues (Nilsen, & Holdt, 2018; Keukeleire & Hooijmaaijers, 2014), as two of the BRICS countries, China and Russia are the permeant members of the UN Security Council (Ferdinand, 2014).

To know the current situation of the BRICS countries regarding insinuation of cleaner production processes, five multinational companies from each BRICS country, listed in the popular stock exchanges were selected. To examine whether the cleaner production practices the part of the organizational strategy, the vision and mission statements of the five companies from each BRICS countries were selected and analyzed. The data analyses present interesting outcomes and conclusions.

LITERATURE REVIEW

Cleaner production is a strategy to prevent emissions from the

production sources and to initiate a continuous preventive improvement of the environmental performance of the organizations (Glavič & Lukman, 2007). To maintain the production standards and meet with ever emerging market dynamics, many companies today follow the ISO standard rules to protect the environment (Epstein, 2018). Previous research studies assert that implying the cleaner production processes and the ISO 14001 standards complement well, as the companies follow the cleaner production policies approved by the international standards (Tomic & Spasojevic Brkic, 2018; Fresner, 1998). Silva, Delai, de Castro, and Ometto (2013), proclaimed that cleaner production is a set of policies and an approach of organizations to minimize the waste and to protect the environment. In literature, the concept of cleaner production strongly emphasizes on the environmental sustainability and its social benefits (Silva et al., 2013). However, Zwetsloot (1995) stressed that cleaner production policies should be internationally standardized like other organizational processes such as the quality management (Fresner, 1998), and the health management (Petek & Glavic, 2000). In some studies, cleaner production is described as to increase efficiency by reducing waste, following eco-friendly production processes and promoting extensive ecotaxation of inputs and non-product outputs (Reijnders, 2003).

The cleaner production concept was first introduced during the preparation of the Rio Summit as a pervasive agenda of the United Nations Environmental Program (UNEP), and the United Nations Industrial Development Organization (UNIDO) (Luken, Van Berkel, Leuenberger, & Schwager, 2016). Recently, China and many other countries have already developed the strategies for cleaner production adoption (Pesce et al., 2018), after the United Nations conference on environmental development in 1992 where the key elements emphasized on a new policy framework for industrial development and environmental protection (Luken et al., 2016). Thus, the ever-increasing significance and occurrences of the repercussions of climate change accentuate the importance and the urgency to learn production efficiency which reflects upon the strategies towards sustainable societies (Yong et al.,2016)

Cleaner Production Trends in BRICS

Some of the BRICS countries already have developed strategies for sustainable urbanization practice and cleaner production (Shen, Shuai, Jiao, Tan, & Song, 2017). Oliveira Neto et al. (2016), suggest that there is a

strong association between organizations and government to formulate the cleaner production policies regarding sustainable environment concerns.

Moreover, a study by Bonilla et al. (2010) and Oliveira Neto et al. (2016), concluded that the application of cleaner production practices in Brazilian companies is not usual and there is a need to establish significant partnerships among institutions and the government to foster the cleaner production concept. The research further asserted that the rapid research work in the area of cleaner production and its impacts on the environment and industrial activities has enabled the development of cleaner production plan of actions (Oliveira Neto et al., 2016). The research also indicates that due to some highly cited research work recently published in journals in Brazil put forward the study on cleaner production and emphasizes on its emerging significance (ibid).

Regarding the cleaner production strategies in Russia, it has been observed that the government has developed many institutions to regulate the Russian companies regarding sustainable and clean production. Among these regulating institutions; the National Cleaner Production Centre of the Russian Federation works actively to regulate and monitor the cleaning production processes (NCPC, 2018). The National Cleaner Production Centre of the Russian Federation also has partnered with the United Nations Industrial Development Organization to encourage cleaner production strategies. However, the current situation in Russian companies about the adoption of cleaner production is still a challenge (Thompson, 2018). National Cleaner Production Centre - NCPC (2018), proclaims that in Russia the cleaner production programs were implemented within the framework of the Russian-Norwegian co-operation based on the appropriate intergovernmental agreement of 1992. The reports published in this regard show that Russian companies secure the third place amongst the five BRICS countries in adopting environmental efficiency and cleaner production policies (de Castro Camioto et al., 2016) and implementation of environmental sustainability (Nikolayevich & Yuryevna, 2015). Moreover, the strategic goal of the Russian government environmental policy up to 2030 proclaims that the socio-economic tasks could be attained by upholding the environmentally-oriented growth of the economy (President of Russia, 2012). Thus, the cleaner production strategies have become a vital feature of the new model for the national economy (Bobylev, Kudryavtseva, & Yakovleva, 2018).

As far as the Indian environmental ranking is concerned, the country is amongst the topmost populist countries where environmental pollution is extremely high and makes it a challenging job for the government and non-government organizations to combat with the issue (Duflo, Greenstone, Pande, & Ryan, 2018; Smith, et al., 1994). However, recent researches conducted on the subject in the Indian context illustrate inclination of cleaner production practices in the country. Unnikrishnan and Hegde (2007), assert that nearly half of the firms in India have undergone the training in Environmental Management System (EMS) and took an active part in cleaner production programs. Moreover, Mohanty and Prakash (2014), state that the Indian firms' toady, face significant pressures from external stakeholders to adopt the green supply chain management practices, which accords with the cleaner production approach.

Previous studies state that cleaner production strategies and plans were introduced in China in the early 1990s through development aid projects (Hicks & Dietmar, 2007). The studies also show that the CP plans in China were more focusing on methodology and practices from 1992 to 1997 than in other years (Mol & Liu, 2005). After 1997, the methodological research and investigation were shifted into cleaner production policy-making like Cleaner Production Promotion Law in 2002 (ibid.). These type of laws are effective in China nowadays and compel the organization to take the environment seriously while producing commodities (Zhan, Tan, Ji, Chung, & Chiu, 2018).

In this context, to implement and regulate companies in South Africa, the National Clean Production Center of South Africa is playing a dynamic role (CSIR, 2018; UN, 2018). Recent studies show that South Africa is going well while regulating its companies for cleaner production (CSIR, 2018). The NCPC-SA was launched during the 2002 Johannesburg World Summit for sustainable development as a co-operation program between South Africa and the United Nations Industrial Development Organization with financial assistance from the South African Department of Trade and Industry and support from the governments of Austria and Switzerland (UN, 2018). This program is actively working to provide guidance to the South African companies to regulate the cleaner production policies (UN, 2018).

Using Vision and Mission Statements as Comparison Indicators

In this study, the comparison of vision and mission statements of the companies was undertaken (O'Gorman & Doran, 1999). In the previous literature, few studies have used the companies' vision and mission

statements to reflect explore strategic level comparative studies (Campagna & Fernandez, 2007). Kantabutra and Avery (2010), postulate that the vision and mission statements are the faces of companies. To implement the main ideas and to run the projects; companies always use vision and mission statements (Collins & Porras, 1996). In other words, the vision and mission statements are the core of the company policies on which the projects are initiated (Wilson, 1992).

RESEARCH METHODOLOGY

To examine the degree of espousal and consideration of cleaner production policies by the multinational companies in the five BRICS countries, the vision and mission statements of five selected companies from each country were collected from the websites of each company. For analyses of the selected vision and mission statements, a content analysis method was used. To conduct the analysis, the vision and mission statements were first, carefully analyzed and qualitative tools were used to determine codes to the selected terms. A careful coding helped the researcher to analyze the presence of the chosen concept, which was emphasized in the vision and mission statements. Finally, through sorting and tabulation, a summary of important points was extracted. The selected companies are the top five companies from the BRICS countries and listed in the popular stock exchanges. These companies are supposed to be the representation of the BRICS countries. All the companies which were selected are present in the list of top world stock exchanges. Table 1 shows the sampled companies' details.

Details about Companies and Industries

	Com-pany	Industry	Listed Stock Market	Governments Rules on CSR	Pressure Group
Brazil	1	Aerospace	NYSE and BM&F Bovespa	Available	Government and Private sector
	2	General mining	São Paulo, New York City, Paris and Madrid.	Available	Government and Private sector
	3	Iron & steel	São Paulo, New York and Madrid.	Available	Government and Private sector
	4	Consumer goods	São Paulo	Available	Government and Private sector
	5	Consumer goods	São Paulo	Available	Government and Private sector

Russia	1	Oil & Gas	MCX: SIBN, part of Gazprom	Available	Government and Private sector
	2	Manufacturing	MCX: LKOH, LSE: LKOD, OTC Pink: LUKOY FWB: LUK	Available	Government and Private sector
	3	Financials	MCX: VTBR	Available	Government and Private sector
	4	Consumer services	LSE: FIVE	Available	Government and Private sector
	5	Metals and mining	Open joint stock company	Available	Government and Private sector
India	1	Oil & Gas	Bombay Stock Exchange and National Stock Exchange of India. [25]	Available	Government and Private sector
	2	Oil & gas, industrials, consumer services, telecommunications	National Stock Exchange of India Limited (NSE) and the BSE Limited.	Available	Government and Private sector
	3	homoeopathic medicines manufacturing	BSE/NSE	Available	Government and Private sector
	4	Automobiles	National Stock Exchange of India, and the New York Stock Exchange.	Available	Government and Private sector
	5	Gold mining	BSE/NSE	Available	Government and Private sector
China	1	Petroleum & Chemical Corporation	SNP/Shanghai Stock Exchange	Available	Government and Private sector
	2	Consumer Goods	NYS/SNP	Available	Government and Private sector
	3	Financial	Hong Kong Stock Exchange and Shanghai Stock Exchange	Available	Government and Private sector
	4	Communication	NYSE and the Hong Kong Stock Exchange	Available	Government and Private sector
	5	Agriculture finance	Shanghai and Hong Kong Stock Exchanges	Available	Government and Private sector

South Africa	1	Airways	SAA, Nasdaq	Available	Government and Private sector
	2	Tele-communications	Nigerian Stock Exchange, JSE	Available	Government and Private sector
	3	Food Retail	Namibian, Zambian and Johannesburg Stock Exchange,	Available	Government and Private sector
	4	Banking	Uganda Securities Exchange	Available	Government and Private sector
	5	Broadcasting	Johannesburg Stock Exchange and London Stock Exchange	Available	Government and Private sector

RESULTS AND DISCUSSION

The results are systematically discussed in the proceeding sections for each BRICS country. The data analysis obtained through conceptual content analysis is illustrated below.

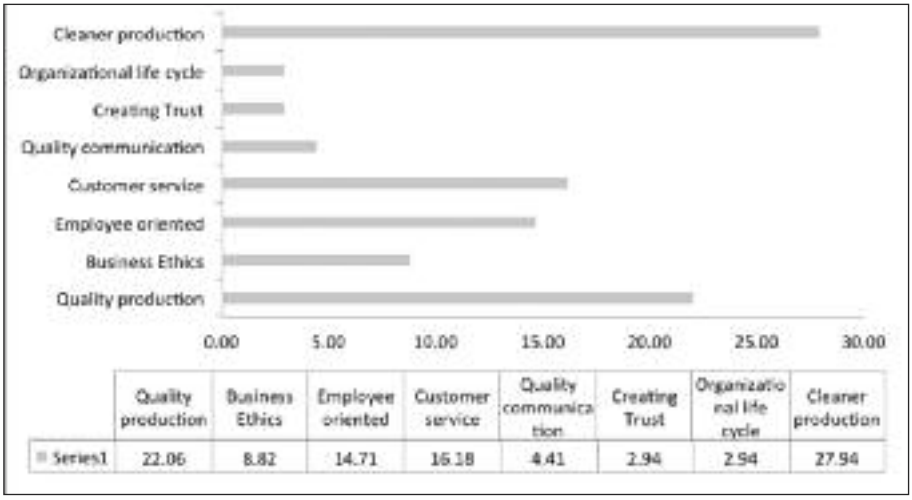

Figure 1. Strategic Policies of Brazilian Companies

Figure 1 describes the degree of integration of cleaner production strategic policies by the Brazilian companies communicated through their vision and mission statements. The results indicate that the majority of the Brazilian companies (27.94%) strongly emphasize on cleaner production strategies in their vision and mission statements. The results also indicate that the majority of the Brazilian companies have the least focus (2.94%) on creating organizational and customers' trust relationship while designing their vision and mission.

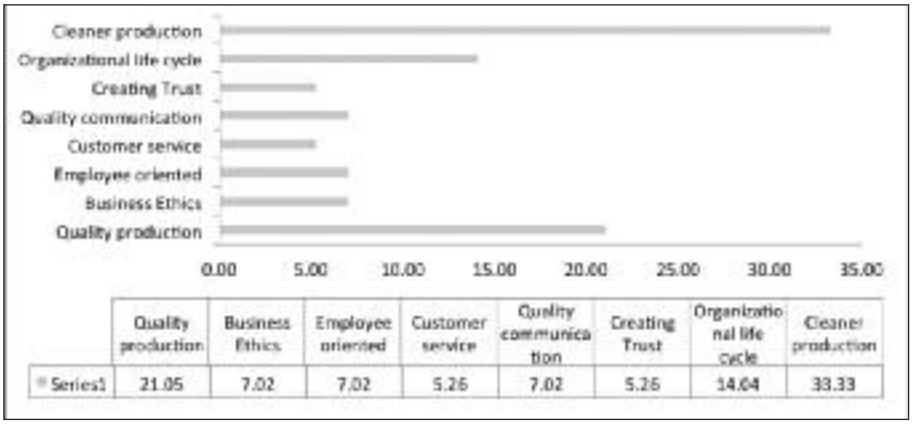

Figure 2. Strategic Policies of Russian Companies

Figure 2 illustrates the current situation in the thematic issues extracted from vision and mission statements of the Russian listed top companies. The results indicate that the majority of the Russian companies primarily focus on the cleaner production perspective in their vision and mission statements (33.33%). The results also indicate that the least focused area by these companies is on customer service and customer trust (5.26%).

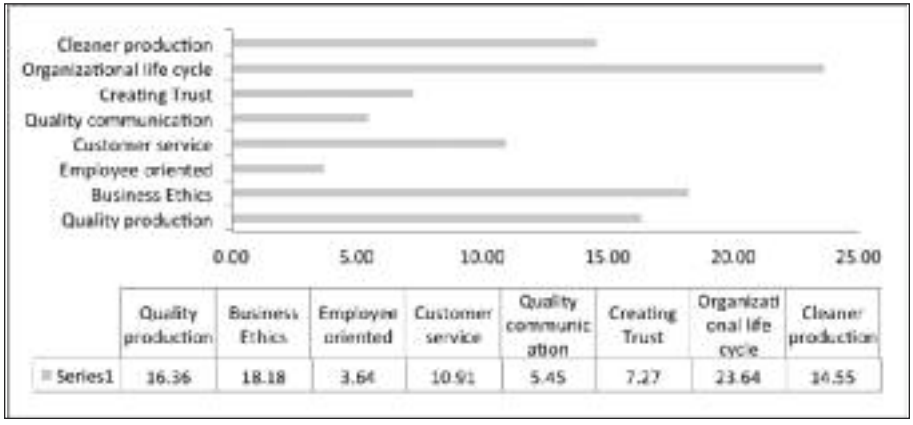

Figure 3. Strategic Policies of Indian Companies

Figure 3 helped the researchers to discern the main issues highlighted by Indian top listed companies in their vision and mission statements. The results show that the majority of the Indian companies especially focus the organizational life cycle while designing their vision and mission statements (23.64%). However, it has been observed that the least focused area in this regard is employee-oriented policies, which seems to be neglected and least concerned matter in the vision and mission statements of the Indian listed companies (3.64%).

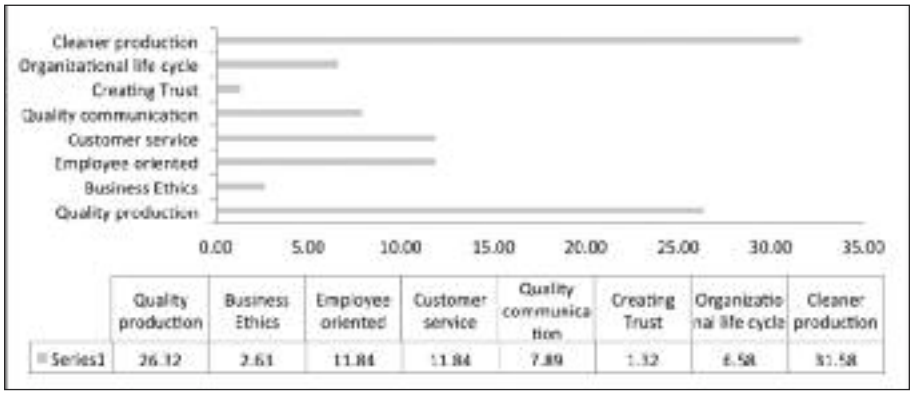

Figure 4. Strategic Policies of Chinese Companies

Figure 4 shows the results about the strategies of Chinese listed companies illustrated through their vision and mission statements. The results indicate that the Chinese listed companies' major organizational interest is in cleaner production (31.58%). The results also indicate that creating trust between the organization and the customers is considered to be the least important issue (1.32%) for Chinese companies.

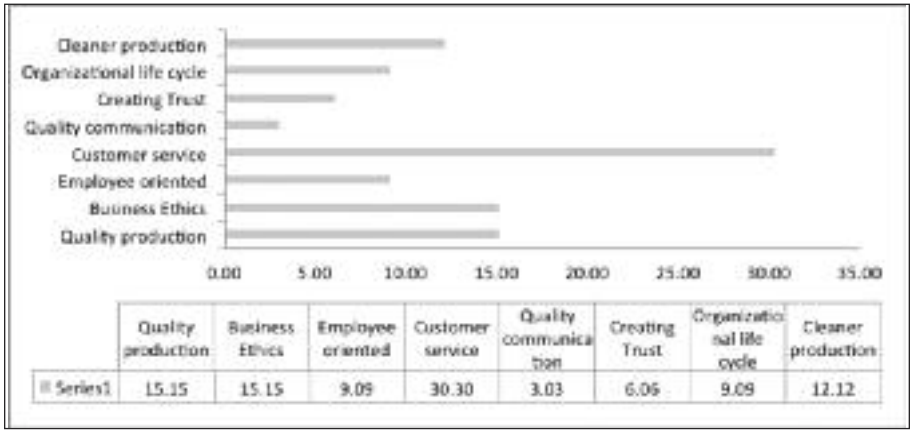

Figure 5. Strategic Policies of South African Companies

Figure 5 reveals that the South African listed companies mostly focus on customer service issues (30.30%) while formulating the vision and mission statements. The results also indicate that the issue which is given least attention in the vision and mission statements of South African companies is the quality communication between the organization and customers (3.03%). Whereas, the cleaner production practices are given moderate attention (12.12) and is mainly not focused by the organizations.

Table 1. Competition among BRICS companies for Cleaner Production

Country	Attention to cleaner production in vision and mission statements
Brazil	27.94 %
Russia	33.33 %
India	14.33 %
China	31.58 %
South Africa	12.12 %

Table 1 shows that the Russian companies rank on the top as about 33.33 % of the focus of these companies is on Cleaner production, China secures the second (31.58 %), Brazil third (27.94 %), India fourth (14.33 %) and South Africa secures fifth ranking (12.12 %), respectively, while focusing cleaner production issues in their vision and mission statements. These results also indicate that overall the cleaner production policies of BRICS countries are not satisfactory. The United Nations environmental department strongly suggest a high level of cleaner production policies to be adopted by the countries in order to promote sustainability and meet the millennium development goals.

RECOMMENDATIONS AND CONCLUSION

This study concluded the most recent strategic statements of the BRICS countries and found that Russian companies strongly emphasize on cleaner production practices as compared to other BRICS countries. Although the other issues which were highlighted in the vision and mission statements of the companies are also important, but it has been found that in some of the BRICS countries the inclination towards the sustainability goals and cleaner production approach was missing. The Russian, Brazilian and Chinese companies were found to be more focused and determined in adopting the cleaner production approach while the Indian and South African multinational companies were found negligent towards the cleaner production approach in their vision and mission statements. Keeping in view the results of this study, it is recommended that the organizations in the BRICS as well as in the other countries of the world should focus more on cleaner production. The future studies may also be conducted by expanding the idea to other nations by focusing more on multinational and national companies.

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TWO-PASS MODEL OF CAPM: EVIDENCE FROM PAKISTAN STOCK EXCHANGE

Ruqia Shaikh, Dr. Sarfaraz Ahmed Shaikh, and Muhammad Usman

ABSTRACT

This research study analyzes the variation in monthly returns of securities for companies listed in Pakistan Stock Exchange-PSX (Formerly known as KSE). The Capital Asset Pricing Model (CAPM) of SLB has provided a method for researchers and experts to forecast the risks and returns. The main purpose of CAPM is to estimate beta of security to explain how much security is aligned or sensitive with the movement or changes in the market return. The research is conducted by means of monthly market capitalization of companies; portfolios are formed and the role of idiosyncratic risk in explaining the variations in the stock returns have been studied. With the same portfolios, the relationship of risk and return relationship has also been analyzed. This empirical analysis is conducted for the period of May 2010 - April 2014. Data analysis reveal that the idiosyncratic risk is a significant factor in explaining the stock returns. Capital Asset Pricing model is rejected in this study context because of positive and significant intercept in all portfolios. The research findings strongly support Chan and Chui (1996) and Strong and Xu (1997), assertions that the relationship between beta and security returns is weak. Therefore, CAPM is an empirically anemic model to be used in the Pakistani market.

Keywords: *Capital Asset Price Modelling; CAPM; Stock Returns; Pakistan Stock Exchange (PSX), Idiosyncratic Risk.*

INTRODUCTION

The Capital Asset Pricing Model (CAPM) of SLB (Sharpe, 1964; Lintner, 1975; Black, 1972), has formed a method for researchers and experts to have a look at risks and returns. The main purpose of CAPM is to estimate the beta of security to explain how much security is aligned or sensitive with the movement or changes in the market return. This SLB model can estimate the equity cost and evaluate the size of hedging

contracts to be sold for the hedging of an equity portfolio. The model can measure the abnormal returns on assets and the performance of a diversified portfolio.

The standard form of CAPM provides a clear description of capital market behavior provided its basic assumptions are reliable (De Luca, 2018). The popularity of Capital Asset Pricing Model lies in the element that the risk of any asset is measured through the covariance between market return on portfolio and the return of an asset itself. There is an assumption in the SLB model that the only efficient portfolio is the market portfolio which holds all the risky assets. Investors have lots of opportunities to form a well-diversified portfolio which is in fact not a rational assumption and is difficult to implement in the practical world. Many researchers have supported the Capital Asset Pricing Model through their research studies. Black (1972), found that the beta can work as a single factor to explain the variation in the cross-section of stock returns. Similarly, Fama and MacBeth (1973), followed the findings of Black (1972), and asserted that the beta explains the cross-section of returns of securities. However, Blume and Friend (1973), have not supported the Capital Asset Pricing Model in their research design. Similarly other studies have also rejected Capital Asset Pricing Model in their research context e.g. (Elshqirat, 2018; Basu, 1983; Lakonishok & Shapiro, 1986; Ritter & Chopra, 1989; Fama & French, 1992; Fama & French, 1993; Fama & French, 1996; Miles & Timmermann, 1996; Morelli, 2003; Simlai, 2009). Comparably, in the context of Pakistan, Shaikh, Shaikh, and Shaique, (2017); Syed, Imtiaz, and Fahim (2011), conducted a test on validity of CAPM in PSX (Pakistan Stock Exchange) and found CAPM as a valid model to accurately predict the security returns in the short term investment as compared to the long term investment. However, Mirza and Reddy (2017), observed the validity of CAPM on PSX (Pakistan Stock Exchange) in their study and found it an invalid model to determine the returns of securities. Similarly, in another study conducted by Iqbal and Brooks (2007), to test the validity of CAPM on PSX and found a nonlinear relationship of risk and return, intensively in recent period because of the market performance supported by intensive trading activity and elevated level of liquidity.

The above empirical discussion and evidence conclude that the estimated results provided by CAPM with a single factor of market risk cannot explain the cross-sectional variation in the returns of securities. There is an ample discussion on the linearity of risk and return relationship in the earlier studies and many researchers have questioned this relationship. Up till now the literature of finance and accounting could not

find a reasonable and logical conclusion about risk and return relationship that either it is linear or nonlinear in nature. Thus, the first objective of this study is to check the linearity of the risk-return relationship. To check this relationship, we have used a two-pass regression method. It is observed that the investors are compensated for bearing risk, that is systematic or non-diversifiable because another risk named idiosyncratic risk can be eliminated through diversification of portfolios. But in practice, it is not possible for investors to always hold a fully diversified portfolio; rational investors always claim a price of risk or premium which is an idiosyncratic risk. Pukthuanthong-Le and Visaltanachoti (2009), conducted a cross country analysis on idiosyncratic volatility and stock returns and found that the idiosyncratic volatility has a positive relationship with stock returns. These findings are found statistically significant in thirty-six countries from 1973 to 2007. However, in Pakistan, there is a minimal investigation carried on the importance of idiosyncratic risk in determining the security's return.

In this context, the second objective of this study is to investigate whether systematic risk explains the security's return in the context of Pakistan. To investigate the influence of unsystematic risk on the returns of securities, we have segregated the total risk into two parts systematic and nonsystematic risks and check the significance of both factors independently.

LITERATURE REVIEW

Research study investigated by Black (1972), used monthly return on securities listed in the New York Stock Exchange (NYSE) for the period of 1931 to 1965 and formed ten portfolios on the basis of beta. In each portfolio, the investors decide on the basis of their risk preferences, if the investors are risk averse, they will select low beta portfolios and if the investors are risk seekers, they will select high beta portfolios. Black found that the portfolios with lower risk have positive alpha and high-risk portfolios have lower or negative alphas. In this way, three out of ten portfolios statistically significantly violated the zero intercept hypotheses in the time-series tests.

Additionally, Fletcher (1997), found that there is no effect of the size of the firm on UK security returns and concluded that the only market risk (beta) is valid to explain cross-sectional variation in the security returns. Blume and Friend (1973), conducted a study on the linearity of risk and return relationship and concluded that this relationship between risk and return is questionable. In

contrast, Basu (1983), found that the firms having higher earning to price ratio (E/P) earn higher returns, which are risk-adjusted than firms with lower earnings to price ratio. Furthermore, the size effect evaporates when risk and earning price ratio difference is adjusted and controlled for the return of security. Lakonishok and Shapiro (1986), proclaimed that neither the market risk (beta) nor deviation of market returns can explain the cross-sectional variation in security's returns, whereas the size is the only factor that plays an important role in explaining the returns. Similarly, Ritter and Chopra (1989), conducted a research study on the same subject and concluded that there is no cross-sectional relation between market risk and return. Chan and Chui (1996); and Strong and Xu (1997), followed the Fama and French (1992), approach and found that the relationship between market risk and returns is weak. Relatedly, Fama and French opposed the CAPM model in their 1992, 1993 and 1996 studies. In their studies, they found that the security returns cannot be explained only by beta and emphasized that the CAPM is an incorrect estimator of securities' return. They argued that securities with lower market risk are exceptionally underpredicted and securities with higher market risk are immensely overpredicted. In this regard, Jegadeesh and Titman (1993), observed the relationship of price and average return and discovered that the relationship is flat, even after the inclusion of beta as an independent variable. The study further concluded that the firm characteristics like BE/ME (Book to Market equity) and the size of the firm can better explain the cross-sectional variation in the returns of assets. Further, Morelli (2003), found that the CAPM model is valid only for a specific time period and risk premium provided by SLB model is insignificant in the regression model based on cross-sectional data.

CAPM model assumes that the market risk is the only systematic risk which should be priced in the market and investors should be compensated for bearing this risk (Rossi, 2016). Nonetheless, the theory says that total risk consists of two parts, the systematic risk and unsystematic (diversifiable or idiosyncratic) risk. Previously, studies conducted on the CAPM model have rejected this assumption as it does not hold any practicality in the real trading world. Empirical work done by researchers have investigated whether unsystematic risk plays any role in explaining the cross-sectional returns of securities and whether investors should be compensated for bearing the unsystematic risk. Thus, the possibility that the unsystematic risk can be eliminated while forming a portfolio has been researched and conflicting results are found. Some studies have observed on the number of securities an investor should hold to form a fully diversified portfolio of assets (Choi, Fedenia, Skiba, & Sokolyk, 2017).

Evans and Archer (1968), demonstrate that at least thirty securities make a portfolio a fully diversified one, similarly, Statman (1987) followed their results. Bradfield and Munro (2017) suggested that in the African context, a set of thirty-three securities can make a portfolio risk aversive and reduce 90% of the risk. Relatedly, Domian, Louton, and Racine (2007), contend that the enclosure of hundred securities is even not sufficient for diversification of a portfolio. The study proposed that there might be a pronounced amount of unsystematic or idiosyncratic risk in the portfolio of an investor. In another comprehensive study conducted by Goetzmann and Kumar (2008), a sample of sixty-two thousand (62000) household investors during the period of 1991 to 1996 was observed. It was found that more than 25% of the investor portfolios have only one stock, over 50% of the investor portfolios do not have more than three stocks, and only 5-10% of them have more than 10 stocks. This shows that it is exceedingly difficult for every investor to hold many numbers of securities in their portfolio.

There is a high probability that the unsystematic risk can play a significant role in explaining the cross-sectional variation in the stock returns. Moreover, Campbell, Lettau, Malkiel, and Xu (2001), discussed that household investors confront a variety of severe mistakes due to their misunderstanding about the characteristics of securities. As a result, portfolios become undiversified and the investors also bear the unsystematic risk. Campbell et al. (2001), studied the statistical properties of idiosyncratic volatility and revived the role of unsystematic risk in explaining the returns of stock and pricing of assets. The possibility of the role of unsystematic risk in explaining the returns has been investigated in two recent studies. Campbell et al. (2001), formed a model on the hypothesis that probably the investors cannot hold the market portfolio. This model included the unsystematic risk as a determining factor of returns of the stocks. They studied the relationship between the returns of security and unsystematic risk and found positive results. Another study by Ang et al. (2006), opposed this relationship and proposed that the securities with higher systematic risk provide terribly lower returns.

Other studies have also discussed the importance of idiosyncratic or unsystematic risk in explaining the cross-sectional variation of stock returns (Bali, Cakici, Yan, & Zhang, 2005; Goyal & Santa-Clara, 2003; Campbell et al., 2001). As the variations in stock returns of value weighted portfolios are predicted by the volatility of equally weighted portfolio, Guo (2003), quantified the volatility by using quarterly data and expounded that the unsystematic risk of value weighted portfolio returns of the stock are negatively related with the future stock

returns. Studies by Campbell et al. in 2018; and Campbell in 2006, suggested that if the investor does not hold a fully diversified portfolio or a market portfolio, which is a common practice in the real world, then the idiosyncratic or non-systematic risk becomes positively related to the stock returns.

DATA AND RESEARCH METHODOLOGY

In this research, we have taken data sample of well reputed and highly trading companies listed in the Pakistan Stock Exchange. Data has been taken for the period of May-2010 to April-2014. We have taken prices and the market capitalization of 65 companies in total. Prices have been used to calculate the returns of company stocks at every month end, while capitalization has been taken to rank the companies in order to form size-based portfolios (market cap is used as a proxy for size). Five portfolios have been formed based on market capitalization, Portfolio 1 is formed on smallest sized companies and portfolio 5 has been formed on largest sized companies. Based on prices, we found both equal weighted and value weighted portfolio returns. Prices and market cap data have been taken from "Bloomberg" market data portal. In order to find excess returns, we use 3-month Treasury bill rate which has been taken from State bank of Pakistan website.

Betas for each individual security are estimated by regressing monthly excess returns with market excess returns. The regression equation for beta calculation is given as under:

$$\tilde{R}_{it} = \alpha_i + \tilde{\beta}_{rm} + e_{it} \qquad (1)$$

Here $\tilde{R}_{it}$ represents excess returns on portfolios at "i "time t; is α_i intercept of portfolio i; r_M is the excess return on market, $\tilde{\beta}$ is coefficient of excess market return, and it is found by regressing excess returns of the portfolio with excess market returns. And e_{it} is the random error of regression for "i" portfolio at time t. To check the applicability of CAPM we test the following hypothesis;

Ho represents the null hypothesis and *H1* is the alternative hypothesis.

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

If α_i is significantly different from zero, that means there is some part of return which CAPM is unable to explain, hence the rejection of Ho is tantamount to the rejection of CAPM. To prove the significance of idiosyncratic risk in explaining portfolio returns we need to find the idiosyncratic risk of every portfolio. To find idiosyncratic and systematic risk we use market risk model;

$$\sigma^2_{it} = \tilde{\beta}^2 \, \sigma^2_{Mt} + \sigma^2_{\acute{e}it} \qquad (2)$$

σ^2_{it} is total risk of the portfolio "i" at time t, σ^2_{Mt} is total market risk

which is calculated by finding the variance of excess market returns. $\tilde{\beta}^2$ is square of the beta of portfolio "i" found through regression of excess portfolio returns against excess market returns. The first term of equation (2) is the total market risk of the portfolio "i" and $\sigma^2_{\tilde{\varepsilon}it}$ is the idiosyncratic risk of the portfolio "i". Idiosyncratic risk is found by subtracting market risk of the portfolio from total risk.

To examine the relationship between security returns and betas, we use two pass regressions. By using equation (3) we first find the average beta of each security by regressing excess return of securities against excess returns of all 65 securities. Returns of securities are taken for the whole period specified above.

$$\tilde{R}_{jt} = \alpha_j + \tilde{\beta}_j \tilde{R}_{Mt} + v_{it} \qquad (3)$$

J=1,2,3…….65, and t=1,2,3…….48 (months); whereas *vit* is the random error term of regression.

We call above regression as pass-one of our model, in which we find betas for each security. In the second pass, we regress average excess returns of all 65 securities against betas to see the relationship between beta and security returns. Average returns are taken as dependent variable and betas are taken as the independent variables in the second pass. The equation used in the second pass is given as under;

$$\bar{R}_j = \gamma^0 + \gamma^1 \tilde{\beta}_j + \gamma^2 \tilde{\beta}^2 + \gamma^3 \sigma^2_{(\tilde{\varepsilon}j)} \qquad (4)$$

$\bar{R}_j$ is the average excess return of each security, γ^0 is intercept. $\tilde{\beta}_j$ represents betas of securities found in the first pass and γ^1 is coefficient of $\tilde{\beta}_j$, which represents the sensitivity of beta to security excess returns. $\tilde{\beta}^2$ in Equation (4) has been put to test nonlinear relationship between beta and returns. It is found by taking the square of the beta of each security and γ^2 is coefficient of $\tilde{\beta}_j^2$ which measures how sensitive $\tilde{\beta}_j^2$ is to excess returns of securities. $\sigma^2_{(\tilde{\varepsilon}j)}$ has been put to test whether idiosyncratic risk explains the excess returns of securities. For CAPM to hold, γ^0 must be equal to zero, while γ^2 and γ^3 must be insignificant and γ^1 must prove to be significant.

EMPIRICAL ANALYSIS

Regression Results and Descriptive Statistics

Table 1 shows the descriptive statistics in which beta and the average size of each portfolio taken from PSX (Pakistan Stock Exchange) is reported. Panel A of table 1 depicts the size of portfolios which are

extensively dispersed, though the mean of smallest (Portfolio 1) and largest (Portfolio 5) is 2933.18 million rupees and 124653.9 million rupees respectively. Additionally, the coefficient of variation of smallest and largest sized portfolios is higher than other three portfolios depicting that the standard deviation of smallest and largest portfolios is higher compared to the mean of these portfolios. Other three portfolios have a moderately small coefficient of variation in comparison to the smallest and largest portfolio.

Panel B of table 1 depicts the beta portfolios in which betas of securities ranges from a minimum of -0.3205 in Portfolio 1 and 1.753 in portfolio 2, but the mean betas of the portfolios have a narrow spread of 0.5164 in portfolio 4 to 0.6808 in portfolio 3. These finding of size and beta portfolios are analogous with the results of Fama and French (1992), They formed 100 portfolios based on double sorted size and beta and found a range of portfolios based on size from 0.92 to 1.44. Strong and Xu (1997), pre-ranked the ten size portfolios and showed the narrow range of betas from 0.94 to 1.26. Similarly, Fletcher (1997) showed a range of 0.59 to 1.47 in betas of 100 size portfolios.

Table 1. Descriptive Statistics of Capitalization and Betas for Portfolios

	1	2	3	4	5
Panel A: size in 5 portfolios (RS million)					
Mean	2933.186	7211.071	12846.050	26141.210	124653.900
Maximum	5582.497	8858.855	18739.770	42738.310	306572.200
Minimum	304.885	5616.809	9254.203	18811.720	44913.830
Std. Dev.	1532.809	1083.647	3487.445	8040.956	93829.940
Skewness	0.230	0.132	0.455	0.823	0.926
Kurtosis	2.687	1.699	1.852	2.356	2.401
CV	0.5226	0.1503	0.2715	0.3076	0.7527
Panel B: Beta in 5 portfolios					
Mean	0.6793	0.5997	0.6808	0.5164	0.6015
Maximum	1.4171	1.7533	1.1665	1.2316	1.6631
Minimum	-0.3205	-0.1289	0.2622	0.0977	0.0304
Std. Dev.	0.5623	0.5321	0.2923	0.3589	0.4398
Skewness	-0.2261	0.6666	0.1442	0.5826	0.7251
Kurtosis	1.8480	2.8737	1.9517	2.3029	3.7772
CV	0.8277	0.8873	0.4294	0.6951	0.7313

Notes*: Mean size represents an average of capitalization of all securities in every portfolio at every month end.*
Amounts in capitalization are represented in million rupees.
Mean beta is average of betas of securities in i portfolio.
Max, min, and std. dev are maximum, minimum, and standard deviation values in capitalization and in betas of portfolios.
CV is Coefficient of variation calculated by dividing standard deviation with mean.
Skewness and kurtosis are given to check the distribution of capitalization and betas of all portfolios.

In Table 2. descriptive statistics of average returns are reported for Value Weighted Portfolio (VWP) and Equally Weighted Portfolio (EWP). Panel A depicts the descriptive statistics of monthly average returns of equally weighted portfolios. The average monthly return spread ranges from 1.21% for portfolio 4 to 3.48% for portfolio 1. Panel B depicts the descriptive statistics of monthly average returns of equally weighted portfolios. The average monthly return spread ranges from 0.54% for portfolio 5 to 4.82% for portfolio 1. The table clearly rejects the CAPM model which says higher beta portfolio must earn higher returns and vice versa. In table 2 it is clearly observed that portfolio 3 has the highest mean beta but still, it earns lower returns, while portfolio1 is the highest earner but it has relatively lower beta. These empirical results are contradicting the CAPM assumption of a positive relationship between risk and return. The results support the findings of French (1992), that the smaller sized firms are earning higher returns than larger sized firms.

Table 2. Descriptive Statistics Monthly Average Returns for Portfolios

	1	2	3	4	5	KSE-100
Panel A: EWP						
Mean	0.0348	0.0261	0.0165	0.0121	0.0125	0.0155
Max	0.2077	0.2776	0.1583	0.1344	0.1538	0.1423
Min	-0.1309	-0.1501	-0.1301	-0.1484	-0.1160	-0.1157
Std. Dev.	0.0771	0.0824	0.0644	0.0555	0.0574	0.0465
Skewness	0.4656	0.5125	0.0726	-0.3375	0.1836	-0.3694
Kurtosis	2.7236	4.2768	2.4834	3.3104	2.8904	3.8859
Panel B: VWP						
Mean	0.0482	0.0260	0.0181	0.0154	0.0054	
Max	0.3398	0.2566	0.1481	0.1343	0.1678	
Min	-0.1463	-0.1239	-0.1227	-0.1398	-0.2399	
Std. Dev.	0.0912	0.0790	0.0611	0.0556	0.0722	
Skewness	0.8239	0.5536	0.0207	-0.4167	-0.4600	
Kurtosis	3.8929	3.8200	2.5262	3.4183	4.6048	

Notes*: EWP and VWP are abbreviated for equal weighted and value weighted portfolios.*
Above descriptive are calculated on all 48 months' time series return data.
EWP and VWP mean has been calculated by taking arithmetic mean of excess returns and value-weighted excess returns of portfolios respectively.
To check the distribution, we test skewness and kurtosis of all portfolios.
Min, Max and Std.dev. represent minimum, maximum values and standard deviation in returns.
KSE-100 represents monthly index returns.

In the illustrated statistics, the histogram of portfolio return shows the rightward skewness, mean returns are more skewed toward right than to the

left. It means that portfolio returns have features of asymmetric or unequal distribution. The histograms of portfolio returns are presented in figure 1. The distribution of portfolio return is prospective either to require a higher price of risk or to be discouraged from taking higher risk. Moreover, distribution of returns has higher kurtosis values greater than zero.

Figure 2 shows the bar graphs of portfolio returns showing time wise occurrence of returns. The pattern of graphs in all portfolios and KSE-100 index return do not show any trend, which means that returns are unpredictable.

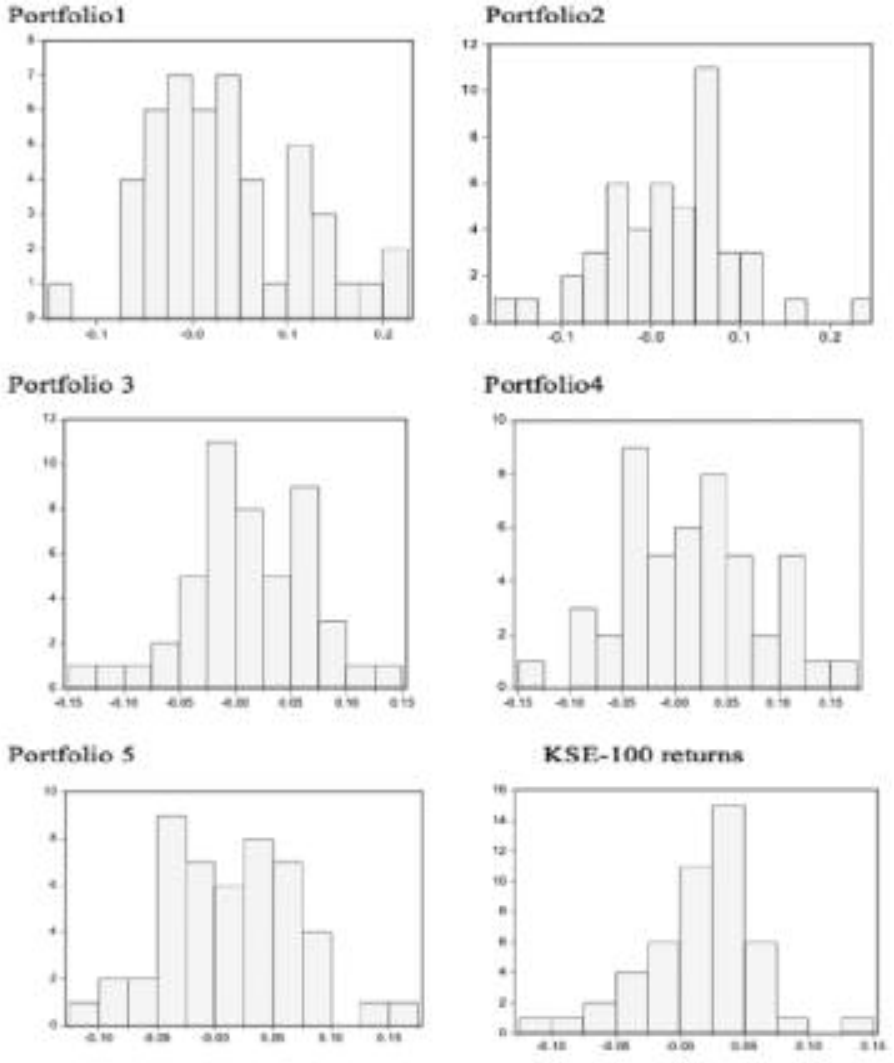

Figure 1. Distribution of Portfolio Returns

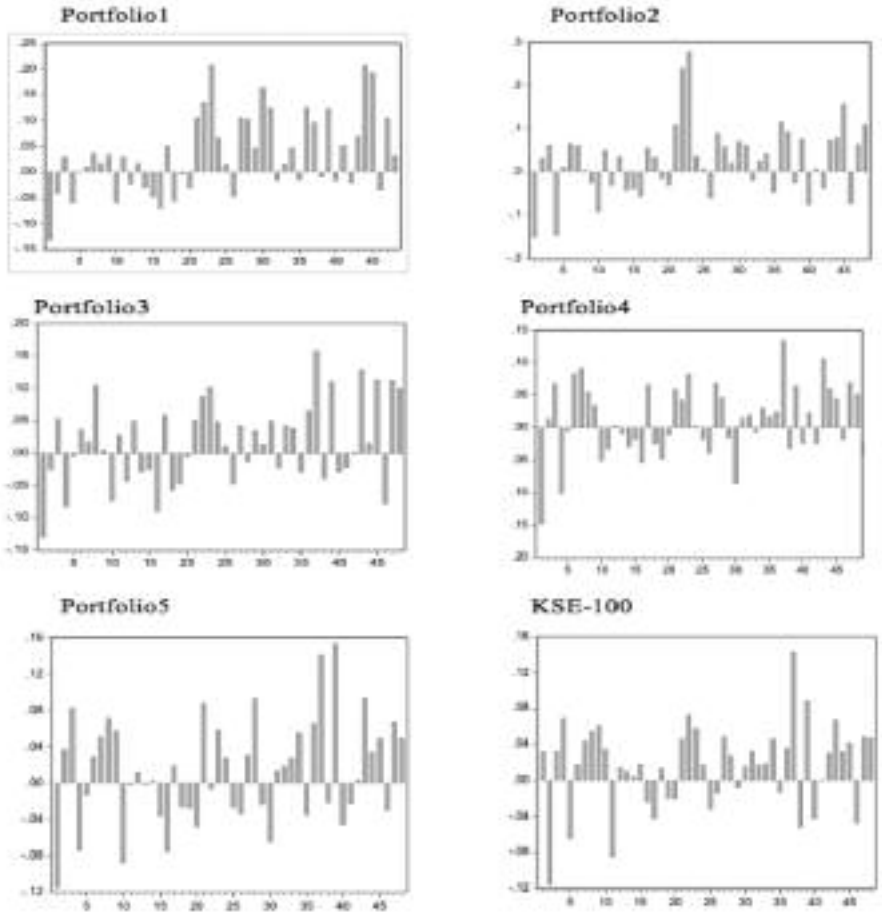

Figure 2. Graphical Representation of Time Wise Occurrence of Portfolio Returns

Table 3. Systematic Risk and Idiosyncratic Risk Equal Weighted Portfolios

Portfolio	Total risk	systematic risk	Idiosyncratic risk	IRTR (%)	Sharpe ratio
EWP: Panel A KSE-100 as market risk (σ^2m) in equation (3)					
1	0.0059	0.0004	0.0055	0.9293	0.4512
2	0.0068	0.0007	0.0061	0.8942	0.3173
3	0.0042	0.0003	0.0039	0.9294	0.2563
4	0.0031	0.0004	0.0027	0.8716	0.2179
5	0.0033	0.0003	0.0030	0.9138	0.2167
Average	0.0047	0.0004	0.0042	0.9077	0.2919
KSE-100	0.0022	0.0022			0.3335

Panel B. 65 Stocks as Market Risk (σ^2m) in Equation (3)

1	0.0059	0.0046	0.0014	0.2302	0.4512
2	0.0068	0.0056	0.0011	0.1693	0.3173
3	0.0042	0.0035	0.0006	0.1552	0.2563
4	0.0031	0.0023	0.0008	0.2587	0.2179
5	0.0033	0.0023	0.0010	0.2921	0.2167
Average	0.0047	0.0037	0.0010	0.2116	0.2919
65 stocks	0.0037	0.0037			0.3401

Portfolio	Total risk	systematic risk	Idiosyncratic risk	IRTR (%)	Sharpe ratio
VWP: Panel A. KSE-100 as Market Eisk (σ^2m) in Equation (3)					
1	0.0083	0.0012	0.0071	0.8508	0.5289
2	0.0062	0.0025	0.0037	0.5950	0.3285
3	0.0037	0.0004	0.0033	0.8926	0.2971
4	0.0031	0.0004	0.0027	0.8618	0.2774
5	0.0052	0.0003	0.0049	0.9349	0.0752
Average	0.0053	0.0010	0.0043	0.8270	0.3014
KSE-100	0.0022	0.0022			0.3335
Panel B. 65 Stocks as Market Risk (σ^2m) in Equation (3)					
1	0.0083	0.0060	0.0023	0.2804	0.5289
2	0.0062	0.0032	0.0030	0.4848	0.3285
3	0.0037	0.0030	0.0007	0.1857	0.2971
4	0.0031	0.0020	0.0011	0.3665	0.2774
5	0.0052	0.0024	0.0029	0.5494	0.0752
Average	0.0053	0.0033	0.0020	0.3734	0.3014
65 stocks	0.0037	0.0037			0.3401

***Notes**: In the table (3) EWP and VWP are abbreviated for equal-weighted and value-weighted portfolios. We calculate total risk, systematic risk, and idiosyncratic risk by using equation (2).*
Each portfolio has been divided into two parts. In one-part variance of KSE-100 index is used as total market risk, in the second part variance of all 65 stocks is taken as total market risk. These two variances are used in the calculation of systematic and idiosyncratic risks in both portfolios (EWP and VWP).
IRTR is the proportion of idiosyncratic risk in total risk.
Sharpe ratio is calculated by taking the ratio of the average excess returns of the portfolio to the standard deviation of portfolio return.
KSE-100 represents monthly excess returns on hundred index and 65 stock shows returns of all 65 companies included in our portfolios.

In Panel A of table 3, we have shown both systematic and idiosyncratic risks for all five portfolios in equal weighted and value weighted categories. Smaller companies tend to be riskier than larger firms (Fama & French, 1993), hence the idiosyncratic risk of smaller companies must be higher than that of larger firms,

and this relationship is proved in our analysis. In panel A. the idiosyncratic risk of small firm portfolios (portfolio1) is largest in both cases; when KSE-100 variance, and 65 stock variances are taken as total market risk. Idiosyncratic risk in porfolio1 (smallest) is 0.0055, while it is 0.0033 in portfolio 5 (largest). IRTR again proves this relationship true here. IRTR for portfolio1 is 92.93% which is higher in comparison to IRTR of 91.31% in the largest portfolios. Idiosyncratic risk is narrowly distributed EWP in panel A. range is 5% maximum. If we compare results of the value weighted portfolios with equal weighted portfolios, we do not find any different results as Idiosyncratic risk is higher for portfolio 1 (0.0071) in comparison to the largest portfolio which has an idiosyncratic risk of 0.0049.

Sharpe ratio confirms the results of Merton (1987), who propositioned that idiosyncratic risk contributes to explaining the returns of securities and their prices. Smaller securities must have higher Sharpe ratio because they are riskier than larger securities, hence they need more risk premium to compensate for any additional risk. Table 3, panel A and B again prove this relationship true. For smaller portfolios, we have higher Sharpe ratios. In EWP side portfolio 1 has Sharpe ratio 0.4512 which is the highest among all given portfolios. Panel B of the table also supports this argument. In this part of the table, we have the highest Sharpe ratio (0.5289) for portfolio 1 (smallest). This is again highest among all given portfolios. Sharpe ratio also proves the risk factor given by Fama and French (1993), in which they stated smaller firms are riskier, hence, they require more premium than larger ones. Highest Sharpe ratio securities are considered riskier, hence portfolio 1 is riskiest of all because it has the highest Sharpe ratio. Sharpe ratio in panel A and Panel B decreases across five portfolios as we move down from smaller to larger portfolios. This supports Fama and French (1993), findings that size is one of the factors in determining the price of an asset.

When we compare the Sharpe ratio of the KSE-100 index with that of all five portfolios we get some astonishing results. The market is considered as diversified portfolio hence it is considered to have zero idiosyncratic risks; thus, its total risk must be lesser than that of any of five portfolios and its Sharpe ratio must be highest among all five portfolios. What we observe in the table is that the Sharpe ratio of KSE-100 index is lesser than Sharpe ratio of portfolio1 in both EWP and VWP panels. This difference in results is attributed to survivorship bias. There might be some companies in the KSE-100 which have been replaced by other companies or delisted on the stock exchange in our period of analysis. Because of this return on individual stocks tend to be higher than returns on KSE-100, which leads to a higher Sharpe ratio for individual securities. If there were no survivorship bias, average excess returns of all 100 individual securities must

have equal to average excess returns of KSE-100 index. Therefore, because of equal returns and lesser risk, the KSE-100 index would have had a higher Sharpe ratio. Panel B of table 3 also prove the same relationship that the Sharpe ratio of 65 stocks is higher than that of portfolio 2-5 but it is lower than portfolio 1.

In table 4 we report the results of the market regression model (equation 1). Based on portfolio returns for the period 2010-2014, we tried to explore the relationship between portfolio returns and market returns. We run regression between portfolio returns and KSE-100 index returns. In results, our focus will be on the alpha coefficient. If alpha is significantly different from zero, this will help us rejecting the CAPM model. Our results for equal weighted and value weighted portfolios except portfolio 1 seem to support CAPM. The alpha coefficient of all portfolio is significantly different from zero at 1% significance level, this means that CAPM does not explain all the variation in the returns of these portfolios. In EWP, it under-predicts portfolio 1 and portfolio 2 and over-predicts portfolio 3-5. In VWP it over-predicts all portfolios except 3 and 5. The main reason behind this diversion in results is a higher Sharpe ratio and higher idiosyncratic risk. CAPM under predicts or over predicts securities with higher idiosyncratic risk (Bali et al., 2005), hence portfolio 1-5 has a higher idiosyncratic risk, thus, this supports the view that CAPM does not hold in every condition, rather we need a modified model for those securities which have a higher idiosyncratic risk. In other words, if we violate the CAPM assumption of diversification of securities, CAPM does not apply. Based on this argument we have great room for rejecting CAPM as a prime model in the asset pricing.

Table 4. Summary Results of Market Index Model for Value Weighted Portfolios and Equal Weighted Portfolios.

	1	2	3	4	5
Panel A: EWP					
β	1.1105	1.2329	0.9727	0.7851	0.7939
α	0.0118	0.0006	-0.0036	-0.0042	-0.0040
T-statistics (α)	2.0641	0.1153	-0.9269	-0.9557	-0.8329
P-value (α)	0.0447	0.9087	0.3588	0.3442	0.4092
Adjusted	0.7649	0.8307	0.8414	0.7357	0.7015
Panel B: VWP					
β	1.2707	0.9315	0.9052	0.7262	0.7965
α	0.0219	0.0067	-0.0006	0.0004	-0.0111
T-statistics (α)	2.9421	0.7854	-0.1479	0.0716	-1.3393
P-value (α)	0.0051	0.4363	0.8830	0.9433	0.1871
Adjusted	0.7135	0.5046	0.8103	0.6254	0.4388

***Notes**: EWP and VWP are abbreviated for equal weighted and value weighted portfolios. P-values and t-statics have been estimated by OLS regression.*

The results of simple and multiple regression models are reported in table 5. This table presents the second pass of our research model. To test the relationship between security returns with betas and idiosyncratic risk, we have taken average excess returns as dependent variable and betas of securities along with squired betas and idiosyncratic risk as independent variables. In model 1 intercept term is positive (0.0203) but it is significantly different from zero, which means that returns are mispriced. Coefficient of beta (γ^1) is near to zero (0.0007) and insignificant with P-value 0.9054. Hence, we reject the applicability of CAPM in Pakistan.

In model 2 we test the explaining power of idiosyncratic risk alone. Our results support the findings of (Bali et al., 2005). We find intercept value 0.0121 which is significantly different from zero, but its value is approximately zero and idiosyncratic risk is found to be a significant factor in explaining security returns. Idiosyncratic risk coefficient (γ^3) has a value of 0.5089 with the p-value of 0.0.0191, hence we must consider idiosyncratic risk when pricing the securities.

Model 3 tests nonlinearity of relationship between return and beta. The beta coefficient in model 3 is -0.0238 which is not consistent with existing theories of risk return relationship. Higher risk must earn a higher return, but in this case, it is the opposite of it. Secondly, the coefficient of beta and beta square are found to be insignificant which means that findings of Blume and Friend (1973), about questionable linearity of beta and returns, are found valid here.

Model 4 tests the effect of systematic and idiosyncratic risk at the same time. The coefficient of beta is insignificant with a p-value of 0.1072 but the coefficient of idiosyncratic risk is significant at the 1% significance level. The p-value for idiosyncratic risk is 0.0047.

Model 5 tests impact of all three factors together. Intercept is again approximately zero and significant with p-value 0.0050. No difference is found in estimates of beta and beta square. The coefficient of beta is -0.0216 with a p-value of 0.1705; this estimate again goes against the theory with a negative sign. Coefficient of "β^2" is 0.0078 with p-value "0.4825." On the basis of these results, we reject both CAPM and its linearity of relationship, but we consider idiosyncratic risk as a prime factor in explaining asset returns.

Table 5. Single and Multiple Regression Model Summary

		γO	γ^1	γ^2	γ^3
Model1	coefficient	0.0203	0.0007		
	t-statistic	4.3385	0.1193		
	P-value	0.0001	0.9054		
Model2	coefficient	0.0121			0.5098
	t-statistic	2.7312			2.4048
	P-value	0.0082			0.0191
Model3	coefficient	0.0253	-0.0238	0.0177	
	t-statistic	4.5666	-1.4757	1.6433	
	P-value	0.0000	0.1451	0.1054	
Model4	coefficient	0.0151	-0.0119		0.7613
	t-statistic	3.1870	-1.6348		2.9314
	P-value	0.0023	0.1072		0.0047
Model5	coefficient	0.0178	-0.0216	0.0078	0.6903
	t-statistic	2.9107	-1.3869	0.7065	2.4699
	P-value	0.0050	0.1705	0.4825	0.0163

***Note**: Coefficients, t-statistic and p-values are estimated by using OLS regression. P-values are tested at 5% significance level.*

CONCLUSION

In this study, the CAPM model has been tested as a tool for measuring security returns. Findings of Black (1972); Lintner (1975); Sharpe (1964), have been found invalid in the context of Pakistan. We have found the intercept of index model positive in nearly all instances. This shows that CAPM significantly underpredicts the returns of securities (Shaikh, Shaikh, & Shaique, 2017). CAPM also assumes that investors hold fully diversified portfolios, but when we violate this assumption and put idiosyncratic risk and systematic risk separately, we find idiosyncratic risk a significant factor in explaining the returns of securities. From this, we infer that for undiversified portfolios CAPM is not a proper pricing method and in that condition considering idiosyncratic risk is indispensable. Our two-pass model has also tested non-linearity of the relationship of beta and excess returns of portfolios. We have found robust evidence that the relationship between beta and security returns is weak. The empirical results of the model are consistent with Chan and Chui (1996), and Strong and Xu (1997). However, future studies may opt for further analysis in order to improve the generalized ability. Furthermore, the daily data may be used for the analysis purpose as it may give more accurate results.

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WHAT WORKS IN BLOG MARKETING? FIRM CREATED, OR USER GENERATED IN 2.0 WEB: EVIDENCE FROM A DEVELOPING COUNTRY

Syed Asad Hussain and Sana Abbas

ABSTRACT

This study provides insight on how the firm-created communication and consumer-generated communication messages through blog does, influence the perception of consumers and is a source of lifelong learning. This research also assesses the difference in perception of male and female based on their interaction with blogs. This research also investigates whether there is a notable impact of age factor on the consumer perception and how does information available through blog influences their perception formation. An online survey of one hyndred eighty one respondents from Pakistan analyzed statistically. Results suggested that firm created communication material on the blog, user-generated blog communication material, blog credibility, and trending brands on blogs are some of the factors related to blog marketing that influences the consumer perception about the brands. No significant relationship found between blog rating and complete product information availability on consumer perception whereas Blog credibility and trending brands on blogs positively affects the consumer perception about brands.

***Keywords**: B2C Marketing, Blog Marketing, Consumer Perception, Pakistan.*

INTRODUCTION

Around 40% of the world population has an internet connection today. Rapid growth in online internet users has forced the attention of companies to look towards the booming area for reaching out consumers. In the last decade, we have seen tremendous growth in the usage of social media in the cyberspace (See-To & Ho, 2014). This phenomenal success, has urged and increase the research studies on the effect of social media on the lives and behavior of people with two perspectives; first with Information systems (Pai & Arnott, 2013; Ransbotham & Kane, 2011; Gnyawali, Fan, & Penner, 2010) and second with marketing (Naylor, Lamberton, & West, 2012).

Until date, no formal classification of internet-based application is available on social media or internet literature. Yet, Constantinides and Fountain (2008), have classified social media into five categories, i.e., (i)blogs, (ii) social network sites (such as, Facebook, Twitter, Instagram and Google+, (iii) content communities (such as, YouTube and Wikipedia), electronic or E-Forums, and (v) content aggregators. Social networking sites among the social media categories lead, followed by Blogs and content communities.

The Internet is considered as an important mediator for increasing consumer socialization. Therefore, it is necessary to assess the influence of brand communication messages given through blogs and similar websites on the consumers' mindset (Vinerean, Cetina, Dumitrescu, & Tichindelean, 2013). It is highly important to understand the implications of the increase in interacting activities of users on the internet for brand management in the contemporary age. With web 2.0, a user can share content regarding their experience of any product or service (Lu, Chang, & Chang, 2014). Lee and Koo (2012), found that information provided by consumers review is trusted more than information provided by corporations, and probably their peer consumer evaluations affect their purchase decision.

Blogs have shifted the control of brand communication away from marketers and consumers play an important role in generating and sharing the communication messages for other consumers (Berthon, Pitt, McCarthy, & Kates, 2007). Therefore, 'online consumer reviews' are a more influential medium for communicating product/service information rather than traditional mediums (Lu et al., 2014). This has shifted the focus to consumer-driven communication approach, under which consumers' information requirement and priorities define the brand communications messages (Arnhold, 2008). Therefore, it is important to understand the implication of information shared through blogs for the brands. In addition, it is essential to examine how do consumers created communication messages influences the perception about brands. In this regard, it is important to understand preference, learning and value of blog-oriented marketing for effective brand management. A great influx of brand promotion through websites, blogs and social websites has captivated the attention of emerging companies, which aim at increasing their brand presence in the market.

Consumers look for information pertaining to a product before making

an actual purchase. This involvement increases greatly when it comes to specialized products. In this context, it is essential to assess how the availability of complete product information, blog rating by users, blog credibility, trending brands on blogs influences the consumer perception about the brand, which in turn might convince them to make a purchase decision. In addition, it is important for firms to assess the viability of putting an effort in blog marketing for effective brand management and engage consumers in a competitive environment.

The term 'blogs' is derived from weblogs, which coined in the early 1990s. The concept of blogs refers to websites containing blog posts which are written by a blogger (Dearstyne, 2005; Kumar, Novak, Raghavan, & Tomkins, 2004). Blog posts are generally categorized in different sections based on the area of relevancy and are viewable in reverse chronological order (Wright, 2005). Mainly, blogs were utilized for critique, viewpoints, opinion, and rich information sharing related to any topic or idea. Bloggers reflect their interests, opinions, or discuss the subjective elements that can be any tangible or intangible item. Blog sites can be referred to as a platform for collaboration for new or returning users to the websites (Gillett, 2007). Blogs are categorized into multiple categories based on the nature of content and objective. The most common form of blogging is personal opinion and views sharing through blogs. Another common form of blogging related to news/journalism related content sharing, which actively followed by a large segment of people who want news updates. Many companies, for the promotion of their brands, are actively pursuing Blogging. They pursue blogging to create consumer interest and engage customers for their brands (Gillett, 2007). One of the important categories of blogging relates to business and professional discussion. Another category is related to knowledge management applications and sharing information related to various topics. It includes insights and discussion on topics which influence and benefit the decision of consumers (Dearstyne, 2005).

BACKGROUND, OBJECTIVE AND SIGNIFICANCE OF THE STUDY

With the increase in internet usage and weblogs access, consumers are shifting their focus from conventional modes of obtaining information to newer modes. Blogs, being an open and wide source of information search presents a great set of information which helps them in getting feedback about product or brand and make a purchase based on the viewpoint of others (Lawson-Borders & Kirk, 2005). Mainly, blogger tends to be considered as a specialized person who has keen expertise in evaluating

and provide input or the ones who have used the products themselves and share their experiential thoughts.

Therefore, this study provides insight on how firm-created communication and consumer-generated communication through the blog, influences the perception of consumers. In addition, it would help in understanding the impact of complete product information availability, blog rating by users, blog credibility, trending brands on blogs on the consumer perception about the brand that in turn might convince them to make a purchase decision.

This research also assesses the difference in the learning of male and female based on their interaction with blogs. This research also investigates whether there is a notable impact of age factor on the consumer learning and how does information available through blog influences their perception formation. These results can help marketers in designing their brand communication plans based on gender and age factors.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

Blogs and Blog Marketing

Wright (2005, p. 7) Defined blogs as "A website comprising blog posts, or content written by a blogger, which are typically organized into categories and sorted in reverse chronological order". Kirby and Marsden (2006, p. 148) Defined blog marketing as "the use of weblogs to promote a brand, company, product or service, event or some other initiative".

Blogging has altered the communication pattern of marketers and consumers (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). Through blogging and social media sites (which are commonly used for micro-blogging), buyers' decision can be influenced for the products or services. These sites are actively used for products and services review; information shared through blogs is used by the consumers as a reference for decision making, which could be related to purchasing or recommending it to others. In addition, they can influence other buyers through blog posts and micro-blogging tweets.

It is important here to understand that blog post reviews are not the only factor which influences the perception and decision of other buyers. There are many psychosocial characteristics such as motivation, income level, demographic factors, mode of purchase, company presentation, brand value, brand promotion and preference rating through social networks and blogs (Ioanăs & Stoica, 2014).

Virtual communities (referred to as online groups) presence on the internet have improved the consumers, buyers, decision makers, companies, and societies access to information and communication effectiveness. Increase in blogging trend and review sites has resulted in better communication and reach to consumers (Kucuk & Krishnamurthy, 2007). Marketers are actively using digital marketing as a mean to reach the consumers and establish un-aided recall for their products or services. Social networking has further enriched these concepts by connecting millions of users across the world. Therefore, global marketing campaign mechanism has taken keen importance where firms have a limited budget and want to establish a favorable attitude among consumers for their brands.

Various blogging sites offer users an opportunity to create their individual blogs to express their opinion and views. In addition, there are organized and professional blogging options for corporates to market their products. Users actively use blogs, social networks, product information sites (such as Yelp), bulletin boards, and corporate sites to search for information. Marketers promote their brands and services through these websites such as Facebook, Digg and Yelp, as they have credible rating and acceptability across the globe and wide segment of consumers actively pursue information from these websites for their decisions related to purchase and recommendation. (Sin, Nor, & Al-Agaga, 2012; Hanna, Rohm, & Crittenden, 2011).Marketers, bloggers, and consumers share ideas, reviews, and assessments for a given service, brand, or product through these sites. Therefore, it is viewed as quick information sources by consumers when making a decision to purchase products for the first time or indulge in making a decision for the purchase of a new product or brand (Kozinets, 2002). The immense popularity of blogging sites has transfigured the marketing practices of brand promotion and advertising (Hanna et al., 2011). Blog advertising has gained popularity among consumers from the point of information search and marketers from the point of reaching consumers. These sites have actively played their role in influencing the consumer behavior; product search to post-purchase behavior have been the elements of discussion on blogs. Consumer share their experiences, causes of satisfaction or dissatisfaction about a brand, service or a product (Mangold & Faulds, 2009).

Weblogs, being the great influencers have been an interesting point for companies. It provides opportunities to businesses for engaging and interacting with the consumers, increase familiarity of their brands,

increase confidence and build favorable attitude for their brands (Davis Mersey, Malthouse, & Calder, 2010). However, mixed reactions have been observed for the preference of blogs as an effective tool in establishing the product appeal (Fitzgerald, 2007).

Major media companies sell the advertising content on blogs created by renowned personalities or entities. For example, 'DealBook' blog page of The New York Times has attracted a lot of advertising. Moreover, Intel Corp. and Paramount pictures have displayed their brands on David Carr's blog 'The Carpetbagger' (Fitzgerald, 2007). Many companies now display their brands through various media companies which provide advertising space on different websites, such as Samsung mobile are showcasing their smartphone brand on various technology blog sites through Google AdSense (Yang, 2011).

Companies are leveraging the traditional communication channel with an online environment to reach consumers and shape their behavior (Kaplan & Haenlein, 2010). Companies are promoting their brands and creating awareness through blogs. They can provide plenty of information related to their brand offering which is used by consumers in attitude formation towards any brand (Williams & Williams, 2008). A survey conducted by Deloitte USA reported that 62% of consumers in the USA read online reviews before purchasing any new brand or trying a new product. 98% of respondents considered the reviews as reliable despite assessing their validity; and more than 80% consumers buying intention was influenced by the reviews given on blogs (Pookulangara & Koesler, 2011). Witnessing the potential in the blog advertising and role of social media blogs in influencing the consumers, nearly every big company has its presence on blog sites, either it is Facebook, Yelp, Twitter or any other blog sites (Smith, Fischer, & Yongjian, 2012).

Corporate presence on blogs to attract consumers and strengthening their brand recognition through blog communication has posted merits and demerits. Ioanăs and Stoica (2014), stated that many users post negative views about the brand of a company, which affect the brand image in the eyes of people who were not aware of the brand earlier. Brand communication messages by the company and users help in creating favorable as well as the unfavorable brand image for the users who read information on blogs before taking any decision related to purchase or recommendation (ibid). Previous research has indicated that even a small amount of negative information from a few postings can have substantial impacts on consumer attitudes (Schlosser, 2005).

Consumer Perception

Schiffman and Kanuk (2007, p. 172), define consumer perception as "The process by which an individual select, organizes, and interprets stimuli into a meaningful context based on his expectations, values, and needs". Consumers use social networks in daily life for various reasons. Most of them want to maintain relationships with relatives or colleagues/friends. Maintaining interpersonal connectivity between online users of a social media channel has benefits derived from establishing and maintaining contact with other people in a manner of giving social support, friendship, and intimacy (Smudde, 2005). These allow users to connect with peers by adding them to networks of friends, which facilitates communication, particularly among peer groups (Ahuja & Galvin, 2003). Online groups exert a noticeable influence on the behavior and consumer buying intent and implicitly on the purchase decision. For example, social media websites provide a public forum that gives individual consumers their own voice; as well access to product information that facilitates their purchase decisions (Kozinets, De Valck, Wojnicki, & Wilner, 2010).

Shopping has always been a social experience and social networking allows consumers to interact with individuals—many of whom are likely strangers when we talk about online. Cultural aspects have an influence on consumers' usage of social networks and a great impact on the online purchase intentions (Pookulangara & Koesler, 2011). Due to the advantages of social media in connecting businesses directly to end-consumers, in a timely manner and at a low cost (Kaplan & Haenlein, 2010), has been seen that a great influence on customer perceptions and behaviors (Williams & Cothrel, 2000), and has been brought in the center of attention in different industries in the last few years. Based on the above background, literature survey and objectives of research, the author formulated following hypotheses:

H_1: Firm-created blog communication material positively influences the consumer perception about brands.

H_2: User-generated blog communication material positively influences the consumer perception about brands.

H_3: Availability of complete product information on blogs influences consumer perception formation.

H_4: Higher blog rating by users helps in positive perception formation about brands.

H_5: Blog credibility positively influences the consumer perception about brands.

H_6: Trending brands on blogs positively affect the consumer perception about brands.

H_7: There is a significant difference between male and female in the learning perception about brands based on their interaction with blogs.

H_8: There is a significant difference between teenagers and adults in the learning perception about brands based on the information available through blogs.

RESEARCH METHODOLOGY

Participants and Methods of Data Collection

An online questionnaire was developed to conduct a survey to assess the impact of blog marketing variables on consumer perception. Data was collected using the online approach as it was quick, easy to administer, and flexible based on the time requirement in gathering data and approach the relevant respondents. The questionnaire was developed using a free survey website by google survey and links shared through social media platforms like Facebook and Google+.

Data was collected using 'convenience sampling' method that is a non-probability based sampling technique. The scope of the data collection was limited to Pakistani nationals. The focus on the survey was to target respondents who have been using the internet and have access to blog sites for information gathering and sharing purpose. Convenience sampling approach was adopt considering the easiness to approach relevant population segment and the time factor. No incentives were offered to encourage participation in the survey. It solely based on the respondent's interest to share their views.

More than 300 potential respondents were shared the online questionnaire link to participate in the survey. However, only 181 people filled the online questionnaire, so the response rate was 60.3 %. The sample selected for the survey include people who are using the internet and spend their time seeking information online related to different brands before either taking any decision, related to purchase, or recommending it to others.

Instrument of Data Collection

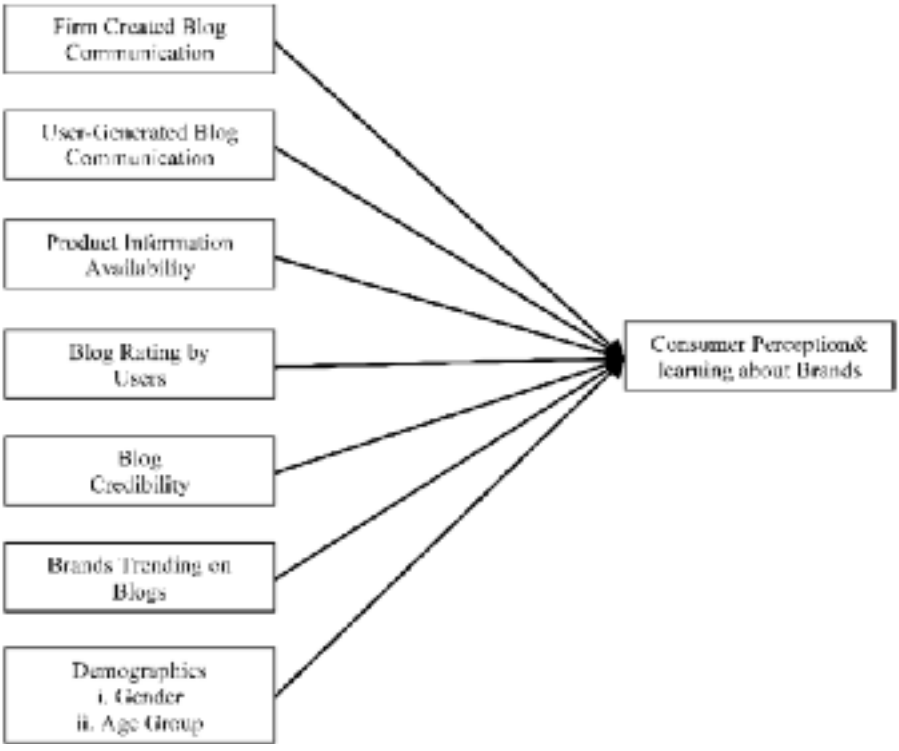
Data collected using a structured questionnaire. Likert scale items were developed to measure the consumer perception about brands, firm-created blog communication, user-generated blog communication, product information availability, blog rating by users, blog`s credibility, and brands

trending on blogs. Twenty-Seven (27) scale items are defining these seven (7) variables. All items measured on a five-point Likert scale. Respondents also answered demographic information, which includes gender, age, income level, and occupational status. Apart from the entire question, additional five (5) general questions were included related to whether respondents follow any blogs, the frequency of visiting the blogs, and the product categories for which they seek information through blogs.

RESEARCH MODEL

The diagram below displays the conceptual research model that is been tested in this research study. Firm-created blog communication, user-generated blog communication, product information availability, blog rating by users, blog`s credibility, brands trending on blogs are independent variables of the research. Consumer perception about brands based on their online interaction with the blogs is the dependent variables. Demographics used as a moderator variable in the study; differential in consumer perception based on gender and age group factor has been assessed in the study.

Figure 1. Conceptual Framework (Author Compilation)



RESULTS

Preliminary Analyses

The total sample size for the survey was 181. Only duly filled questionnaires were included in the analysis. In terms of gender participation in the survey, males dominated the representation in the survey. Sample mix include 63% representation of males and 37% females. Respondents were categorized into two groups based on age factor; i.e. Youngsters (age less than 30 years) and Adults (age more than 30 years). 49.7% sample has the representation of youngsters and 51% sample have the representation of adults. The below mentioned table shows the segregation of the sample based on demographic characteristics.

Table 1. Demographic Profile

Items	**Frequency**	**%**		**Frequency**	%
Gender			**Income Level**		
Male	114	63%	Less than 25,000	34	19%
Female	67	37%	25,001-50,000	70	39%
			50,001-75,000	51	29%
			75,001-100,000	19	9%
			More than 100,000	7	4%
Age			**Occupational Status**		
Less than 20 Years	27	11%	Employed	115	64%
20-30 Years	63	40%	Self-Employed	29	16%
31-40 Years	49	30%	Housewife	16	9%
41-50 Years	28	14%	Student	19	10%
More than 50 Years	14	5%	Unemployed	2	1%
Total	**181**	**100%**		**181**	**100%**

Reliability Analysis

The questionnaire included 27 Likert scale statements to capture users' responses for the 6 independent variables and 1 dependent variable. In order to assess the internal consistency between the data variables items and the reliability scores for the variables, Cronbach's alpha was determined. 'Firm created communication material' and 'Consumer perception' variable items have the highest internal consistency with scores of 0.86 and 0.84 respectively. All variables have internal consistency score, which is higher than the satisfactory level.

Table 2. Reliability Analysis & Collinearity Statistics

Variable	No. of Items	Cronbach's Alpha	Tolerance	VIF
Firm-created blog communication	4	0.860	0.868	1.153
User-generated blog communication material	4	0.756	0.711	1.406
Blog credibility	4	0.796	0.532	1.878
Trending brands on blogs	3	0.761	0.585	1.710
Consumer Perception	6	0.844		

Above table shows the multi-collinearity test score for the independent variables having a notable impact on the variable 'consumer perception'. None of the variables shows inter-correlation as they have tolerance score of more than 0.2 and Variance Inflation Factor score of less than 05. Therefore, none of these variables had inter-correlation.

Correlation Test

In order to determine the relationship between independent variables (firm-created blog communication, user-generated blog communication, product information availability, blog rating by users, blog credibility, and brands trending on blogs) and the dependent variable (i.e. consumer's perception about brands), Spearman's Rho correlation test has been used. All variables were measured on a scale of 1 to 5; therefore, Spearman's Rho correlation test was applicable. Results showed that firm-created blog communication, user-generated blog communication, blog credibility, and brands trending on blogs significantly correlated with consumer perception about brands. These variables have a varied but moderate relationship with the dependent variable as shown in the table below. However, no significant relationship found between product information availability, blog rating by users and consumers' perception.

Table 3. Correlation Test

Variable	Spearman's Rho	Sig.	N
Firm-created blog communication	*.367***	*.000*	181
User-generated blog communication	*.335***	*.000*	181
Product information availability	.129	.141	181
Blog rating by users	-.083	.345	181
Blog`s credibility	*.391***	*.000*	181
Brands trending on blogs	*.490***	*.000*	181
Notes: **Correlation is significant at the 0.01 level (two-tailed).			

Testing Hypotheses 1-6. Multiple Linear Regression

In order to test hypothesis 1-7, multiple linear regression technique has been applied to determine the impact of independent variables (firm-created blog

communication, user-generated blog communication, product information availability, blog rating by users, blog`s credibility, brands trending on blogs) on the dependent variable (consumer perception about blogs). MLR (multiple linear regression) test model has appeared significant with scores of (F=34.489, p=0.000) which shows that model is useful. R-square (coefficient of determination) has a score of 0.523, which suggests that all significant independent variables explain 52.3% variation on the dependent variable, i.e. Consumer perception about brands.

Table 4. Multiple Linear Regression Test – Consumer Perception about Brands

R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
.723[a]	0.523	0.507	0.5146	34.489	.000[a]

Stepwise MLR test technique was applied using the SPSS 19 software. It automatically ignores the insignificant variables to improve the effectiveness of the model in sequence. Test result shows that 4 independent variables i.e. firm-created blog communication (t=2.593, sig =0.011), user-generated blog communication (t=2.814, sig =0.006), blog`s credibility (t=2.997, sig.=0.003), and brands trending on blogs (t=4.032, sig.=0.000) have significant impact on the consumer perception about the brands (as shown in Table 5). However, product information availability (t=-0.090, sig =0.928) and blog rating by users (t=-1.779, sig =0.078) did not produce any significant results for the consumer perception (as shown in Table 5). Therefore, hypotheses 1, 2, 5, and 6 are accepted and supported. Whereas, hypotheses 3 and 4 are rejected. Unstandardized coefficient (B) results show that trending brands on blogs (b=0.332) contribute more to the dependent variable followed by the blog credibility factor (b=0.309).

Table 5. Multiple Linear Regression Test – Included Variables

Independent Variables	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
(Constant)	-.260	.385		-.675	.501	-1.021	.502
Firm Created MCommunication Material	.155	.060	.171	2.593	.011	.037	.274
User Generated Communication Material	.270	.096	.205	2.814	.006	.080	.460
Trending Brands on Blogs	.332	.082	.325	4.032	.000	.169	.495
Blog Credibility	.309	.103	.253	2.997	.003	.105	.512

Table 6. Multiple Linear Regression Test – Excluded Variables

Independent Variables	Standardized Coefficients (Beta)	t	Sig.
Product Info Availability	-0.006	-0.090	.928
Higher Blog Rating	-0.111	-1.779	.078

Based on the results, the conclusion was that firm-created blog communication material, user-generated blog communication material, blog credibility, and trending brands on blogs positively affects the consumer perception about brands. Whereas, no notable relationship identified for the complete product information availability, and higher blog rating with respect to influencing the consumer perception formation about brands based on their interaction with blogs.

Testing Hypotheses 7-8. Independent Sample t-test

Hypotheses 7 and 8 aims at determining the differences between the male and female, and youngsters and adults' learning about brands based on their interaction with blogs to gather information about various brands. Therefore, independent sample t-test was used for both hypotheses as it helps in determining the significance of the difference between two independent groups. In the case of hypothesis 7, male and female; and in the case of hypothesis 8, youngsters and adults. Below mentioned table presents the group statistics for the differences between these two independent groups.

Table 7. Descriptive Statistics

Variables	Demographic Variable	Mean	Std. Deviation	Std. Error Mean
Consumer Learning Perception About Brands	Male	4.0806	.70196	0.077
	Female	3.9921	.78896	0.011
	Youngsters	4.0851	0.72645	0.084
	Adults	4.0002	0.74573	0.098

In order to test the variance equality, Levene's test for equality of variance was used for both hypotheses testing. Results showed that data variance for male and female is insignificant (F=0.564, sig =0.454) with respect to perception level. Similarly, data variance for youngsters and adults is also insignificant (F=0.177, sig =0.675) with respect to perception level. This signifies that variance is equal for data set of both groups.

The t-test for equality of means (equal variance) shows insignificant results for the perception level difference between male and female (t=0.664, df=179, sig =0.508). This suggests that there is no notable difference in the perception

level of male and female and representation from both groups is likely to exhibit similar perception based on their interaction with blogs. Also, no significant difference has been proved between youngsters and adults with respect to their perception level about brands based on the interaction with blogs. Results appeared insignificant (t=0.656, df=179, sig =0.513) suggesting no valuable difference. Therefore, hypotheses 7 and 8 both not supported.

Table 8. Independent Sample Test

Variables	Levene's Test		t-test for Equality of Means				
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Consumer Learning Perception about Brands – Gender	.564	.454	.664	179	.508	.08852	.13325
Consumer learning Perception about Brands – Age Group	.177	.675	.656	179	.513	.08496	.12951

Hypotheses Assessment Summary

Table 9. Hypotheses Assessment Status

Hypotheses	Testing Specifications		Empirical Conclusion
	t-statistics	*Prob.*	
H1: Firm-created blog communication material positively influences the consumer perception about brands.	***2.593***	***0.011***	***Supported***
H2: User-generated blog communication material positively influences the consumer perception about brands.	***2.814***	***0.006***	***Supported***
H3: Availability of complete product information on blogs influences consumer perception formation.	***-0.090***	***0.928***	***Not Supported***
H4: Higher blog rating by users helps in positive perception formation about brands.	***-1.779***	***0.078***	***Not Supported***
H5: Blog credibility positively influences the consumer perception about brands.	***2.997***	***0.003***	***Supported***
H6: Trending brands on blogs positively affects the consumer perception about brands.	***4.032***	***0.000***	***Supported***
H7: There is a significant difference between male and female in the learning perception about brands based on their interaction with blogs.	***.664***	***.508***	***Not Supported***
H8: There is a significant difference between teenagers and adults in the learning perception about brands based on the information available through blogs.	***.656***	***.513***	***Not Supported***

DISCUSSIONS AND IMPLICATIONS

This research provides ample insight into the impact of blog communication material in influencing the consumer perception about the brands. Firms which are aiming at forming a positive perception about their must target the potential consumers through blogs. In contemporary marketing environment, digital media role is very important as a large number of people are now using electronic media to gather information about products (Mangold & Faulds, 2009). People aim at gaining sufficient information before actually buying a product. Blogs and social websites play an important role as consumers can reach actual users of the brand who share information about their experience and help shape consumer perception.

This study suggests that the information provided by the firms on blogs about their brands play an important role in shaping the consumer perception. In addition, consumer-generated material such as product reviews and recommendation articles play an important role in forming the consumer perception (Smith, Fischer, & Yongjian, 2012). Firms should target those blogs and social websites that have higher credibility among consumers as it sends a positive message about their brand image. In addition, those brands that are greatly discussed on blogs or which a group of people is favoring tends to create a positive impact on the consumer perception level about the brands.

This research also suggests that male and female, youngsters and adults are equally likely to be influenced by the blog communication messages and are likely to perceive information in a similar manner. Therefore, marketers are not required to categorize their communication messages separately for gender and age differences. Based on gender and age, men and women are likely to form a perception about brands in a similar manner based on their interaction with blogs to gather information about brands.

Research results suggest that material provided by the firms about their brands, information shared by consumers about the brands, blogs' credibility, and the brands, which are trending on blogs, tend to have a notable impact on the consumer perception about the brands. This shows that firms should focus on sharing information about their brands using blogs, which tend to have higher credibility and better acceptance among consumers. Consumers actively search for information about the brands using blogs and look for information that was shared by other consumers to assess the brand quality and image based on their experience.

The research did not provide concrete evidence with respect to differences in the perception of male and female, who access blogs for information about brands. In addition, no such difference reported for youngsters and adults. Therefore, it was assumed that all people falling under these categories are likely to exhibit similar traits with respect to accessing and evaluating the information. Firms may target both groups with similar marketing communication messages using blogs to influence the perception of consumers about their brands.

Blog marketing should be the key marketing aspect of brand communication strategy as it helps in shaping consumer perception about brands. It is important to provide ample information to potential consumers through blogs as it accompanies by users' experience information. In particular, consumers tend to focus on firm provided information, information and review information shared by consumers, evaluate the blogs credibility and trending brands. Therefore, firms need to focus on marketing brands through blogs that have higher credibility among consumers as it would help in forming a better perception about the brands. Marketing messages accompanied by consumer-shared information enhance the effectiveness of blog marketing campaign.

This research did not assess the impact for a specific kind of product or from a particular category. Therefore, in future, researchers can focus on assessing the impact of blog marketing for different product categories. Also, it is important to assess the impact of blog marketing on consumers' intention to indulge in the purchase and recommend it to others. In addition, consumers' education level, income level and other demographic characteristics impact on consumer perception level would be of significant importance to assess.

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PROFITABILITY OF THE MOVING AVERAGES TECHNICAL TRADING RULES IN AN EMERGING STOCK MARKET: A STUDY OF STOCKS LISTED IN PAKISTAN STOCK EXCHANGE

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ABSTRACT

This study examines the profitability of Moving Averages (MA) timing strategy over the buy and hold strategy for individual stocks listed at Pakistan Stock Exchange (PSX). We applied Han, Yang, and Zhou (2013), methodology to individual stock returns and found inconclusive evidence of MA timing strategy's predictive ability to earn higher returns over buy and hold strategy. We also report market risk-adjusted returns to remove any market movement effects and apply alternative moving averages lag lengths to check the robustness of our results. We observe individual stock returns are noisier than portfolio returns and the simple technical trading rule of moving average lack the ability to predict individual stock returns. We propose the use of more complex trading rules in future studies to ascertain the profitability of technical trading rules in individual stocks.

Keywords. *Technical Analysis; Individual Stocks; Moving Average (MA); Buy and Hold Strategy; Pakistan Stock Exchange (PSX).*

INTRODUCTION

Technical analysis literature provides plentiful research on the profitability of technical trading rules for stock market indices and portfolios (de Souza et al., 2018; Yu, Nartea, Gan, & Yao, 2013; Gunasekarage & Power, 2001), but there are very few studies focusing on the applicability of technical trading rules on individual stocks trading. In this study we apply the technical trading rule of moving averages on individual stocks listed in Pakistan Stock Exchange (PSX); we find positive MAP returns for low volatility stocks while positive results disappear for high volatility stocks. These results are consistent with previous studies including a study by Eljelly (2004), who found a

significant negative relationship between the firm's profitability and its liquidity level, as measured by the current ratio. Chang, Chan, and Chiang (2014), conducted a study of individual stocks in an emerging market, and found a tradeoff between liquidity and profitability of variable moving average stock returns; correspondingly we report a parabolic relationship between volatility and stock returns. Difference between moving average and buy and hold returns (MAPs) show positive returns for first three quintiles ranging from 4.53% to 6.73%, whereas last two quintiles show an extreme decrease in MAP returns ranging between -8.18% to -163.33%. Average success ratios of 39.4% for MAPs provide considerable evidence to conclude that MA timing strategy is not applicable to individual stock trading. Risk-adjusted returns also show comparable results as of raw returns with high R-Square values of 44% on average across quintiles implying the strength of the model and the accuracy of results.

We also report MAP return for alternate lag lengths and end up getting the same result pattern across quintiles as of 10-day moving averages. MAP returns diminish till MA 50-day lag length as compared to 20-day lag returns then returns show an increasing pattern for MA 100 and 200-day lag lengths. We report positive BETCs for first three quintiles and negative BETCs for last two quintiles across all lag lengths. Thus, the negative BETC values for higher volatility stocks support our claim of MA timing strategy being unsuccessful in predicting market prices for individual stocks listed at PSX.

The rest of the paper is organized as follows: next section summarizes the literature of technical analysis mainly in currency market, proceeding section provides outline of methodology used in the study, empirical analysis of results, robustness of results for MA timing strategy and conclusion to the discussion on MA timing strategy results are given in the subsequent sections.

LITERATURE REVIEW

Technical analysis literature provides very in-depth analysis on a stock index and portfolio profitability but the profitability of technical trading rules for individual stocks have not been studied at length in technical analysis literature. Chang et al. (2014), studied the profitability of simple technical trading rule of variable moving averages (VMA) using individual stock data from the Taiwan Stock Exchange (TWSE). This study used trading volume as a proxy for stock liquidity and observed that by and large

VMAs do better than buy and hold strategy; additionally, they found out a decreasing trend in profits of VMAs with increasing trading volume for shares showing a tradeoff between stock liquidity and profitability of VMAs.

Due to the fact that currency market literature considers the profitability of technical trading rules for individual currencies; we use currency market technical analysis literature for individual stocks. McKenzie (2007), using simple technical rules variable length moving averages, fixed length moving averages and trade range breakout, studied seventeen emerging markets for the profitability of technical trading rules and found market conditions and trading volume information can be used to earn higher returns than the market. Currency investments in emerging economies provide up to 20% annual return in the presence of 5% annual cost and trading rules are consistent over time (Chong & Ip, 2009). Many researchers, (Chang et al., 2014; Fernández-Pérez, Fernández-Rodríguez, & Sosvilla-Rivero, 2012), found a higher return for technical trading rules over buy and hold strategy for 25 currencies out of 39 in the presence of transaction cost, and they conclude market inefficiency as being the reason for the success of technical trading rules in predicting the market. Tajaddini and Crack (2012), report profitability of long and short momentum strategies to be 1 and 3 % after considering the real transaction cost; they also indicate the decrease in profit for the last 5 years in the sample period. Coakley, Marzano, and Nankervis (2016), studied 22 currencies quoted in US dollar over a period of 1996 to 2015. They found simple trading rules including moving averages and complex trading rules like Bollinger bands and relative strength index as profitable. However, after robustness test for data snooping bias, only complex trading rules like relative strength index and Bollinger band were found profitable, especially in last decade of the sample period from 2006-2015, indicating an increase in the market efficiency. Similarly, Fernández-Rodríguez, Sosvilla-Rivero, and Andrada-Felix (2003), compared the returns transformed by using nearest neighbor non-linear predictors with moving average and found that later provide less profitable results in the presence of transaction cost and interest rate.

From the technical trading rules literature of currency market, it is pertinent to conclude that foreign exchange markets have become more efficient over time making it difficult to do better than market using simple trading rules (Arthur, 2018; Katusiime, Shamsuddin, & Agbola, 2015). However, it is found that complex and more advanced trading rules still

provide substantial profits. Relating stock market performance in the emerging economies and stock trading, strong reliability on the Pakistan stock market has been seen recently. According to Khan, Khan, and Ahmed (2017), as the local and international investors are now coming back to Pakistan, the Pakistan Stock Exchange will thrive and soon protrude in the emerging stock markets. Thus, this study signifies an important topic for understanding the stock market behavior and predictability trends.

RESEARCH QUESTION

Through the extensive review of the available literature on the moving average technical trading rules and a thorough study of the trends and behavior of the Pakistan Stock Exchange, this research study intends to inquire upon the following research question:

- How does the application of Moving Average technical trading rules provide better analysis and insight for the Pakistan Stock Exchange?

DATA AND RESEARCH METHODOLOGY

This study is an extension of our previous study, 'Profitability of the Moving Averages Technical Trading Rules in an Emerging Stock Market: A Study of Pakistan Stock Exchange'**.** We take data for the period starting from 30th Dec 2005 to 31st Dec 2015 using DataStream; data consists of four data series namely; i) individual stock prices of 271 stocks for sample period, ii) market index prices of 2,610 trading days, iii) 30-day Treasury bill rates for sample period, and iv) daily dates for sample period. Furthermore, R program's statistical computing module is use for data analysis.

Moving Average (MA) timing strategy is applied to find individual stock returns and examine whether MA timing strategy is successful in producing a higher return than buy and hold strategy for individual stock returns. First, we calculated the daily returns and annualized standard deviation for each individual stock. There we put a filter for a stock return greater than 300% and a standard deviation of 0%. We calculated 10-day MA returns for each stock applying a filter for infinite values. Now we calculated MAP returns for individual stocks using 10-day MA returns and buy and hold returns based on the buy signals. After calculating the MAP returns, five quintiles based on individual stock standard deviation were created. After portfolios were formed, three different returns namely i) buy and hold strategy returns, ii) MA timing strategy returns and iii) MAP returns for each portfolio formed in the previous step, were calculated.

Additionally, standard deviation, T-stat, Skewness, and Sharp ratio for each portfolio across different returns isalso calculated. The results produced Table 1 that is used for analyzing the excess returns of MA timing strategy over buy and hold strategy. After analyzing the profitability of MAP raw returns, CAPM to MAPs returns is applied to calculate risk-adjusted returns and the profitability of MAP risk-adjusted returns is thus analyzed in Table 2.

For analyzing the robustness of our results, two methods are used; i) Alternate lag Lengths and ii) Break Even Transaction Cost (BETC). We calculated alternate lag lengths of 20, 50,100 and 200 days to analyze the effect of lag length on the profitability of MA timing strategy returns; this effect is analyzed in Table 3; with an added analysis of random switching strategy. Finally, in Table 4, holding periods, trading frequency and BETC are calculated to analyze the efficiency of MA timing strategy in the presence of transaction cost.

EMPIRICAL ANALYSIS AND RESULTS

The raw and risk-adjusted return of MA timing portfolios in Table 1 and 2 are reported respectively. All the tables are given in the Appendix. Table 1 presents the average returns on individual stocks, returns on MA (10) strategy and the parallel MAPs categorized into five groups by an increasing function of individual stock volatility. The analysis is performed on individual stocks and grouped on the basis of individual stock volatility. Skewness and Sharpe ratio are used to compare and interpret the results.

Panel A in Table 1 shows the average returns and basic characteristics of the buy-and-hold strategy for the quintile individual stock. The annual average returns vary from the lowest, 14.45% to the highest, 92.69%. There is a significant increase in return from the fourth quintile to the highest volatility quintile. For the buy-and-hold strategy, the difference between the highest and the lowest quintile is average 78.24% per year which is highly significant. The skewness in panel A displays negative numbers except for the highest volatility portfolio. The range of skewness is from -0.33 to 0.28. Furthermore, the Sharpe ratio states the average return in excess of the risk-free rate per unit of total risk. Panel A clearly show that all Sharpe ratios are significant especially the highest quintile with a Sharpe ratio of 2.71. There is no significant difference between the results of the portfolio approach and individual stock approach.

Parallel to panel A, panel B represents the results of 10 days MA strategy on the individual stock basis. Differ to the results in panel A and 10-day MA strategy of the portfolio approach, the returns on MA timing strategy of individual stocks increase through the first 3 quintiles and decrease through the last 2 quintiles. Compared to the portfolio approach, the MA returns on first 3 quintiles are still higher than the returns in panel A but lower than the MA returns of portfolio approach. For example, for the lowest quintile, the return is 18.98% which is higher than 14.45% in panel A and lower than the MA return on portfolio approach which is 18.98% versus 21.75%. The decrease from the third quintile to the highest quintile is significant. Especially the MA return of the highest quintile highly differ to the MA return of portfolio approach, -70.64% versus 86.66%. Hence, the MA timing strategy is not working well on an individual stock basis for highly volatile stocks. Furthermore, the MA timing quintiles display a similar scale but all positive skewness across the volatility quintile. The results of Sharpe ratio for MA timing quintiles are much higher than for the buy-and-hold quintiles except the highest quintile with a Sharpe ratio of -4.44%.

Panel C reports the results for MAPs which explains the profitability of MA timing strategy over buy and hold strategy. Differ to the portfolio approach, the results in panel C are not significant across 1 to 4 quintiles, ranging from -8.18% to 6.73%. The MAP returns on the fourth quintile and the highest quintile are both negative. MAP return of -167.86% for the highest quintile again shows the MA strategy is not working well on high volatile individual stocks. Similarly, to portfolio approach, the skewness in panel C is large and positive except the highest volatility quintile. The success ratios are all below 50% and with average 39% across the quintiles. Thus, the MA strategy is unlikely to be successful in individual stock estimation.

Overall, the MA strategy is not successful in producing consistently high returns to beat buy and hold strategy for individual stocks. For low volatility level, the MA timing strategy still slightly outperforms the buy-and-hold strategy. However, for high volatility level, the MA strategy underperforms then buy-and-hold strategy. Moreover, high t-statistic values of all returns in Table 1 show the results are highly statistically significant. Low success ratios expose MA strategy is not likely to success across all quintiles.

Table 2 presents the results of alphas, betas and adjusted R-square by computing CAPM regression based on 10-day MAPs. The changes of alpha by

increasing volatility follow the same pattern as returns on 10-day MA strategy through all quintiles. The alphas increase across the first three quintiles and decrease after. Compared to portfolio approach, the alphas are positive and relatively small across the first three quintiles, ranging from 5.62 to 8.82; the alphas of the fourth quintile and the highest quintile are negative and significantly less than that for portfolio approach, -5.44 versus 20.30 and -160.69 versus -10.33 respectively. The negative alphas are due to underperformed MA strategy for high volatile category individual stocks. As the result, the alpha between the highest and lowest quintile is considered negative. Most t-statistic values are either greater than 2 or less than -2 except the fourth quintile (-1.67) which shows that most values are statistically significant.

Compared to the portfolio approach, the individual stock approach has substantially similar and slightly larger market betas. There is a downward trend through the first 4 quintiles which from -0.22 to -0.55 and a slight rise for the highest quintile (-0.53). Negative betas present that increase in the market risk premium gives a negative impact on the MAPs and investors are likely to invest in risk-free rather than invest in the stock market.

The results of adjusted R-squares show the confidence that the performance of the model can be explained by the variables. Compared with the portfolio approach, adjusted R-squares for the individual stock are substantially similar or larger. This presents the CAMP model can explain more of the result under individual stock approach than that under the portfolio approach. An average 43.39% adjusted R-square across quintiles shows that 43.39% of the results can be explained by the risk exposure as measured by beta. As same as portfolio approach, the adjusted r square of the highest volatility quintile is also low (18.26%).

Robustness of the Results

The robustness of the MA timing strategy's profitability for the individual stocks listed on PSX is discussed in the following segment, considering alternative lag lengths, with the objective of scrutinizing MA timing strategy and BETC estimation.

Alternate Moving Averages Lag Lengths

Table 3 shows the profitability of individual stock quintiles applying 20-, 50-, 100- and 200- day moving averages. It is clear that the results are like the 10-day moving average timing strategy i.e.; the average returns, as well as the CAPM alphas, are negative. Table 3 reports decrease in average returns and CAPM alphas of individual stocks with an increase in lag lengths. For example, the average

individual return for the lowest quintile for the 20-day lag is 6.59% while it is 5.02% for the same quintile for 200-day lag. Random switching strategy results are shown in the last column of Table 3. This strategy switches, by random chance between the buy and hold and risk-free T-bills. It generates negative results along the quintiles with -3.40% being the lowest quintile's annualized average return while -42.65% is the annualized average return of the highest quintile.

Predominantly, it can be summarized that the Buy and Hold strategy outperforms the Moving Average timing strategy of quintile individual stock for high volatile portfolios. This is one the striking feature of individual stock analysis. This feature is mainly due to the presence of higher noise in individual stocks in comparison with that of the portfolio.

Average Holding Period, Trading Frequency and Break-Even Transaction Cost (BETC)

The result in Table 4 reports average holding periods, trading frequency and break-even trading cost (BETC) across different lag lengths of moving average strategy based on individual stocks. It is clearly shown that for same level volatility, the holding days increase as the lag length increase. For instance, the holding days of the lowest quintile are 37.88, 50.37, 77.85, 98.33 and 154.39 respectively from 10-day MA to 200-day MA clearly showing an increasing trend. In contrast to portfolio approach, individual stock approach mostly has longer holding period each corresponding lag length and volatility. The only outlier 121.81 for portfolio approach is less than 165.30 positions in 2nd volatility with a lag length of 200 which is ignorable.

The trading frequency results can be directly reflected on the lengths of holding days. For the same lag length, the more days the stocks are held, the less frequent the stocks are traded. The trading frequency of 10-day MA is about 5% of the total days and 200-days MA is about 0.9% of the total days. The reason is that there is an increasing function of holding days by increase the lag length, so on average, the results for trading frequency are smaller as the lag length increase. For the same reason, the results of trading frequency are less for the corresponding volatility level and lag length compared to the portfolio approach.

There are two factors that influence the result of BETC, the return on MA and the number of trading days. As the number of trading days cannot be negative, negative MAs cause the negative BETCs. BETC shows the breakeven point that the profit can cover the transaction cost. In Table 4, most results of BETCs are negative and negative values present the MA strategy is not profitable taking transaction costs into account compared

to buy and hold strategy. Roughly saying that the scale of BETCs increase as the lag length increase and the volatility increase. For positive BETCs, most of them are exceedingly small and the meaningful results for 200-day MAI are due to less trading frequency. Hence, there is no incentive to use the MA strategy for investing in groups of individual stocks.

CONCLUSION

In this study, MA timing strategy is applied on individual stock returns of stock listed in PSX. We found inconclusive evidence to report profitability of MA timing strategy. As compared to its predictive ability for volatility sorted portfolios, MA timing strategy shows a weak predictive ability for individual stocks and consequently fails to earn consistent higher returns over buy and hold strategy. Results of our study are consistent with (Chang, Jong, & Wang, 2017; Coakley et al., 2016; Fernández-Rodríguez et al., 2003), findings of moving averages' predictive ability in currency markets.

Based on our finding we can conclude that; the individual stock returns are noisier than portfolio stock returns. Our finding can be used to further investigate the efficiency of more complex technical trading rules in predicting stock returns.

Appendix

Table 1. Profitability of Individual Stocks

	Panel A. *Volatility Quintile individual stocks*				***Panel B.*** *MA (10) Timing individual stocks*				***Panel C.*** *MAPi*			
Rank	Avg Ret	Std Dev	Skew	S. Ratio	Avg Ret	Std Dev	Skew	S. Ratio	Avg Ret	Std Dev	Skew	Success
Low	14.45 (4.28)	10.12	-0.33	0.68	18.98 (11.37)	5.01	0.32	2.29	4.53 (1.84)	7.38	0.42	0.43
2	15.22 (3.35)	13.64	-0.48	0.56	21.95 (9.83)	6.70	0.27	2.15	6.73 (2.10)	9.59	0.60	0.42
3	23.07 (4.29)	16.14	-0.49	0.96	29.65 (11.25)	7.91	0.30	2.80	6.58 (1.76)	11.21	0.78	0.40
4	25.32 (3.69)	20.56	-0.37	0.87	17.14 (4.99)	10.29	0.58	0.93	-8.18 (-1.71)	14.35	0.75	0.41
High	92.69 (8.84)	31.46	0.28	2.71	-70.64 (-12.02)	17.62	0.79	-4.44	-163.33 (-20.7)	23.68	-0.27	0.31
High-Low	78.24 (8.06)	29.11	0.67	2.43	-89.63 (-15.86)	16.96	0.80	-5.73	-167.86 (-22.50)	22.37	5.24	0.27

Note: Table 1 describes the essential qualities of the returns on the decile individual stocks, the returns on the MA timing (10) portfolios, and the returns on the comparing MAPs, MAP jt10. Panel A and B show buy-and-hold strategy and MA timing individual stocks respectively, covering the five volatility quintiles that include the average return, the standard deviation, the skewness, and the sharp ratios. Moreover, Panel C presents the difference between MA timing individual stock returns and buy and hold individuals stock returns and Success Rates of the MAPs.

Table 2. CAPM

Rank	Panel A. CAPM		
	A	βMKT	Adj.R2 (%)
Low	5.62 (2.77)	-0.22 (-33.30)	32.15
2	8.57 (3.96)	-0.37 (-52.72)	54.30
3	8.82 (3.67)	-0.45 (-57.50)	58.57
4	-5.44 (-1.67)	-0.55 (-52.06)	53.68
High	-160.69 (-22.51)	-0.53 (-22.88)	18.26
High - Low	-166.31 (-23.12)	-0.31 (-13.31)	7.01

Note: Table 2 explains the annual alphas, the market betas, and adjusted r squares across the volatility quintiles based on the daily CAPM regressions of 10-day MAPS. The alphas are annualized and in percentage.

Table 3. Alternate Moving Averages Lag Lengths

Rank	MAPi (20)		MAPi (50)		MAPi (100)		MAPi (200)		Random Switching	
	Avg Ret	CAPM α	Avg Ret	CAPM α	Avg Ret	CAPM α	Avg Ret	CAPM α	Avg Ret	CAPM α
Low	6.59 (2.72)	7.50 (3.75)	4.83 (2.08)	5.65 (2.94)	5.04 (2.32)	5.70 (3.13)	5.02 (2.55)	5.42 (3.28)	-3.40 (-2.02)	-2.50 (-2.03)
2	6.68 (2.09)	8.25 (3.81)	5.35 (2.71)	6.79 (3.23)	5.71 (1.88)	6.90 (3.34)	6.64 (2.21)	7.46 (3.69)	-3.75 (-1.65)	-2.30 (-1.73)
3	6.75 (1.80)	8.65 (3.58)	4.11 (1.11)	5.86 (2.43)	2.56 (0.70)	4.05 (1.70)	4.83 (1.27)	5.92 (2.45)	-7.67 (-2.85)	-5.93 (-3.91)
4	-7.30 (-1.50)	-4.93 (-1.50)	-5.48 (-1.12)	-3.26 (-0.97)	-4.50 (-0.90)	-2.58 (-0.74)	-4.55 (-0.87)	-3.15 (-0.87)	-8.91 (-2.60)	-6.84 (-3.12)
High	-158.03 (-19.83)	-155.77 (-21.61)	-143.36 (-17.64)	-141.17 (-19.25)	-130.78 (-15.64)	-128.92 (-16.98)	-116.46 (-13.26)	-115.06 (-14.49)	-42.65 (-8.14)	-40.68 (-8.85)
High-Low	-164.62 (-21.76)	-163.27 (-22.40)	-148.19 (-19.17)	-146.82 (-19.80)	-135.84 (-16.86)	-134.61 (-17.44)	-121.48 (-14.35)	-120.48 (-15.00)	-39.25 (-8.09)	-38.18 (-8.19)

Note: Table 3 shows the average returns (Avg Ret) and the CAPM alphas (CAPM □) of Moving Average Individual stocks (MAIs) with alternate lag length 20-, 50-, 100- and 200-days. We also provide the average returns of the Random switching. The results are annualized and in percentages.

Table 4. Trading Frequency and BETC

Rank	MAI (10)			MAI (20)			MAI (50)			MAI (100)			MAI (200)		
	Hold Per	Trad Freq	BETC	Hold	Trad Freq	BETC	Hold Per	Trad Freq	BETC	Hold Per	Trad Freq	BETC	Hold Per	Trad Freq	BETC
Low	37.88	4.87	3.49	50.57	3.23	30.38	77.85	1.83	52.15	98.33	1.29	59.40	154.39	0.83	108.98
2	18.50	5.66	27.18	27.58	3.83	41.19	46.11	2.27	58.12	73.66	1.43	19.19	121.81	0.88	56.70
3	27.31	5.07	9.35	39.88	3.30	2.38	74.34	1.92	25.95	101.56	1.33	42.47	152.81	0.89	143.91
4	39.38	5.03	-0.30	56.06	3.47	-6.76	78.64	2.12	-28.36	124.42	1.37	-67	153.40	0.99	-41.12
High	24.59	5.43	-659.86	34.37	3.90	-857.00	58.47	2.46	-1163.10	77.10	1.83	-1467.14	111.46	1.31	-1820.40

Note: Table 4 reports the evaluated average holding period (Hold: Per), the trading frequency calculated as the trading fraction of trading days (Trading) and the break-even transaction costs (BETX) in basis points of MAIs with alternate lag lengths 10, 20, 50,100 and 200 respectively.

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EXAMINING DETERMINANTS OF ENTREPRENEURIAL SUCCESS: THE CASE OF SMALL & MEDIUM ENTREPRENEURS IN KP, PAKISTAN

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ABSTRACT

This study examines the underlying determinants that can lead to entrepreneurial success in relatively troublesome and unfavorable conditions in Khyber Pakhtunkhwa (KP), Pakistan. Identification of these elements can aid policymakers and institutions in promoting entrepreneurial and economic activity. Factors emerged from the literature include government policies, business plans, defensive motivation, availability of capital, and entrepreneurial traits and background. Data were collected from a sample of 190 participants operating small and medium enterprises in the provincial capital, Peshawar through close-ended questionnaires, and analyzed using descriptive statistics and multiple regression analysis. Interestingly, the results revealed that only business plans and government policies significantly impact the entrepreneurial success. These findings highlight the importance of business plans even in the contexts where most businesses are not formally registered. This study can contribute to practice and policy by paving new paths and avenues for those not well bestowed with enterprising personality and thus lacking entrepreneurial characteristics. The study bears both policy and academic implications such that entrepreneurial success can be instigated through governmental policies and assisting in business plans, as opposed to prior research focusing merely on traits, motivation and/or means of capital. This research, therefore, promotes the pool of potential successful entrepreneurs in the region.

Keywords: *Entrepreneurial Success, Government Policies, Business Plans, Availability of Capital, Khyber Pakhtunkhwa (KP).*

INTRODUCTION

In over sixty years of existence, Pakistan has perpetually been

considered a third-world country. It has always struggled to achieve economic growth and stability and continues to do so. The governments of past and present have undertaken several diverse initiatives to strengthen Pakistan's economy, yet it lags behind globally. Not letting the country realize its full potential is its third largest province, KP, which has dismal economic activity as it contributes only 10.5% of the GDP, leading to unemployment, poverty and political instability.

One crucial approach, however, remains, which has not until now received the same level of attention from the government developmental institutions and could be the one to transform it economically is entrepreneurship. Since the 1990s, entrepreneurs have received much academic attention after its impact on economic growth was realized. In the United States, entrepreneurship is taught as a subject in high schools and over 1500 universities are actively involved in entrepreneurship education (Elert, Andersson, & Wennberg, 2015). High levels of entrepreneurs are valuabele assets of developed nations contributing to their Gross Domestic Product (GDP), but in developing nations like Pakistan, entrepreneurs only make a positive economic impact when they run large firms or are suppliers to them (Stel, Carree, & Thurik, 2005).

In Pakistan, nearly 90% of businesses are small and medium enterprises (GOP, 2017). However, it is estimated that many SMEs do not survive and fail within five years of their existence (Cohen, 2017). The expansion of business ventures to a large firm leads to job creation, productivity and economic growth on the national level (Ács, Szerb, Lafuente, & Lloyd, 2018). In Pakistan, KP ranks third out of four provinces in economic development and contribution. The area has been marred with violence and instability and needs urgent attention towards its economic policies.

There have been previous studies on entrepreneurs in the populous regions of Punjab and Sindh, but those are not wholly applicable to the KP region as the residents of this province have different values, culture and thus a different mindset. This research resolves to fill this knowledge gap as an attempt to aware policymakers and business institutes, to devise plans which may cater to the demands of entrepreneurs in KP in a better way.

This study thus aims to unearth the factors and challenges that entrepreneurs in small and medium enterprises in KP encounter. Furthermore, the study examines the impact of five major dynamics that

affect entrepreneurial success: government policies, business plans, motivation, availability of capital, and entrepreneurial traits. The identification of the entrepreneurial success elements can lead to benefit the policymakers and business institutes that train and assist potential entrepreneurs. Also, the encouragement of entrepreneurs in these areas can contribute to the growth of their business, leading to economic growth and social change in KP and Pakistan.

This study aims to answer the following research questions:

- Do entrepreneurial characteristics (innovativeness and risk-taking), and background (financial and experience), impact entrepreneurial success?
- Does a business plan, impact entrepreneurial success?
- Do certain government policies (specifically tariffs, legal system, taxes, and business regulations), impact entrepreneurial success?
- Does defensive motivation, impact entrepreneurial success?
- Does the availability of capital, impact entrepreneurial success?

Rigorous positivistic and quantitative methodology was utilized to analyse the collected data and an attempt to resolve the afore-mentioned questions was made. The remainder of the article covers up an extensive review of the literature on entrepreneurs and entrepreneurial success. This is followed by a description of the methodology, technique of analysis and afterwards, results have been presented. The article comes to an end with a discussion of results and a brief conclusion.

LITERATURE REVIEW

Historically, kings and nobles have been equated with wealth and prestige. Their statuses, which were once coveted by ordinary people for thousands of years, have now shifted to a new kind of person: the entrepreneur. The interest of entrepreneurship in society has steadily increased with time, concurrent with the accumulation of increasingly new data supporting an entrepreneur's significant impact on the economic development of a region.

Entrepreneurs and their Role in Economic Growth

Early literature traces Richard Cantillon as responsible for introducing entrepreneurship into economic literature, through his book *Essai sur la Nature du Commerce en Général* in 1755, in which he identified an entrepreneur as one of three key agents contributing to societal economic development. He argued that uncertainty is fundamental for an

entrepreneur to engage in arbitrage, thus distinguishing an entrepreneur as one who seeks profit by taking risks (Praag, 1999).

The definitions of an entrepreneur that are used today have taken root from the concept shaped by Schumpeter, in his book *The Theory of Economic Development* published in early twentieth-century, in which he defines an entrepreneur in these words:

"An entrepreneur characteristically innovates, introduces new technologies, increases efficiency, productivity, or generates new products or services. He acts as a catalyst for economic change and research indicates that entrepreneurs are highly creative individuals who imagine new solutions by generating opportunities for profit or reward." (Croitoru, 2012)

The importance given to entrepreneurs has also risen with the recognition of their efforts of bringing the world into the modern age. At the turn of the 19th century, American innovators created revolutionary products through technological innovativeness which changed the world forever, raising their social status to that of global celebrities (Graham, 2010). Larry Page of Google, Jeff Bezos of Amazon, and Mark Zuckerberg of Facebook are just some of the many success stories of entrepreneurs who have changed the world and continue to inspire the younger generation.

The general perception in the modern day era is that an entrepreneur has a significant role in economic growth and development in society. This deduction has evolved from productive examples of legendary entrepreneurs, from powerful societies in the past and present. Bjørnskov and Foss (2008), outline the contribution of historically wealthy entrepreneurs who have played a major role in societal development: Julius Caesar's friend Balbus, who worked his way up to amass great wealth, reinvested it back into society by building theatres and public baths. Thomas Edison, whose revolutionary invention of the electric bulb paved way for the multi-million electronic industry. Bill Gates brought around a global technological change by introducing the computer age. Thus, it is evident that the entrepreneurial activity contributes vastly to growth by starting new firms and instilling new changes in existing industries, by introducing new products, processes and ways of organizing. However, if an entrepreneur works for the sole purpose of wealth, then not many will add to the social product (Baumol, 2016).

In order for firms to go global, an economy must prosper locally. In the Pakistan's first five year plan (1955-1960), the development of the small-

scale industry was pre-dominantly stressed upon, considering its beneficial impact on increasing employment levels, skills development of labour, providing goods and services on a smaller scale and local markets, and paving way for the growth of entrepreneurship and economic development.

Local entrepreneurs, who operate in their region of origin, are more likely to create more "*valuable and bigger*" firms which can help bridge technological and income differences between regions when funded by their local financial institutions (Larsson et al., 2017; Michelacci & Silva, 2007). The Government of Pakistan has focused increasingly more on small-scale and village industries. Governments of underdeveloped nations are keen to develop this sector as they not only create employment and economic benefits, they also reduce income, regional and educational disparities and give local entrepreneurs the confidence to grow and industrialize (Singh, 2003). However, the governments should take care to nurture selective entrepreneurs having the potential to increase productivity by creating jobs, inducing market competition and contributing economically, heading away from typical start-ups as the overall economic and social returns cannot be guaranteed by all small businesses (Shane, 2009).

THEORY AND RESEARCH QUESTIONS

Previous studies and reports have associated the survival or failure of an entrepreneur and small businesses with certain factors and challenges.

Entrepreneurial Success. According to Storey (2016), a business goes through five stages of business growth: existence, survival, success, take-off, and resource maturity. Businesses that have crossed the break-even point and are profitable, are identified as successful (Wach et al., 2016), and so are the entrepreneurs. Once in this stage, entrepreneurs can continue operating indefinitely in the same conditions as it has achieved full economic health, market and product-penetration and is of an appropriate size. The business owner is considered "successful" and can choose to either sell, expand, or continue running the organization. In this study, the entrepreneurial success is the dependent variable determined by the profitability of the entrepreneur's present business.

Characteristics & Background of an Entrepreneur. What uniquely distinguishes an entrepreneur is the inherent trait of either producing something new or restructuring the process of an old thing in a new way, through the combination of two features: enterprise – the ability to

efficiently utilize resources for production and profit – the reward received for innovativeness and risk-taking endeavors (Gopakumar, 1995).

Risk-taking is core to the idea of entrepreneurship. Economic formulas based on the mean-variance model have calculated that those business owners undertaking higher levels of risk are more inclined to social entrepreneurship (Chipeta & Surujlal, 2017), and achieving higher returns (Holthausen, 1981). Vereshchagina and Hopenhayn (2009), discovered in a study that risk-taking in entrepreneurs itself is subjective and inversely correlated to the level of wealth, which is why poor individuals with entrepreneurial abilities are more likely to take on riskier projects. They also found patience plays a role in risk-taking; impatient entrepreneurs are less likely to take a risk in investing time and money into establishing a business.

Previous business experience and intuition of a person predicts a higher probability of entrepreneurial intentions (Miralles, Giones, & Riverola, 2016). Age is also not a factor; while the general perception is that only youngsters take risks on business opportunities, research shows otherwise. The typical age for someone to set up their own business lies between 30 and 40 (Ling et al., 2017), while the ratio for self-employed individuals who are 50-plus are one and a half times that of entrepreneurialism across all ages (Turner & Mulholland, 2017). Thus, from the discussion on previous literature, following research question and hypothesis is derived:

Research Question 1: Do entrepreneurial characteristics (innovativeness and risk-taking) and background (financial and experience) impact entrepreneurial success?

Hypothesis 1: Entrepreneurial characteristics (innovativeness and risk-taking) and background (financial and experience) do impact entrepreneurial success.

Business Plans. In his research, Vivarelli (2004) discovered that the success of a business is correlated with the potential founder's motivation and characteristics. He found that an entrepreneur with a positive attitude, a business plan based on a large and reliable information set, and rational economic expectations will find firms that are more likely to deliver above-average performance post-entry. The contribution of business plans to long-term success has prompted the Government of Pakistan to make them a requirement when applying to the Prime Minister's Youth Finance

Scheme – a financial scheme aimed at young entrepreneurs (Hyder & Lussier, 2016). The presence of business plans in an entrepreneurial venture has been linked with a greater possibility of business success and survival in previous studies. Thus, our second research question and hypothesis reflect this perspective:

Research Question 2: Does a business plan impact entrepreneurial success?

Hypothesis 2: A business plan does impact entrepreneurial success.

Government Policies. With the growing spotlight on entrepreneurial links to national economic growth, governments have begun focusing on making entrepreneurship an important part of public policies in an effort to stimulate economic development (Acs, Audretsch, Lehmann, & Licht, 2017). Entrepreneurship is key to a growing economy yet it is dependent on institutions, thus, making institutions the cause of economic growth (North, 1990).

Moreover, economic structures distinguish the developed nations from underdeveloped nations. The annual economic freedom of the world report measures the support of economic freedom by the government and institutions of a country based on the size of its government, legal system, property rights, sound money, freedom to trade internationally and regulations on business, credit, and labour market. As per the report's findings, those countries which have the highest levels of economic freedom enjoy higher investment rates, more rapid economic growth, higher income levels, and a more rapid reduction in poverty rates and are the first-world countries of today including the United States, United Kingdom and Australia (Gwartney, Lawson, & Hall, 2016). Pakistan finds itself in the least free group, ranking at 133 out of 159 countries in order of highest to lowest economic freedom. Thus, our third research question and hypothesis are proposed below.

Research Question 3: Do certain government policies (specifically tariffs, legal system, taxes, and business regulations) impact entrepreneurial success?

Hypothesis 3: Government policies do impact entrepreneurial success.

Defensive Motivation. As discussed above, opportunity entrepreneurs have significantly higher chances of growth success in contrast to necessity entrepreneurs. The two can be distinguished based on motivation. Business

founders pushed by innovative and economically progressive motivations are linked to firms with superior business growth and revenue (Vivarelli & Audretsch, 1998). Conversely, business founders led by defensive motivations, such as the possibility of job loss or an escape from employment, were less likely to deliver remarkable results (Vivarelli, 2004). Entrepreneurs self-employed in the informal economy, because of a lack of other employment options, are found to not be agents of economic growth and are generally vulnerable and insecure about their situation (Amor-s et al., 2016). Moreover, it is found that businesses founded on the sole motivation of survival are predicted to be less likely to grow and succeed.

Research Question 4: Does defensive motivation impact entrepreneurial success?

Hypothesis 4: Defensive motivation negatively impacts entrepreneurial success.

Availability of Capital. Understandably, capital is a major factor that impedes most entrepreneurial dreams. A 1987 government-sponsored random survey by the National Survey of the Self-Employed (NSS) questioned about the reason for people not being self-employed and found that the most common reason received by more than half the respondents was lack of money. According to CAN Capital's inaugural Small Business Health Index 2015, getting hold of working capital is reported to be "quite or extremely challenging" in 65 percent of small businesses (Capital, 2016).

Research Question 5: Does the availability of capital impact entrepreneurial success?

Hypothesis 5: The availability of capital impacts entrepreneurial success.

RESEARCH METHODOLOGY

This section serves to present the methodology and techniques used in the study. It outlines the research approach, population, sample, data collection and theoretical framework adopted by the study.

Research Approach

About 95% of businesses in the capital city of Khyber Pakhtunkhwa are informal and unregistered in the public domain (Imranullah, 2017). Informal businesses lack any official documents and are disregarded in public surveys and reports, creating a severe lack of secondary data of

entrepreneurs in small and medium businesses. A deductive approach was used to test the hypotheses based on previous theories and research (Johnson & Bhattacharyya, 2010).

Primary data was chosen as a source of information to determine the traits of an entrepreneur and the influence of certain variables on entrepreneurial success. A close-ended questionnaire was personally delivered by the researcher and was personally administered to participants who were uneducated and unable to comprehend the questions without assistance. Responses were then coded and analyzed to test the research hypotheses.

Research Population

The population of the study included all entrepreneurs in the province of Khyber Pakhtunkhwa in Pakistan. Business owners who had set up a business over the age of 18 years qualified for the study.

Research Sample

According to Tabachnick, Fidell, and Osterlind (2001), ninety cases are sufficient for a sample under investigation for a study of 5 independent variables. They have presented a formula which calculates the number of cases needed for a population depending on the number of independent variables:

$$N > 50 + 8m$$

Where N is equal to the number of cases, and m is equal to the number of independent variables. Based on this formulation, a sample of 190 entrepreneurs was studied.

Only five percent (5%) of entrepreneurs in Pakistan are women as was found in the 2012 GEM Report (GEM, 2013). The study aimed to include a proportion of women who reflect the correct population of female entrepreneurs. A total of 28 women were interviewed, which reflects 14.7% of the sample and is significantly close to the actual proportion of the population.

Data Collection

In a period of one month, data was collected from 190 entrepreneurs in the provincial capital of Khyber Pakhtunkhwa i.e. Peshawar. Peshawar city was selected because it represented residents hailing from various cities and town across the province. Close-ended questionnaires were used as a data collection tool, which were distributed both electronically and physically. Over 220 questionnaires were distributed, but only 190

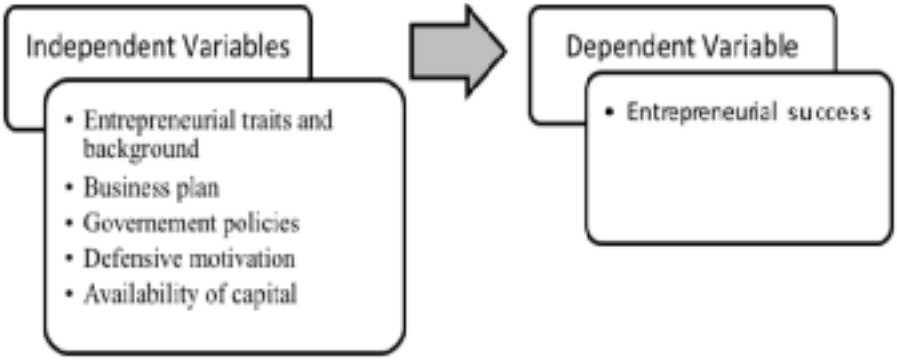
responded, creating a response rate of 80%. Each questionnaire had 34 questions. All data was kept anonymous and confidential to prevent bias from the researcher and discomfort from the respondents.

An electronic questionnaire was designed on Google forms and shared with over 56 individuals, of which only eighteen responded. Over 40 respondents were contacted via Facebook while the remaining were personal contacts. In order to increase the response rate, the researchers had to go to the field and make a physical survey. One hundred and fifty-two questionnaires were personally administered by the researcher due to the low literacy rate of 53% in Pakistan, according to Wasti (2015), in a report on Pakistan Economic Survey 2014-15. The questionnaire was translated in Pashto and Urdu for those who did not understand English.

THEORETICAL FRAMEWORK

The study was composed of five independent variables and one dependent variable. Their relationship is depicted in figure 1 below.

Figure 1. Theoretical Framework



Association between Entrepreneurial Success and Selected Predictor Variables

DATA ANALYSIS

The data was analyzed using three methods using version 23 of SPSS. Important steps to conduct quantitative analysis have been summarized as follows:

Variables and Measures

Independent Variables. A total of five independent variables were studied including Entrepreneurial characteristics and background; business plan; availability of capital; freedom of government policies; and defensive motivation.

Entrepreneurial Characteristics and Background. Six items were employed for the measurement of entrepreneurial characteristics and background. Traits and features of successful entrepreneurs' backgrounds were taken from previous literature on entrepreneurial activity. Risk-taking and innovativeness were used to measure the presence of entrepreneurial traits (Gopakumar, 1995), while backgrounds were measured by asking about financial stability at the time of business creation (Vereshchagina & Hopenhayn, 2009; Gopakumar, 1995) and whether they had previous business experience (Rambe & Ndofirepi, 2017).

Business Plan. Three items were used to measure the use of a business plan before setting up the business. Participants of the study were asked whether they had had a clearly defined business plan. They were also asked if their business plan was based on a large and reliable information set, and rational economic expectations (Vivarelli, 2004).

Freedom of Government Policies. Seven items were used to measure the economic freedom of government policies. All questions in the questionnaire were sourced from the features of an economically free country according to the annual Economic Freedom of the World Report. Respondents were asked for their input on seven characteristics of government policies: protection of property rights, justice free from external influence, inflation, and on regulations on the transfer of money, labour, credit from banks and international trade.

Defensive Motivation. Four items from the GEM Adult Population Survey (APS) were used to measure the motivational reasons for the owner starting the business. Participants were asked if they started the business because they saw a business opportunity, or because they were unable to find a job. They were also asked whether they joined because of a combination of the previous two items and if they had a job when they launched the business.

Availability of Capital. Four items were used to measure the availability of capital when starting a business. All four were sourced from the GEM APS used to survey entrepreneurial activity worldwide. Participants were asked whether they had access to family assets, security of financial inheritance, and if they found loans from formal and informal institutions widely available.

Dependent Variable. There is only one dependent variable in the study which is the entrepreneurial success. Based on a study by Storey (2016), the

success of an entrepreneur is assessed based on whether or not their business venture is profitable. If it is determined to be profitable, the entrepreneur will be considered successful (Staniewski & Awruk, 2018). Conversely, if the business is in a loss, the entrepreneur will be considered unsuccessful.

Measures

A 5-point Likert scale was used to measure all five independent variables. The values ranged from "Strongly disagree" with a value of 1 to "Strongly agree" with a value of 5. Those that did not have an opinion on a statement selected "Undecided" which had a value of 3. Each independent variable had more than 3 items (as outlined in section 1), whose values were averaged for further analysis.

The dependent variable was measured by answering one of three categories providing ordinal data. The value of 1 corresponded to a loss in the business, 2 corresponded to neither profit nor loss, and 3 corresponded to a profit in the business.

Techniques of Analysis

Descriptive statistical analysis was performed on the data to obtain a demographic summary and tabulate frequency of responses. Its purpose was to provide an overview of the individuals in the sample of data.

Regression analysis was performed on the data to establish whether there is any causal relationship between the independent variables and the dependent variable. Statistician Jacob Cohen proposed multiple regression analysis over 4 decades ago to test hypotheses (Cohen, West, & Aiken, 2014; Aiken, West, & Reno, 1991). It is used to examine how well a set of variables can predict a particular outcome. Linear multiple regression analysis was chosen because there were more than one independent variables. Furthermore, a linear multiple regression analysis was also performed to determine the presence of multicollinearity and the degree of correlation between independent variables.

RESULTS

The results have been interpreted to describe the characteristics of the sample, and whether or not the null hypotheses are proved true. Charts and tables have also been added to provide a visual depiction of the data.

Descriptive Statistics

Because of the large amount and complexity of the data, the summarization

and exposition of the demographic and key features in the form of descriptive statistics make it easier to comprehend (Johnson & Bhattacharyya, 2010). The data set obtained in the study is presented in this section in the form of tables and graphs to give a pictorial representation of patterns in the data.

Table 1. Gender of Respondents

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	162	85.3	85.3	85.3
Female	28	14.7	14.7	100.0
Total	190	100.0	100.0	

Table 1 depicts the frequency and percentage of the gender of the participants in the sample. Out of the respondents, 162 were male which made up 85.3% of the sample, and 28 were female making up 14.7% of the sample.

Table 2. Age of the Respondents

Age of Respondents			
		Frequency	Percent
Year-wise categories	18-25	20	10.5
	25-40	92	48.4
	40-60	54	28.4
	60+	24	12.6
	Total	190	100.0
Age of Business establishment			
Year-wise categories	0-1	20	10.5
	1-10	62	32.7
	10-20	46	24.2
	20-30	16	8.4
	30-40	22	11.6
	40-50	6	3.1
	50-60	12	6.3
	60 +	6	3.2

Table 2 illustrates the frequency and percentage of the age of the participants in the sample. Participants were categorized in four age groups. Out of the total respondents 20 were between the ages of 18 and 25 (10.5% of sample), 92 were between the ages of 25 and 40 (48.4% of sample), 54 were between the ages of 40 and 60 (28.4% of sample), and 24 were over the age of 60 (12.6% of sample). Furthermore, table 2 also describes the frequency and percentage of years of business establishment in the sample. Out of the total respondents, 10.5% of the respondents had businesses running for up to one year; 32.7% had businesses for a year to

ten years; 24.2% had businesses for ten years to twenty years; 8.4% had businesses for twenty years to thirty years; 11.6% had businesses for thirty years to forty years; 3.1% had businesses for forty years to fifty years; 6.3% had businesses for fifty to sixty years; whereas, 3.2% had businesses for more than sixty years.

Table 3. Type of Business

Type of Business				
	Frequency	Percent	Valid Percent	Cumulative Percent
Barber	4	2.1	2.1	2.1
Beauty Salon	2	1.1	1.1	3.2
Clothing	20	10.5	10.5	13.7
CNG Station	2	1.1	1.1	14.7
Coppersmith	2	1.1	1.1	15.8
Dairy	2	1.1	1.1	16.8
Dry-cleaning	2	1.1	1.1	17.9
Educational	2	1.1	1.1	18.9
Energy	2	1.1	1.1	20.0
Entertainment	2	1.1	1.1	21.1
Events	2	1.1	1.1	22.1
Flour Mills	2	1.1	1.1	23.2
Food	28	14.7	14.7	37.9
Hotel	2	1.1	1.1	38.9
Medicine	2	1.1	1.1	40.0
Milk Shop	2	1.1	1.1	41.1
Mobile	20	10.5	10.5	51.6
Photography	8	4.2	4.2	55.8
Photostat	8	4.2	4.2	60.0
Printing	4	2.1	2.1	62.1
Property	2	1.1	1.1	63.2
Retail	58	30.5	30.5	93.7
Scrap	2	1.1	1.1	94.7
Shoes	4	2.1	2.1	96.8
Social	2	1.1	1.1	97.9
Stationary	2	1.1	1.1	98.9
Vapor	2	1.1	1.1	100.0
Total	190	100.0	100.0	

Table 3 represents the frequency and percentage of the types of businesses owned by the participants in the sample. Figure 5 is a visual representation of the proportion of the types of businesses included in the study. The highest number of cases were taken from the retail sector as they were the most prevalent kind of business in Peshawar. There were 58 respondents (30.5% of sample) with a retail business in the study. It was

followed by 28 respondents (14.7% of sample) with business in the food industry and 20 cases each (10.5% of sample) in the clothing sector.

Reliability Analysis

Results from reliability analysis show that our adapted constructs fall within an acceptable range of inter-item correlation. These include Entrepreneurial traits, Business plan, Govt policies, Defensive motivation, Availability of capital, and Entrepreneurial success. Table 4 shows that Cronbach Alpha for Entrepreneurial traits is 0.76, Business plans is 0.69, and Governmental policies is 0.73. Only for Availability of capital, the alpha scores is less than suggested, nevertheless, it is still considered acceptable especially when the number of items making up the scale (Field, 2013).

Table 4. Cronbach Alpha

Constructs	Coefficient of Reliability (Cronbach a)
Entrepreneurial traits	0.76
Business plans	0.69
Governmental policies	0.73
Defensive motivation	0.76
Availability of capital	0.55
Entrepreneurial success	0.85

Regression Analysis

Table 5 displays the results of regression analysis and lists the figures for R, R square, adjusted R square, standard error of estimate, significance (sig.) and unstandardized coefficient (B).

Table 5. Regression Analysis: Entrepreneurial Success & Predictor Variables

Variable	R	R Square	Adj. R Sq	Std. Error	Sig.	B
Entrepreneurial traits and background	.333	.111	.048	.59120	.119	.135
Business Plan	.428	.183	.092	.57722	.048	.067
Government Policies	.518	.269	.122	.56760	.045	.127
Defensive Motivation	.542	.294	.105	.57310	.093	-.036
Availability of Capital	.560	.313	.077	.58195	.184	-.097

The regression analysis identified the presence and strength of a relationship between the proposed independent variables and the dependent variable – entrepreneurial success. The results are depicted in Table 5. Entrepreneurial traits and background were found to account for 11.1% of the variation in entrepreneurial success (R square= 0.111), have a positive correlation with entrepreneurial success (B=0.135), and were insignificantly related to entrepreneurial success (sig.=0.119), thus rejecting the H1 hypothesis and accepting the null hypothesis.

The business plan was found to explain 18.3% variation in entrepreneurial success (R square= 0.183), be positively correlated to entrepreneurial success (B=0.067), and significantly related to entrepreneurial success (sig. =0.048), thus accepting the H2 hypothesis.

Government policies were found to account for 26.9% of the variation in entrepreneurial success (R square= 0.269), was positively correlated to entrepreneurial success (B=0.127) and significantly related to entrepreneurial success (sig. =0.45), thus accepting the H3 hypothesis.

Defensive motivation was found to explain 29.4% variation in entrepreneurial success (R square= 0.269), be negatively correlated to entrepreneurial success (B= -0.036), and insignificantly related to entrepreneurial success (sig. =0.093), thus rejecting the H4 hypothesis.

Finally, availability of capital was found to explain 31.3% of the variation in entrepreneurial success (R square= 0.313), have a negative correlation with entrepreneurial success (B= -0.097), and be insignificantly related to entrepreneurial success (0.184), thus rejecting the H5 hypothesis.

DISCUSSION AND CONCLUSION

Regression analysis of the data revealed government policies and business plans to be significantly related to entrepreneurial success; while surprisingly, defensive motivation, availability of capital, and entrepreneurial traits does not bear any significant impact. Interesting findings thus emerge, for instance, the dominant role of business plans and policies in entrepreneurial success while the negligible role of capital is perhaps not something expected in the context of a relatively under-developed region.

Business owners that felt higher levels of economic freedom in public policies were more likely to gain success through profitability. Entrepreneurial activity is dependent upon institutions according to North (1990), and the data of this research supports this hypothesis. However, it was noted during conversations with participants that many had little interaction with public institutions and a majority were informal businesses further lessening any contact with government regulations. It is a possibility that higher economic freedom was felt because of a lack of dealing with government institutions as many were not publicly registered or were unaware and not adhering to regulations in labor, international trade, money transfer, and more.

The presence of a defined business plan was found to be significantly related to entrepreneurial success. The most common source of information upon which the business plans were built came from people already involved in the industry, usually a family member or personal contact. There was no evidence of business plans built upon market reports, previous research or public surveys due to the lack of awareness and access. Despite having business plans built upon unverified data, entrepreneurs found some level of success. That level could be higher if they based their plans upon a large and reliable set, thus allowing them to grow and expand their business (Vivarelli, 2004).

A couple of observations were made by the researcher during data collection, chief of which was an aversion to loans. Except for one, all respondents said that they had never applied for a loan nor thought of seeking capital at a formal institution. Their repulsion towards loans stems from religious Islamic beliefs that forbid usury and distrust of the system.

Moreover, a surprising discovery that arose through the analysis was the lack of a relation between entrepreneurial success and established entrepreneurial traits and background (Przepiorka, 2017). It questions the underlying belief that returns and entrepreneurial intentions are higher when previous business experience (Miralles, Giones, & Riverola, 2016), and entrepreneurial traits i.e. risk-taking and innovativeness (Nuray & Gurol, 2006) are present; although a stable financial background was found to be significantly correlated to profitability (Vereshchagina & Hopenhayn, 2009). The absence of common entrepreneurial traits in the sample can be attributed to their basic motivation for starting a venture. It is worth delving into the reasons why entrepreneurial traits and background are not significantly found in successful entrepreneurs, as it could open the path for other individuals wishing to engage in business ventures who lack entrepreneurial characteristics, financial background or experience.

CONCLUSION

The purpose of this study was to examine major determinants that lead to entrepreneurial success in small and medium businesses. A business plan and government policies conducive to business growth were found to contribute significantly to entrepreneurial success in KP. Considering the universal phenomenon that entrepreneurial growth is fundamental to economic growth, the identification of these factors can be greatly beneficial to Pakistan's emerging economy and KP's fragile economy, as well as add to the contextual literature in the province.

The fact that established entrepreneurial traits and background were insignificant for entrepreneurial success opens doors for institutions promoting economic development. Proving that it is not necessary to have certain characteristics to become an entrepreneur and run a profitable business, allows universities to teach and train potential entrepreneurs lacking those characteristics, or a stable and experienced background. The government of KP and international development organizations can also indulge in encouraging and indulging ordinary people with business ideas to act upon their plans, thus contributing to the provincial and national economy.

Business plans based on economic expectations and reliable information were also proved to be beneficial to the long-term profitability of the venture. Albeit the sources of information were not from a large and reliable pool, they nonetheless proved to be effective. Data sources were most commonly a family member or friend who had worked in similar business. Thus, it can be concluded that the provision of services that could assist potential entrepreneurs with tools and information to develop solid business plans before creating a business might possibly have vast returns. However, those who lack personal contacts in the industry are at a disadvantage in developing their business and could gain much from professional assistance.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

The research was performed to the best of the researcher's abilities and resources, yet it is not free from limitations, as expected in any social sciences research. Firstly, the sample was limited to mainly small enterprises, many of which were operating as informal businesses unregistered in public records. Because of which the degree that government policies affect businesses could not be fully ascertained. Secondly, the chaotic and turbulent situation in KP region had hindered the researcher to fully explore entrepreneurial success and the inside stories.

Including other medium and large enterprises, with higher revenues and employees, in future studies could provide a better assessment of entrepreneurial success. They might have higher levels of profitability, translating to higher levels of entrepreneurial success, and have greater interaction with public enterprises. Future research can perhaps, draw a comparative analysis of success in between SME's and large enterprises which can then boost many small firms to expand into national and/or 'global organizations', in addition to policy implications.

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BEHAVIOR OF ISLAMIC AND CONVENTIONAL HOLIDAY-EFFECT AND ADAPTIVE MARKET HYPOTHESIS: A FIRM LEVEL EVIDENCE FROM EMERGING MARKET OF ASIA

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ABSTRACT

This study enhances the existing literature on the Adaptive Market Hypothesis (AMH) and calendar anomalies. The study is a first attempt to link the Islamic and conventional Holidays' effect with the Adaptive Market Hypothesis that allows the performance of well-known Holiday Effect to fluctuate over time. To fulfil the purpose of the study, the daily returns of 107 individual firms listed in Pakistan Stock Exchange over the period of 20 years (from January 1996 to December 2015) are observed. To explore the varying degree of return predictability of Holiday Effect, the research utilizes four different subsamples comprising an equal length of observations of five years each. It is found that the behavior of the Holiday Effect evolves over time as the performance of this effect varies occasionally and is consistent with AMH. Finally, the paper proposes that the Adaptive Market Hypothesis is a well elucidation of the behavior of the Holiday Effect than traditional Efficient Market Hypothesis (EMH).

Keywords: *Adaptive Market Hypothesis; Efficient Market Hypothesis; Holiday Effect; Islamic Holiday Effect; Pakistan Stock Exchange.*

INTRODUCTION

Through investigating the varying degree of well-known holiday effect, the study attempts to add literature on Adaptive Market Hypothesis (AMH) proposed by Lo (2004). Market conditions and the way the market participants incorporate novel information into the prices of equity impact investors' psychology in the market which in turn may change the behavior of holiday effect over time. Thus, the study is intended to investigate the time-varying behavior of holiday effect in the context of Adaptive Market Hypothesis (AMH). The holiday effect can be defined as the effect due to which the average returns become higher and statistically significant on the

trading day immediately prior to the off-trading-days (holidays). These holidays are apart from Saturday and Sunday, means other public holidays on which the stock exchanges remain closed. Thus, the study considers the holidays in the Islamic years which predominantly include : 9th & 10th of Muharram (Ashura); 12th Rabi-ul-Awwal (Eid-Milad-un-Nabi), 1st Shawwal and 10th Zilhaj (Eid-ul-Fitr and Eid-ul-Adha respectively); while holidays in the Gregorian calendar include 5th of February (Kashmir-day), 23rd March (Pakistan-day), 1st May (Labor-day), 14th August (Independence-day) and 25th December (Quaid-e-Azam-day).

Considering the importance of market efficiency is imperative to understand the working of the stock market. Poshakwale (1996), asserted that the efficiency of the emerging markets assume greater importance as the trend of investments is accelerating in these markets, as a result of regulatory reforms and removal of other barriers for the international equity investments. The notion of EMH explores that if the market is weak in efficiency then stock prices must be independent of each other and returns will be unpredictable (Fama, 1970). Additionally, Fama (1970), also classified the market efficiency into three different categories, each category is characterized in terms of different forms of information as; (i) weak form efficiency, which defines that equity prices fully reflect all available information about the historical trading; (ii) semi-strong form efficiency, which delineates that the publicly available information is fully reflected by the equity prices; and (iii) the strong form efficiency which proclaims that the equity prices fully reflect possible relevant information along with inside information of the company. Accordingly, all these three types portray that all possible available information is reflected by the equity prices, thus, any forecasting about future price changes is not possible. Therefore, both the fundamental analysis[1] (predicting equity/security prices on the basis of economic variables), and the technical analysis[2] (predicting equity/security prices on the basis of historical trading and performance of equity/securities) are useless and would not be beneficial for the market participants to gain abnormal returns[3]. In the literature, all three sorts of the efficient market hypothesis (EMH) have captured great attention but the weak form of EMH is widely studied and also is the primary focus of this study.

[1]Fundamental analysis involves analyzing all publicly available information (e.g. financial statements) about a certain stock to infer significant insights that can be used to make a profit in the stock market in future (Kothari, 2001).

[2]Technical analysis involves investigation of time series of past prices and returns of stock to derive a certain pattern that can be extrapolated in the future in order to make profitable predictions of price movements in future (Brown & Jennings, 1989).

[3]"Abnormal Return" is defined as the difference between expected returns and actual returns.

Against the proposition of EMH, if the prices of stocks are predictable and not independent, the investors can gain abnormal returns by using the historical information of the past trading trend. Recent literature contradicts EMH preposition, as many studies (Shahid & Mehmood, 2015; Hashmi, 2014; Halari, 2013), expound the stock returns to have a dependent nature and substantiate that there exist some profitable investment opportunities in the markets, thus, market anomalies do exist in Pakistan. Grossman and Stiglitz (1980), expressed that it is impossible for a capital market to be perfectly efficient as investors otherwise would have no benefit to acquire costly information if the markets were not inefficient and the profit-making opportunities were available. Keeping in view the argument of Grossman and Stiglitz (1980), of "impossibility of perfectly efficient market", Campbell, Lo, and MacKinlay(1997), offered the notion of "relative efficiency" rather than the "perfect efficiency" which leads a swing from measuring efficiency of market from an all-or-nothing condition to test it over the period of time (Shahid & Sattar, 2017). Recent studies (Rehman & Rizwan, 2014; Haque, Liu, & Nisa, 2011), provide the evidence that the stock markets in Pakistan are inefficient while some studies show that Pakistani equity markets are effectual as well. Nisar and Hanif (2012), found that the monthly return data identifies PSX as weak form efficient, similarly, Rabbani, Kamal, and Salim (2013), suggest that PSX was weak form efficient in sub-period 1999-2001 and 2005-2007, while Riaz, Hassan, and Nadim (2012), identified that the efficiency of market changes with the application of different tests which means that market efficiency may change from time to time. Thus, a contradiction exists about efficiency and inefficiency of the markets. Therefore, it is essential to explore the stock market efficiency through AMH (Adaptive Market Hypothesis) which states that efficiency (return predictability) changes over time. To incorporate the varying degree of return predictability, Lo (2004), proposed a new model "Adaptive Market Hypothesis (AMH)" that facilitates market anomalies to co-exist with market efficiency and enables market efficiency to evolve over time.

Moreover, the AMH proclaims that the market efficiency is not a guaranteed outcome as to gain abnormal profit, the arbitraging opportunities also arise from time to time. Hence, Lo (2004), characterized the six attributes of AMH as; i) investors perform in favor of their self-benefits to protect their own self-interest; ii) investors make wrong judgments and

make mistakes; iii) investors pick up learning from their mistakes and adapt them to their behavior which is not explored by EMH; iv) rivalry energizes adaptation as well as innovation; v) market ecology is shaped by natural selection; vi) evolution determine the dynamics of the market.

Susequently, Shahid and Sattar (2017); and Urquhart (2013), argue that the earlier studies apparently clarify the efficiency and inefficiency of the market over a pre-determined time, while market conditions may change from time to time causing changes in efficiency, which is consistent with AMH. Currently, AMH is receiving great attention, thus, this study aims to explore if AMH is the better elucidation of behavior of holiday effect than traditional EMH at firm level in Pakistan. The findings of this study will be useful for individual investors and security organizations for accurate forecasting and a better understanding of the market.

To conduct the study, individual firms listed in Pakistan Stock Exchange have been selected which were list during the time period of January 1996 to December 2015, using subsamples of five years of fixed length, to inspect the behavior of the holiday effect. Investigation of the varying behavior of holiday effect is conceded by sub-sample analysis across the time period of the study. However, the choice/selection of sub-samples as well as the range of their size is of subjective nature (Shahid & Sattar, 2017; Urquhart & Hudson, 2013). Thus, the data set is split into four sub-samples of 5-years, of equal length to investigate how the holiday effect has behaved over time. Sub-samples consist of enough observations to produce reliable results which enable comprehensive analysis of the varying degree of the holiday effect.

Along these lines, an attempt to enhance the literature on AMH is undertaken by fulfilling the missing link of varying degrees of holiday effect through AMH in multifarious ways. Firstly, this study is the first attempt to investigate the Islamic and conventional holidays' effect anomaly with AMH, which alters the behavior of returns during the holidays, over time. Secondly, this is the first study which investigates the performance of holiday effect at the firm level under the umbrella of AMH. Finally, the paper examines the behavior of the holiday effect with the application of a GARCH (1,1) regression model which facilitates the time-varying nature of volatility in equity returns. On the other hand, to handle the non-normal nature of stock returns data, the Kruskal-Wallis test statistic is used. The rest of the paper is organized as follows; the subsequent segments offer the relevant review of holiday effect literature; the data & methodology used to conduct the study; empirical results and summaries; findings and conclusions respectively.

LITERATURE REVIEW

The Holiday effect anomaly have been rigorously tested in previous studies. Fields (1934)[4] first documented the holiday effect and found that "the stock returns on trading days before the religious and secular closed-market holidays, are significantly higher than returns on other trading days". Seminal studies of Lakonishok and Smidt (1988); and Ariel (1990), report significantly higher returns on pre-holidays as compared to post-holiday returns. Furthermore, they found abnormal returns not only on weekend closing but for other gaps in trading. Ariel (1990), found an eight-time greater return on pre-holidays than post-holiday returns. He further proved that the eight holidays per year account for 38% of the total annual rate of returns. Also, Lakonishok and Smidt (1988) reported that the pre-holiday returns occupied 30 % to 50% of the total return of US equity markets before the year 1987. Agrawal and Tandon (1994), found the pre-holiday effect in seventeen markets. Similarly, Kim and Park (1994); Brockman and Michayluk (1998), investigated AMEX and NASDAQ over the period of 1963-1987 and 1987-1993 respectively and found holiday effect's impact on the market.

Boyle et al. (2002), analyzed the New Zealand stock market. They selected five economically different events which had an impact on the emotions and moods of the investors (as claimed by psychology researchers). They found that pre-holiday returns are statistically different from other days (i.e. non-events). Similarly, Chong et al. (2005), noticed the pre-holiday effect in the UK, US and Hong Kong markets which are considered as the most important markets of the world. They construed that the average expected returns before specific holidays were significantly greater than the average expected returns before other holidays. The same effect of holidays was discovered in the Kuwait Stock Exchange from the period of 1984 to 2000 (Al-Loughani, Al-Saad, & Ali, 2005). Picou (2006), studied the stock return behavior in stock exchanges of six countries including the All Ordinaries Index from Australia, Index of TSE from Canada, HIS-Hang Seng Index from Hong Kong, Nikkei-225 from Japan, Financial Times Stock Exchange -FTSE from the UK, and S&P-500 from the US. By calculating the daily return for ten years (1989-1999), he found ex-post-holiday anomaly in all the exchanges, this was because the investors sell more before the holiday to avoid the risk after

[4] For detail see the studies of (Borowski, 2015; Abidin et al., 2012; Abdul Karim et al., 2012; Marrett & Worthington, 2007; Lucey, 2005).

the holiday. Wong, Agarwal, and Wong (2006), examined the Singapore Stock Exchange to investigate the holiday effect. They divided the sample into two periods; pre-crisis period and post-crisis period and found that the preholiday return was higher than the other trading days in the pre-crisis period, but the trend was inverse in post-crisis periods. Marrett and Worthington (2007), examined the holiday effect in Australian Stock Exchange for the period of 1996 to 2006. They selected eight annual holidays that were ANZAC day, Australia day, Boxing day, Easter Friday & Monday, new-year days, Queen's birthday, and Christmas day, and confirmed the pre-holiday effect. Cao et al. (2009), estimated the holiday effect in the stock market of New Zealand. To test the variance, pre-holiday returns were considered along with the non-preholiday returns. For the purpose, they took data for the period of 1967 to 2006 of NZSE40 and NZSE50 indices. The results of this study illustrated significant positive returns before holidays in New Zealand.

Zafar et al. (2012), examined the half-month effect as well as holiday-effect at Pakistan Stock Exchange (PSX) over the period of 1991-2007. They calculated the daily logarithmic returns from the KSE-100 index to test these calendar effects. They concluded the Pakistan Stock Exchange as an inefficient market by elaborating that the pre-holiday has significant positive returns than post-holidays. They further argued that the investors in the market react very certainly and take more part in trading activities before holidays, thus gains in the time prior to holidays is significantly greater than gains after holidays. By using ARMA (1,1) model as well as GARCH (1,1) model over the period of 1999-2012 Yuan and Gupta (2014), presented a robust evidence of positive CLNY-pre-holiday effect in almost all major indices of Asia[5] except for Malaysia, where the post-CLNY effect was greater, significant, and positive than the pre-CLNY[6] effect. Huang (2017), investigated the Chinese stock market to examine the holiday effect returns over the period of 2006 to 2017. With the application of GARCH (1,1) and GARCH (1,1)-M models, the study found evidence of holiday effect in Chinese stock market. Moreover, Shahid and Sattar (2017), investigated the Pakistan Stock Exchange over the period of 1992 to 2015 and found that the holiday effect fluctuates over time and is consistent with AMH. Hassan and Sarker (2018), investigated the Dhaka

[5] Indices from China (Shanghai Composite-Index), from Hong Kong (Hang Seng-Index), from Japan (NIKKEI-225-Index), from Malaysia (FTSE Bursa Malaysia KLCI), from Singapore (Straits Times-Index), from South Korea (KOSPI Composite-Index) and from Taiwan (TSEC Weighted Index).
[6] Chinese Lunar New Year (McGuinness & Harris, 2011).

Stock Exchange to examine pre-and post-holiday returns over the period of 2013 to 2017. With the application of Wilcoxon-signed rank test, they found significantly higher returns in pre-holidays than post-holidays. The literature suggests the prevalence of holiday effect in different stock markets, but a limited number of studies have investigated the varying degree of holiday effect through AMH. Thus, adding more literature on the subject will help to have a comprehensive view of the behavior of the holiday effect in different markets.

DATA COLLECTION AND RESEARCH METHODOLOGY

To observe the presence of holiday effect and how this effect has influenced over time, we investigated the daily-returns of companies listed in the Pakistan Stock Exchange. There were 560 companies listed on PSX in December 2015. Out of the 560 companies only 540 had data available on the data stream database. Thus, the daily share price data was downloaded for all 540 firms. In order to explain the adaptive nature of the behavior of the holiday effect, a large substantial time frame is required for the study to investigate the individual companies. Thus, a sample of 20 years' data from January 1996 to December 2015 was selected. Furthermore, a sample of 107 companies[7] was selected out of 540 companies which had the data available from January 1996 to December 2015. To investigate the varying degree of the behavior of the holiday effect, data of individual firms are more appropriate than using national indices. Thus, the analysis provides a more accurate sign of whether equity returns are foreseeable for investors on holidays and whether this effect has cyclic nature of efficiency. The following regression equation was estimated:

$$R_t = c + \beta D_t + \varepsilon_t, \qquad t = 1,\ldots,T$$

Where R_t represents the stock index return, D_t represents an indicator of holiday effect as adopted by (Urquhart & McGroarty, 2014; Shahid & Sattar, 2017), while ε_t is the error term. Instead of using OLS regression, we use GARCH (p, q) model proposed by , to investigate the existence of the holiday effect in Pakistan stock exchange. Across our analysis, we employ GARCH (1, 1) regression model because GARCH (1, 1) model is the most robust and simplest model of the family of volatility models as well as it is most widely used in the literature . Whereas the GARCH (1, 1) model allow researchers to model variance as conditional on the

[7] The study utilizes a sample of 107 firms from various sectors (seven different sectors, see Appendix 1).

past variance and error, rather than fixed through the series (Urquhart & McGroarty, 2014). Therefore, to capture the time-varying behavior of return of individual firms, we run the following GARCH (1, 1) regression:

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \theta h_{t-1}$$

Where, for equity returns at time *t*, h_t is the conditional variance, h_{t-1} represents the conditional variance of equity returns at time *t-1* while α_0, α_1 & θ are the coefficients of the GARCH model. The GARCH model is an appropriate model and possesses the potential ability to capture the desirable features of equity market returns but it is not appropriate to use to capture the non-normality feature of returns series. Therefore, we also employ a non-parametric Kruskal-Wallis (K.W) test to examine predominant sensitivity of the population to the difference in mean and whether the population has identical distributions from which the samples are drawn. Thus, we investigate the mean differences in the stock returns on holidays and non- holidays:

$$H = \left(\frac{12}{N(N+1)} \sum_{j=1}^{k} \frac{R_j^2}{n_j}\right) - 3(N+1)$$

Where represents the total number of observations, denotes the number of groups, and indicate the total number of observations and the average rank of observations in the group respectively. Therefore, to investigate how exactly holiday effect has behaved/performed through time we employ the Kruskal-Wallis test and GARCH regression model to the full-sample as well as to subsamples of fixed length. We split our data into sub-samples of 5 years, thus generate 4 subsamples of identical lengths. A sub-sample of 5-years holds a sufficient set of observations to offer reliable and sufficient results for investigating the behavior of holiday effect and observe how this anomalous effect has behaved/ performed through time.

We employ the empirical tests discussed above on the returns of 107 companies listed at Pakistan Stock Exchange (PSX). We calculate daily returns for 20 years (from January 1996 to December 2015) using the following formula;

$$r_t = [ln(P_t) - ln(P_{t-1})] \times 100$$

Where at time *t*, the natural logarithm of the price of individual

companies is represented by $ln(P_t)$, while at time $t-1$ natural logarithm of price is represented by $ln(P_{t-1})$, series of returns for each of 107 companies comprising 5219 observations.

Kurtosis, skewness and Jarque–Bera-statistics are used to detect the normality of data which show that 107 companies deviate from the normal distribution which indicates that the distributions of companies' return series are not normal (A normal distribution should have a zero-skewness statistic and a kurtosis statistic of three). In order to investigate the series further, three most common types of unit root tests are also conducted (ADF, PP and KPSS) for all 107 companies. Both the ADF test (Augmented Dickey-Fuller) and the PP test (Phillips Perron) have non-stationarity as their null hypothesis while the alternative hypothesis is being stationarity. KPSS test (Kwiatkowski-Phillips-Schmidt-Shin) is also conducted in order to avoid the over the rejection of the null hypothesis. KPSS has stationarity as the null hypothesis while the alternative hypothesis is being non-stationarity. ADF test and PP-test reveal that price level for around 83% firms is non-stationary, as the first difference is taken (returns), the series of return of all the companies become stationary at 1% significance in each case of Pure Random-Walk, Random-Walk with drift and Random-Walk with drift & deterministic trends. The results of KPSS test reveal that price levels of all 107 firms reject the null hypothesis of stationarity at 1 % significance in full-sample; indicating price levels are nonstationary with both Random-walk with drift and Random-walk with drift and deterministic trends. Similarly, the results reveal that when the first difference (return) of the series is taken 99% firms accept the null hypothesis of stationarity at 1 % significance in full-sample indicating return series are stationary with Pure Random-Walk, Random-Walk with drift and Random-Walk with. The results of Kurtosis, skewness, Jarque–Bera-statistics and unit root tests are calculated for full and all sub-samples and are kept with the author may be provided on demand.

Table 1. Descriptive Statistics of Holiday effect in all firms during full sample period while *** shows the significance level at 1%.

	Mean	**Std. Deviation**	**t-statistic**	**W-statistic**
Holiday	0.1681	0.3008	4.884***	36.655***
Non-Holiday	0.0249	0.0385		

Table 2. Mean Returns on Holidays and non-Holidays of individual firms over the period 1996-2015.

Holiday Effect	Firms	Mean	Firms	Mean	Firms	Mean	Firms	Mean
Holiday	PK:ABB	0.037	PK:DEG	0.246	PK:JIN	0.262	PK:TLM	0.071
Non-Holiday		0.052		0.031		0.06		-0.016
Holiday	PK:ADI	0.086	PK:ETU	0.319	PK:KIE	0.63	PK:PTC	0.103
Non-Holiday		0.044		0.055		-0.053		0.063
Holiday	PK:AGR	0.509	PK:ERO	0.135	PK:KRM	-0.075	PK:PSM	0.207
Non-Holiday		0.051		0.045		0.01		-0.022
Holiday	PK:AGT	0.13	PK:FSM	-0.196	PK:KWG	0.489	PK:LAK	0.108
Non-Holiday		0.065		0.055		0.012		0.101
Holiday	PK:ACB	0.196	PK:FAU	0.252	PK:KNR	0.317	PK:PCT	0.391
Non-Holiday		0.031		0.037		0.026		0.029
Holiday	PK:ATH	0.095	PK:FZM	1.296	PK:LDP	0.042	PK:POC	0.271
Non-Holiday		0.101		-0.031		-0.003		-0.013
Holiday	PK:ATR	0.142	PK:FEC	0.086	PK:MLC	0.639	PK:RMP	0.252
Non-Holiday		0.044		0.02		0.001		0.07
Holiday	PK:BKP	0.306	PK:NAK	-0.103	PK:MBK	0.135	PK:RUP	-0.057
Non-Holiday		0.015		0.026		0.067		-0.023
Holiday	PK:BAP	0.124	PK:GAI	-0.157	PK:MIR	-0.127	PK:STM	0.134
Non-Holiday		0.088		0.038		0.041		-0.009
Holiday	PK:BHA	0.091	PK:GTR	0.401	PK:MRB	0.047	PK:CCB	0.548
Non-Holiday		0.036		0.045		0.091		-0.066
Holiday	PK:BOC	0.029	PK:GWC	0.131	PK:NAR	0.055	PK:SAN	0.098
Non-Holiday		0.05		-0.004		0.034		0.008
Holiday	PK:CAL	0.326	PK:GLT	-0.214	PK:NPK	0.265	PK:HPN	0.08
Non-Holiday		-0.003		0.051		0.084		0.032
Holiday	PK:CPB	0.055	PK:GRY	0.388	PK:NAT	0.464	PK:SPP	0.103
Non-Holiday		0.025		0.009		-0.04		0.065
Holiday	PK:CTC	0.33	PK:GUL	-0.005	PK:NHT	0.25	PK:SAP	0.178
Non-Holiday		0.019		0.042		0.05		0.041
Holiday	PK:CSA	-0.016	PK:GSM	-0.07	PK:NON	-0.247	PK:SEA	0.067
Non-Holiday		0.044		-0.019		0.048		0.087
Holiday	PK:CTX	-0.23	PK:HAB	0.12	PK:ORI	-0.047	PK:SER	0.184
Non-Holiday		0.018		0.036		0.021		0.045
Holiday	PK:CYA	0.13	PK:MET	0.188	PK:PAC	0.073	PK:SHA	0.197
Non-Holiday		0.058		0.055		0.043		0.023
Holiday	PK:DAC	0.02	PK:HSM	0.151	PK:PET	0.205	PK:SCM	-0.252
Non-Holiday		-0.028		0.041		0.045		0.017
Holiday	PK:DAE	0.106	PK:HAE	0.189	PK:PSM	-0.031	PK:SHJ	-0.022
Non-Holiday		-0.012		0.008		0.073		0.025
Holiday	PK:DAN	0.365	PK:HPM	0.067	PK:PNC	-0.212	PK:SHK	0.361
Non-Holiday		-0.024		0.062		0.072		-0.002
Holiday	PK:DDH	0.206	PK:HUB	0.03	PK:PEN	2.164	PK:PBS	-0.002
Non-Holiday		0.058		0.029		-0.032		0.033
Holiday	PK:DAW	0.31	PK:HUF	-0.222	PK:PAL	0.437	PK:SIT	-0.097
Non-Holiday		0.056		0.066		-0.021		0.046
Holiday	PK:DKT	0.397	PK:ICI	0.016	PK:PNS	0.291	PK:SON	0.384
Non-Holiday		-0.059		0.021		0.047		0.025
Holiday	PK:DMT	-0.041	PK:IMO	0.293	PK:POF	0.035	PK:SNG	0.285
Non-Holiday		-0.034		0.069		0.064		-0.001

Holiday	PK:DES	0.326	PK:INI	-0.068	PK:PRE	0.119	PK:SUI	0.167
Non-Holiday		-0.07		0.059		0.023		0.019
Holiday	PK:DSM	0.521	PK:ASB	0.173	PK:PSO	0.146	PK:TRP	-0.39
Non-Holiday		-0.062		-0.039		0.027		-0.006
Holiday	PK:DEW	-0.165	PK:JAV	0.082	PK:PSC	0.376		
Non-Holiday		-0.06		0.018		-0.025		

EMPIRICAL RESULTS

Table 1 presents the analysis of Holiday effect covering the whole sample period from 1996 to 2015 on all 107 companies. A non-parametric test Kruskal-Wallis statistic along with a standard t-statistic for differences in mean are calculated. Pre-holidays mean returns are higher than mean returns on non-holidays. Further, both test statistics support robust evidence of holiday effect by indicating significant mean differences between holiday and non-holidays returns. Therefore, we find holiday effect over the full sample period which is statistically significant. Table 2 shows the mean return of holidays and non-holidays for individual companies over the period of full-sample. Holidays mean returns are higher than mean returns on non-holidays in 71.1% firms. Therefore, in the majority of the firms we find holiday effect in the whole sample period on the basis of mean returns. Tables 3, 4, 5 & 6 presents the behavior of holiday effect in full-sample as well as in sub-samples through GARCH (1,1) model and KW test. The results of full-sample reveal that holiday effect is significantly positive in 12 firms[8] over the period of 20 years, comprising 1996 to 2015. This behavior shows that the returns of these firms are significantly higher and positive prior to the holidays time. Similarly, 66 firms[9] show that the pre-holiday return is positive but insignificant over the full sample. However, 78 (12+66) firms show that the returns are positive before the holiday in the full sample period. On the other hand, firms like PK:DAW, PK:GAI, PK:GLT and PK:INI generate significant but negative coefficient prior to holidays, while 25 firms[10] reflect insignificant and negative returns before the holidays.

[8] PK:AGR, PK:CTC, PK:ETU, PK:IMO, PK:JIN, PK:KIE, PK:MLC, PK:PEN, PK:POF, PK:PSC, PK:PCT and PK:SON.

[9] PK:ABB, PK:ADI, PK:AGT, PK:ACB, PK:ATH, PK:ATR, PK:BKP, PK:BHA, PK:CAL, PK:CPB, PK:CSA, PK:CYA, PK:DAC, PK:DAE, PK:DAN, PK:DDH, PK:DKT, PK:DMT, PK:DES, PK:DSM, PK:DEG, PK:ERO, PK:FAU, PK:FEC, PK:GTR, PK:GWC, PK:GUL, PK:GSM, PK:HAB, PK:MET, PK:HSM, PK:HAE, PK:HPM, PK:HUB, PK:HUF, PK:ICI, PK:ASB, PK:JAV, PK:KRM, PK:KNR, PK:LDP, PK:MBK, PK:NPK, PK:NAT, PK:NHT, PK:ORI, PK:PAC, PK:PET, PK:PAL, PK:PRE, PK:PSO, PK:TLM, PK:PSM, PK:LAK, PK:POC, PK:RMP, PK:RUP, PK:STM, PK:CCB and PK:SAN.

[10] PK:BAP, PK:BOC, PK:CTX, PK:DEW, PK:FSM, PK:FZM, PK:NAK, PK:GRY, PK:KWG, PK:MIR, PK:MRB, PK:NAR, PK:NON, PK:PSM, PK:PNC, PK:PNS, PK:PTC, PK:SPP, PK:SEA, PK:SER, PK:SCM, PK:SHJ, PK:PBS, PK:SIT and PK:TRP.

As far as the sub-sample analysis are concerned, Table 3 reveals that the coefficients of the holiday effect are insignificant (independent) in first sub-sample (1996-2000) for the companies PK:BOC, PK:FSM, PK:FZM, PK:MIR, PK:NPK, PK:PAL, PK:PNS PK:PRE, PK:PCT, PK:SPP, PK:SER and PK:SNG. The behavior of the holiday effect then turns to dependency (inefficiency) during the period of 2001-2005 for these companies as the coefficients are significant. While the effect then reverses and turns to independence and market becomes efficient for the companies in next two sub-samples (from 2006-2010 to 2011-2015), thus supporting AMH which states that market efficiency varies over the time and encounters the periods of efficiency and inefficiency. Table 4 reveals that firms PK:CTX, PK:DAN, PK:DDH, PK:HSM, PK:INI, PK:KIE, PK:NAR, PK:PNC, PK:LAK, PK:SEA and PK:SHJ show independence of holiday effect in first two sub-samples (1996-2000 and 2001-2005). The behavior of holiday effect reverses in third sub-sample (2006-2010) and becomes dependent which completely reverses and show independent behavior in the last sub-sample, consistent with AMH. Holiday effect remains insignificant (independent) in first three subsamples (from years 1996-2010) for the firms PK:ADI, PK:AGT, PK:BAP, PK:DAE, PK:DSM, PK:ETU, PK:ERO, PK:GAI, PK:POF, PK:RMP and PK:SHK and then reverts, predictable and moving towards dependency (market inefficiency) in last sub-sample (2011-2015) thus supporting AMH (Table 5). Similarly, Holiday effect for PK:GTR, PK:IMO, PK:JIN, PK:NON, PK:PEN, and PK:PSC (Table 6) also illustrates the behavior consistent with AMH. Therefore, 40 firms show the behavior of holiday effect consistent to AMH, means holiday effect fluctuates over time. While the holiday effect in 67 firms[11] remains independent and does not evolve over time as all the sub-samples produce insignificant coefficient (the results of firms generating insignificant holiday effect are not reported in the study but may be provided on demand).

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[11] PK:ABB, PK:AGR, PK:ACB, PK:ATH, PK:ATR, PK:BKP, PK:BHA, PK:CAL, PK:CPB, PK:CTC, PK:CSA, PK:CYA, PK:DAE, PK:DAW, PK:DKT, PK:DMT, PK:DES, PK:DEW, PK:DEG, PK:FAU, PK:FEC, PK:NAK, PK:GWC, PK:GLT, PK:GRY, PK:GUL, PK:GSM, PK:HAB, PK:MET, PK:HAE, PK:HPM, PK:HUB, PK:HUF, PK:ICI, PK:ASB, PK:JAV, PK:KRM, PK:KWG, PK:KNR, PK:LDP, PK:MLC, PK:MBK, PK:MRB, PK:NAT, PK:NHT, PK:ORI, PK:PAC, PK:PET, PK:PSM, PK:PSO, PK:TLM, PK:PTC, PK:PSM, PK:POC, PK:RUP, PK:STM, PK:CCB, PK:SAN, PK:HPN, PK:SAP, PK:SHA, PK:SCM, PK:PBS, PK:SIT, PK:SON, PK:SUI and PK:TRP.

Table 3. Results of the Holiday-Effect with the application GARCH (1,1) regression model and Kruskal-Wallis (K.W) test in full-sample as well as in subsample periods for companies listed at PSX (PK:BOC, PK:FSM, PK:FZM, PK:MIR, PK:NPK, PK:PAL, PK:PNS PK:PRE, PK:PCT, PK:SPP, PK:SER and PK:SNG). Where ***, ** and * represent significance at levels of 1%, 5% and 10%, while "ß" represents Holiday effect and "c" represents returns in non-holiday and number of observations are represented by "N".

N	Firms	Period	c	ß	α_1	α_2	θ	K.w
5219	PK:BOC	Full-Sample	0.0235	-0.0656	4.028***	0.09***	0.435***	0.0169
1305		1996-2000	-0.0201	0.4228	9.65***	0.075***	0.4169***	1.9203
1305		2001-2005	0.015	0.5901**	0.1982***	0.0639***	0.9056***	0.1428
1304		2006-2010	-0.060***	-0.2262	-0.0128***	-0.0038***	1.0082***	0.272
1305		2011-2015	-0.0006	0.0368	0.4595***	0.167***	0.7403***	0.0703
5219	PK:FSM	Full-Sample	0.0183	-0.2883	2.6657***	0.0586***	0.7165***	0.0001
1305		1996-2000	-0.0911	-0.4604	26.2518***	0.0923***	-0.1092***	0.2456
1305		2001-2005	0.1396*	-1.075***	0.0372***	0.0296***	0.9702***	1.1267
1304		2006-2010	-0.0567***	-0.1378	0.0067***	-0.0071***	1.0052***	1.016
1305		2011-2015	0.0394	0.1587	0.6515***	0.0992***	0.7891***	0.9165
5219	PK:FZM	Full-Sample	0.3666***	-0.4074	9.2275***	2.7492***	0.014***	0.0822
1305		1996-2000	1.121***	0.6892	98.1191***	3.2804***	-0.0003	0.2567
1305		2001-2005	-0.0031	-0.6561**	0.0227***	0.0158***	0.9815***	0.6669
1304		2006-2010	0.0926*	-0.3383*	0.0211***	-0.0079***	1.0068***	0.369
1305		2011-2015	-0.0142	-0.0516	0.0544***	0.0507***	0.945***	0.2276
5219	PK:MIR	Full-Sample	-0.0223	-0.1915	1.7477***	0.0839***	0.7242***	1.415
1305		1996-2000	-0.0701	-0.2557	10.9595***	0.0395***	-0.1844***	0.1657
1305		2001-2005	-0.045	-1.334***	2.4695***	0.1126***	0.7467***	1.9986
1304		2006-2010	0.0481	0.2968	4.7766	-0.0106***	0.5641*	0.106
1305		2011-2015	0.0107	-0.4618*	0.9088***	0.1579***	0.6889***	1.5395
5219	PK:NPK	Full-Sample	0.0498**	0.0751	0.0482***	0.0433***	0.9508***	0.2868
1305		1996-2000	0.0336	0.0517	0.0747***	0.0755***	0.9214***	0.3217
1305		2001-2005	0.0729	0.6624**	4.212***	0.1413***	0.306***	0.7665
1304		2006-2010	-0.0275	0.2621	0.1699***	0.0926***	0.8691***	0.143
1305		2011-2015	0.0156	0.2151	0.5153***	0.1562***	0.72***	0.5815

5219	PK:PAL	Full-Sample	-0.0439	0.3319	0.8653***	0.0959***	0.8444***	4.2956**
1305		1996-2000	-0.0487	-0.3454	1.1573***	0.1039***	0.8374***	0.0828
1305		2001-2005	-0.0321	0.9311***	0.6235***	0.0824***	0.8703***	2.8266*
1304		2006-2010	-0.1608*	0.1593	1.8078***	0.17***	0.6736***	0.205
1305		2011-2015	0.0406	0.4519	0.6967***	0.0868***	0.8729***	2.5274
5219	PK:PNS	Full-Sample	0.0269	-0.1374	0.0134***	0.0228***	0.9775***	0.1973
1305		1996-2000	-0.1423	-0.2746	1.5114***	0.0604***	0.8904***	0.0268
1305		2001-2005	0.2211**	1.0824**	1.1035***	0.1049***	0.8616***	3.0079*
1304		2006-2010	-0.0623	-0.4079	0.5801***	0.198***	0.728***	2.202
1305		2011-2015	-0.0439	-0.0933	1.499***	0.1992***	0.5602***	0.0011
5219	PK:PRE	Full-Sample	-0.0331	0.1881	0.2109***	0.0486***	0.9261***	1.7336
1305		1996-2000	-0.2121**	-0.0332	0.3252***	0.0333***	0.9369***	0.0011
1305		2001-2005	0.0684	0.5228**	0.0947***	0.0499***	0.9407***	0.291
1304		2006-2010	-0.0013	0.0638	0.2874***	0.1901***	0.7737***	0.508
1305		2011-2015	-0.056	0.3093	0.5432***	0.1925***	0.7038***	1.7496
5219	PK:PCT	Full-Sample	0.0586	0.4193**	0.0472***	0.049***	0.9512***	2.7984*
1305		1996-2000	-0.298**	0.4972	1.3841***	0.0583***	0.8932***	1.7603
1305		2001-2005	0.1056	1.2545***	0.695***	0.0701***	0.8973***	0.9387
1304		2006-2010	-0.0187	0.428	0.273***	0.1802***	0.8009***	0.588
1305		2011-2015	0.1347**	0.1702	0.0912***	0.0631***	0.9277***	0.8858
5219	PK:SPP	Full-Sample	-0.0058	-0.128	0.1066***	0.0769***	0.9426***	0.0069
1305		1996-2000	-0.029	0.4543	7.3799***	0.1016***	0.1734***	0.4377
1305		2001-2005	-0.1052	2.2698***	0.114***	0.3702***	0.8783***	0.0795
1304		2006-2010	-0.0342	-0.3984	1.0722***	0.1266***	0.7033***	1.143
1305		2011-2015	0.0381	-0.0142	0.0338***	0.0581***	0.9387***	0.4796
5219	PK:SER	Full-Sample	-0.043	-0.1122	0.0725***	0.0506***	0.9656***	0.8704
1305		1996-2000	-0.0542	0.0769	0.2632***	0.0209***	0.8707***	0.4521
1305		2001-2005	-0.3517***	-1.490***	0.0771	0.9287***	0.8797***	0.1427
1304		2006-2010	0.0406	-0.1832	1.599***	0.0811***	0.7614***	0.833
1305		2011-2015	-0.0144	0.2199	0.5919***	0.221***	0.6672***	4.0494**
5219	PK:SNG	Full-Sample	-0.0026	0.2151	0.5385***	0.1333***	0.788***	2.7583*
1305		1996-2000	-0.0261	-0.0463	0.5194***	0.1519***	0.8096***	0.6661
1305		2001-2005	0.0385	0.6616**	0.4442***	0.0684***	0.8687***	1.114
1304		2006-2010	-0.0279	0.1355	0.7991***	0.2071***	0.6545***	0.247
1305		2011-2015	-0.0039	0.138	0.6567***	0.1252***	0.7221***	0.8842

Table 4. Results of the Holiday-Effect with the application GARCH (1,1) regression model and Kruskal-Wallis (K.W) test in full-sample as well as in subsample periods for companies listed at PSX (PK:CTX, PK:DAN, PK:DDH, PK:HSM, PK:INI, PK:KIE, PK:NAR, PK:PNC, PK:LAK, PK:SEA and PK:SHJ). Where ***, ** and * represent significance at levels of 1%, 5% and 10%, while "ß" represents Holiday effect and "c" represents returns in non-holiday and number of observations are represented by "N".

N	Firms	Period	c	ß	α_1	α_2	θ	K.w
5219	PK:CTX	Full-Sample	0.0053	-0.2381	0.066***	0.0296***	0.966***	0.1938
1305		1996-2000	0.1144	-0.3979	26.1685***	0.1369***	-0.1747***	0.0983
1305		2001-2005	0.0342	0.3194	7.8322***	0.1101***	0.1144	1.3419
1304		2006-2010	-0.0611	-0.8696***	0.0143***	0.1245***	0.8883***	0.436
1305		2011-2015	-0.0082	-0.2484	0.03*	0.0209***	0.9755***	0.5267
5219	PK:DAN	Full-Sample	-0.0419	0.0437	0.0527***	0.015***	0.9843***	1.0317
1305		1996-2000	-0.246	0.3194	-0.2184***	-0.0018***	1.0083***	1.1596
1305		2001-2005	-0.0928	0.2646	9.2593***	0.1784***	0.552***	0.2024
1304		2006-2010	-0.0283	0.9146***	0.0115***	0.1372***	0.8868***	0.022
1305		2011-2015	0.0544	0.4571	0.0103	0.0144***	0.9846***	0.6778
5219	PK:DDH	Full-Sample	0.0711**	0.0719	1.5143***	0.2109***	0.5708***	1.1575
1305		1996-2000	0.1276*	-0.1988	2.4057***	0.2901***	0.5138***	0.2299
1305		2001-2005	0.075	0.302	1.794***	0.2803***	0.4656***	1.4557
1304		2006-2010	0.0239	-0.472**	0.1313***	0.153***	0.8344***	0.497
1305		2011-2015	0.0073	0.2613	0.8094***	0.167***	0.6762***	2.9479*
5219	PK:HSM	Full-Sample	0.0232	0.0696	1.251***	0.0765***	0.7135***	2.2075
1305		1996-2000	-0.0111	-0.1711	3.8677***	-0.0078***	0.4479**	0.2124
1305		2001-2005	-0.0092	0.7972	15.5545***	0.0248***	-0.2737***	2.1292
1304		2006-2010	0.0731	-0.4887**	0.0808***	0.1153***	0.8771***	1.08
1305		2011-2015	0.0917**	0.2564	0.6699***	0.3134***	0.5648***	3.1251*
5219	PK:INI	Full-Sample	-0.0076	-0.1953*	0.7622***	0.2313***	0.639***	0.0246
1305		1996-2000	-0.0591	-0.1545	0.6214***	0.1946***	0.6941***	0.48
1305		2001-2005	0.0645	-0.2594	1.028***	0.3343***	0.6157***	0.0247
1304		2006-2010	0.0671	-0.42*	0.4495***	0.296***	0.6361***	2.372
1305		2011-2015	-0.0445	0.1634	0.7156***	0.1318***	0.677***	4.1979**
5219	PK:KIE	Full-Sample	-0.0571	0.5072**	1.0302***	0.1335***	0.8018***	5.7382**
1305		1996-2000	-0.1388	-0.0317	0.8913***	0.1539***	0.8059***	1.0869
1305		2001-2005	-0.0311	0.3437	0.7067***	0.1365***	0.8203***	0.1372

1304		2006-2010	-0.1748*	0.6773*	2.0821***	0.1692***	0.704***	2.641*
1305		2011-2015	0.0164	0.699*	0.5783***	0.1166***	0.8456***	2.3849
5219	PK:NAR	Full-Sample	0.0107	-0.0151	1.5882***	0.1474***	0.6213***	2.4781
1305		1996-2000	-0.16**	0.2904	0.3414***	0.0952***	0.8768***	0.0026
1305		2001-2005	0.1326*	0.6146*	0.5532***	0.123***	0.8031***	1.3714
1304		2006-2010	-0.0636	-3.2254***	2.1235***	0.7291***	0.2533***	0.092
1305		2011-2015	0.0081	0.2742	0.9319***	0.1417***	0.5525***	4.0226**
5219	PK:PNC	Full-Sample	0.0603	-0.2674	4.1068	-0.0024***	0.5931*	4.2185**
1305		1996-2000	-0.124	0.1029	4.6679	-0.0017***	0.396	0.3722
1305		2001-2005	0.2242*	-0.5656	0.8702***	-0.0045***	0.9229***	2.4281
1304		2006-2010	0.0509	-0.4765***	0.4199***	0.2344***	0.6842***	5.113**
1305		2011-2015	0.0059	-0.1111	0.8553***	0.1492***	0.6936***	0.7227
5219	PK:LAK	Full-Sample	0.0569**	0.14	0.1614***	0.0672***	0.9132***	0.543
1305		1996-2000	0.0731	-0.0427	2.8121***	0.1059***	0.5747***	0.0336
1305		2001-2005	0.1241*	-0.1907	0.1102***	0.0224***	0.9616***	0.0662
1304		2006-2010	0.0627	0.5436**	0.0516***	0.1097***	0.9204***	0.148
1305		2011-2015	0.0117	0.0961	0.0562***	0.0859***	0.9044***	2.0765
5219	PK:SEA	Full-Sample	0.0495*	-0.1622	0.1742***	0.111***	0.867***	0.061
1305		1996-2000	-0.1382*	-0.0612	2.0167***	0.2245***	0.5225***	0.0056
1305		2001-2005	0.1356**	0.0008	0.4736***	0.1433***	0.8008***	0.4626
1304		2006-2010	-0.0358	-0.4854***	0.0951***	0.1217***	0.8702***	0.658
1305		2011-2015	0.1075**	0.0506	0.0648***	0.079***	0.9069***	0.2499
5219	PK:SHJ	Full-Sample	-0.026	-0.0196	1.3599***	0.2328***	0.4937***	0.1822
1305		1996-2000	-0.0029	-0.023	2.0408***	0.1341*	0.4828***	0.0027
1305		2001-2005	0.0489	0.0566	0.8301***	0.2099***	0.5719***	0.4724
1304		2006-2010	-0.0208	-0.4873*	2.0948***	0.1289***	0.4853***	2.406
1305		2011-2015	-0.0711	0.2031	1.7514***	0.2779***	0.465***	0.0742

Table 5. Results of the Holiday-Effect with the application GARCH (1,1) regression model and Kruskal-Wallis (K.W) test in full-sample as well as in subsample periods for companies listed at PSX (PK:ADI, PK:AGT, PK:BAP, PK:DAE, PK:DSM, PK:ETU, PK:ERO, PK:GAI, PK:POF, PK:RMP and PK:SHK). Where ***, ** and * represent significance at levels of 1%, 5% and 10%, while "ß" represents Holiday effect and "c" represents returns in non-holiday and number of observations are represented by "N".

N	Firms	Period	c	ß	α_1	α_2	θ	K.w
5219	PK:ADI	Full-Sample	0.0708**	0.1547	0.5557***	0.1526***	0.7872***	0.9545
1305		1996-2000	-0.0288	-0.1163	0.7853***	0.1299***	0.8026***	0.0373
1305		2001-2005	0.1435*	0.0541	1.3866***	0.2477***	0.6549***	0.7828

1304		2006-2010	0.1798**	0.045	1.1105***	0.1891***	0.6877***	0.334
1305		2011-2015	0.0126	0.4502**	0.2525***	0.1051***	0.8309***	1.5345
5219	PK:AGT	Full-Sample	0.0027	0.1699	0.9197***	0.1373***	0.6897***	0.6773
1305		1996-2000	-0.0775	0.0815	2.1518***	0.1571***	0.5849***	0.4967
1305		2001-2005	0.0606	0.0614	0.4091***	0.1169***	0.8294***	0.0252
1304		2006-2010	0.0222	0.1705	0.2264***	0.2277***	0.7343***	0.004
1305		2011-2015	-0.0171	0.4851**	0.3944***	0.1291***	0.7632***	1.1823
5219	PK:BAP	Full-Sample	0.0076	-0.0468	0.1336***	0.0568***	0.921***	0.326
1305		1996-2000	-0.0588	-0.1249	0.183***	0.0585***	0.8997***	0.0374
1305		2001-2005	0.0394	0.0195	1.3721***	0.0725***	0.686***	0.8996
1304		2006-2010	0.0659	-0.0822	1.9666***	0.1699***	0.5041***	0.208
1305		2011-2015	0	-0.0001**	0	0.114***	0.8971***	0.0992
5219	PK:DAE	Full-Sample	-0.0598*	0.1028	1.236***	0.0995***	0.7204***	0.4999
1305		1996-2000	-0.1148	0.042	5.1726***	0.0841***	0.5094***	2.5337
1305		2001-2005	0.0273	-0.1488	2.8268***	0.0769***	0.2938***	0.6936
1304		2006-2010	-0.0467	0.1519	3.789	-0.0049***	0.3647	0.162
1305		2011-2015	-0.105	0.3514	1.1167***	0.1306***	0.7586***	1.5924
5219	PK:DSM	Full-Sample	-0.0749	0.3726	0.0869***	0.0222***	0.9729***	6.0797**
1305		1996-2000	-0.1237	0.2842	2.1638***	-0.0046	0.5947***	1.9813
1305		2001-2005	0.0057	0.78	5.0981***	-0.0135***	0.5156***	1.4337
1304		2006-2010	-0.1494	-0.438	0.7913***	0.0993***	0.8672***	0.118
1305		2011-2015	-0.063	1.6184***	1.4046***	0.0774***	0.8903***	7.002***
5219	PK:ETU	Full-Sample	0.0242	0.473***	0.9696***	0.1259***	0.7068***	3.3177*
1305		1996-2000	-0.1055*	0.2301	3.8088***	0.028**	0.2346	0.5755
1305		2001-2005	0.1276*	0.2244	1.0173***	0.0514***	0.7923***	0.0241
1304		2006-2010	0.0988*	0.1845	0.5947***	0.2461***	0.6777***	0.115
1305		2011-2015	-0.0428	0.6624***	0.8996***	0.2036***	0.5922***	12.7528***
5219	PK:ERO	Full-Sample	0.0716***	0.1099	0.4451***	0.174***	0.7508***	1.7814
1305		1996-2000	0.0251	0.1871	0.3706***	0.1582***	0.8053***	2.1831
1305		2001-2005	0.0626	-0.2158	0.6358***	0.3281***	0.6053***	1.118
1304		2006-2010	0.1256**	-0.1481	0.7251***	0.2418***	0.6309***	2.321
1305		2011-2015	0.0344	0.5921**	0.1998***	0.0865***	0.8668***	4.5855**
5219	PK:GAI	Full-Sample	-0.0375	-0.7034***	0.0822***	0.0635***	0.9543***	0.0301
1305		1996-2000	-0.1551	-0.6366	11.2847***	0.0938***	0.6127***	0.2085
1305		2001-2005	0.0733	0.3412	0.9577***	0.1091***	0.8043***	0.0276
1304		2006-2010	-0.2319***	0.0298	0.33***	0.0599***	0.893***	0.121
1305		2011-2015	0.0231	-0.2561**	0.0356***	0.0285***	0.954***	0.459
5219	PK:POF	Full-Sample	0.0539**	0.2573*	0.0991***	0.0691***	0.9155***	2.077
1305		1996-2000	-0.0507	0.1047	0.0208***	0.0609***	0.9523***	0.129
1305		2001-2005	0.0795	0.1346	0.5209***	0.2147***	0.7643***	0.5436
1304		2006-2010	0.1258**	0.0285	0.6328***	0.1786***	0.7085***	0.559
1305		2011-2015	0.0101	0.3565**	0.0876***	0.0585***	0.8959***	8.7933***
5219	PK:RMP	Full-Sample	0.0289	0.0164	0.0451***	0.0334***	0.9542***	2.9248*
1305		1996-2000	-0.1241***	0.1129	0.0011***	-0.005***	1.008***	0.0676

1305		2001-2005	0.1054**	-0.1104	0.058***	0.0282***	0.9414***	0.7962
1304		2006-2010	0.0464	0.2902*	0.0854***	0.0538***	0.918***	0.024
1305		2011-2015	0.0167	0.6353**	1.7707***	0.2321***	0.425***	2.0456
5219	PK:SHK	Full-Sample	-0.017	0.1243	0.3017***	0.0294***	0.9504***	0.7855
1305		1996-2000	-0.065	0.3257	6.1137***	0.0556***	0.3899***	0.2361
1305		2001-2005	0.105	-0.4875	0.2469***	0.0199***	0.9649***	1.6014
1304		2006-2010	-0.1313	-0.3088	1.4565***	0.161***	0.7187***	0.188
1305		2011-2015	-0.064	0.8206**	0.507***	0.1092***	0.8575***	1.361

Table 6. Results of the Holiday-Effect with the application GARCH (1,1) regression model and Kruskal-Wallis (K.W) test in full-sample as well as in subsample periods for companies listed at PSX (PK:ADI, PK:AGT, PK:BAP, PK:DAE, PK:DSM, PK:ETU, PK:ERO, PK:GAI, PK:POF, PK:RMP and PK:SHK). Where ***, ** and * represent significance at levels of 1%, 5% and 10%, while "ß" represents Holiday effect and "c" represents returns in non-holiday and number of observations are represented by "N".

N	Firms	Period	c	ß	α_1	α_2	θ	K.w
5219	PK:JIN	Full-Sample	-0.1589***	0.3718*	0.3903***	0.142***	0.8646***	3.2195*
1305		1996-2000	-0.018	0.2464	2.4122***	0.108***	0.5969***	0.6566
1305		2001-2005	-0.4433***	-0.4891**	0.0938**	0.3527***	0.8715***	0.0333
1304		2006-2010	-0.0164	0.1921	0.766***	0.2337***	0.5983***	1.129
1305		2011-2015	0.0398	0.369**	0.3468***	0.0956***	0.8131***	0.1432
5219	PK:NON	Full-Sample	-0.0072	-0.1441	0.5886***	0.0822***	0.8587***	0.0023
1305		1996-2000	-0.0002	-0.5603*	0.1087***	0.0207***	0.9619***	1.0223
1305		2001-2005	0.0923	0.107	0.6236***	0.0425***	0.8969***	0.1206
1304		2006-2010	-0.0473	-0.3939*	0.1766***	0.1749***	0.824***	0.662
1305		2011-2015	0.0657	0.2006	6.3678	-0.007***	0.5746	1.0309
5219	PK:PSC	Full-Sample	-0.0325	0.4385**	0.2962***	0.0553***	0.9229***	0.7705
1305		1996-2000	-0.1447	0.2617	0.6447***	0.0591***	0.901***	0.1721
1305		2001-2005	-0.0129	0.7016**	5.0654***	0.1181***	0.3082***	1.8082
1304		2006-2010	-0.2104*	1.0972**	0.735***	0.0684***	0.9007***	0.162
1305		2011-2015	0.0049	-0.2646	0.3661***	0.1675***	0.7935***	0.0208
5219	PK:GTR	Full-Sample	-0.0201	0.1757	0.7986***	0.15***	0.7605***	2.4734
1305		1996-2000	-0.1937***	0.4306	0.9768***	0.1399***	0.8042***	1.7285
1305		2001-2005	0.0199	-0.2455	1.7227***	0.1849***	0.5977***	0.0002
1304		2006-2010	-0.0431	-0.3898**	0.1801***	0.175***	0.8099***	0.133
1305		2011-2015	0.0491	0.721**	1.6121***	0.1776***	0.5503***	6.2667**
5219	PK:IMO	Full-Sample	0.0606**	0.2933**	0.1939***	0.1009***	0.8713***	3.0898*
1305		1996-2000	-0.137	1.0107***	3.1405***	0.1984***	0.5304***	2.5407
1305		2001-2005	0.1467**	-0.2781	0.8212***	0.1225***	0.7474***	0.1483
1304		2006-2010	0.0256	0.3494	0.1991***	0.1303***	0.8385***	0.015
1305		2011-2015	0.0688	0.2908	0.9386***	0.1855***	0.5065***	4.7209**
5219	PK:PEN	Full-Sample	-0.1392	3.6821***	68.2632	-0.0008***	0.5396	1.6291

1305	1996-2000	-0.4707	8.731***	196.3981	-0.0027***	0.5974*	1.8545
1305	2001-2005	-0.0008	0.1188	1.6502***	0.0909***	0.9122***	0.4753
1304	2006-2010	0.0718	-0.514**	0.4029***	0.1612***	0.7913***	0.92
1305	2011-2015	-0.1055**	0.3573	0.7586***	0.1323***	0.6976***	1.9692

CONCLUSION

Although the recent studies support the fact that calendar anomalies have reversed or even diminished over time, the voluminous literature is evident of the fact that calendar anomalies are accepted in almost all equity markets of the world. This paper examined the holiday-effect across time to explore whether this anomaly can be used to exploit the excess returns. The study finds around 72% of firms exhibit positive returns before holidays thus, supporting the presence of the holiday effect through average returns and GARCH (1,1) model in the whole-sample period of 1996-2015. Thus, this anomaly can be used to earn abnormal returns. Finally, it is clear from sub-sample analysis that holiday-effect in 40 firms has shifted from periods of predictability/market inefficiency to the periods of no-predictability/market efficiency or vice versa, while 67 firms exhibit no swing in holiday effect during sub-samples. As the predictability of holiday effect swings under periods of dependency/ inefficiency and independency/efficiency, we conclude that AMH provides a better description of behavior of holiday effect in Pakistan than the classical/traditional EMH.

In summary, we conclude that the holiday effect in firms' exhibits time-varying behavior across time through sub-samples. The sign of varying behavior of holiday effect is consistent and supporting AMH while opposing the traditional EMH. We believe a sub-sample analysis of long time period may be a more appropriate method to elucidate the idea of Adaptive Market Hypothesis (AMH) in future research and suggest the current method could be adapted and would be helpful to examine other calendar and market anomalies in different equity markets in the world.

Appendix. Names of sample companies and their codes

ABBOTT LABS. (PAK.)	PK:ABB	JUBILLE INSURANCE	PK:JIN
ADAMJEE INSURANCE	PK:ADI	KARACHI ELECTRIC SUPP.	PK:KIE
AGRIAUTO INDUSTRIES	PK:AGR	KARAM CERAMICS	PK:KRM
AL-GHAZI TRACTORS	PK:AGT	KOHINOOR MILLS	PK:KWG
ASKARI BANK	PK:ACB	KOHINOOR TEX.MILLS	PK:KNR
ATLAS HONDA	PK:ATH	LINDE PAKISTAN	PK:LDP
ATTOCK REFINERY	PK:ATR	MAPLE LEAF CMT.FACTORY	PK:MLC
BANK OF PUNJAB	PK:BKP	MCB BANK	PK:MBK
BATA PAKISTAN (~PR) (#T)	PK:BAP	MIRPURKHAS SUGAR	PK:MIR
BHANERO TEXTILE MILLS	PK:BHA	MURREE BREWERY COMPANY	PK:MRB
BOLAN CASTINGS	PK:BOC	NATIONAL REFINERY	PK:NAR
CAPITAL ASSETS LSG.	PK:CAL	NESTLE PAKISTAN	PK:NPK
CENTURY PAPER	PK:CPB	NIB BANK	PK:NAT
CHEARAT CEMENT COMPANY	PK:CTC	NISHAT (CHUNIAN)	PK:NHT
CRESCENT STEEL	PK:CSA	NOON SUGAR MILLS	PK:NON
CRESCENT TEXTILE MILLS	PK:CTX	ORIX LEASING PAK.	PK:ORI
CYAN LIMITED	PK:CYA	PACKAGES	PK:PAC
DADABHOY CEMENT	PK:DAC	PAK ELEKTRON	PK:PET
DADEX ETERNIT	PK:DAE	PAK SUZUKI MOTOR	PK:PSM
DANDOT CEMENT	PK:DAN	PAKISTAN CABLES	PK:PNC
DAWOOD HRC.CHEMS.CORP.	PK:DDH	PAKISTAN ENGINEERING	PK:PEN
DAWOOD LAWRENCEPUR	PK:DAW	PAKISTAN INTL.AIRLINES	PK:PAL
DEWAN KHALID TEX.	PK:DKT	PAKISTAN NAT.SHIP.	PK:PNS
DEWAN MUSHTAQ TEX.	PK:DMT	PAKISTAN OILFIELDS	PK:POF
DEWAN SALMAN FIBRE	PK:DES	PAKISTAN REFINERY	PK:PRE
DEWAN SUGAR	PK:DSM	PAKISTAN STATE OIL	PK:PSO
DEWAN TEXTILE MILLS	PK:DEW	PAKISTAN SYNTHETICS	PK:PSC
DG KHAN CEMENT COMPANY	PK:DEG	PAKISTAN TELECM.	PK:TLM
EFU GENERAL INSURANCE	PK:ETU	PAKISTAN TOBACCO	PK:PTC
ENGRO	PK:ERO	PARAMOUNT SPNG.MLS.	PK:PSM
FAISAL SPINNING MILLS	PK:FSM	PHILIP MORRIS PAKISTAN	PK:LAK
FAUJI FERTILIZER	PK:FAU	PIONEER CEMENT	PK:PCT
FAZAL TEXTILE MILLS	PK:FZM	POWER CEMENT	PK:POC
FECTO CEMENT	PK:FEC	RAFHAN MAIZE PRDS.	PK:RMP
FEROZE1888 MILLS	PK:NAK	RUPALI POLYESTER	PK:RUP
GATRON INDUSTRIES	PK:GAI	SAIF TEXTILE MILLS	PK:STM
GENERAL TYRE & RUBBER	PK:GTR	SAMBA BANK	PK:CCB
GHARIBWAL CEMENT	PK:GWC	SANA INDUSTRIES	PK:SAN
GLAXOSMITHKLINE PAK.	PK:GLT	SANOFI AVENTIS PAKISTAN	PK:HPN
GRAYS OF CAMBRIDGE	PK:GRY	SAPPHIRE FIBRES	PK:SPP
GUL AHMED TEXTILE MILLS	PK:GUL	SAPPHIRE TEX.MLS.	PK:SAP
GULISTAN SPNG.MILLS (~PR) (#T)	PK:GSM	SEARLE	PK:SEA
HABIB ADM LIMITED	PK:HAB	SERVICE INDUSTRIES	PK:SER
HABIB METROPOLITAN BANK	PK:MET	SHABIR TILES	PK:SHA
HABIB SUGAR	PK:HSM	SHADMAN COTTON MILLS	PK:SCM
HALA ENTERPRISES	PK:HAE	SHAHTAJ SUGAR MILLS	PK:SHJ
HINOPAK MOTORS	PK:HPM	SHAKARGANJ MILLS	PK:SHK
HUB POWER COMPANY	PK:HUB	SHELL PAKISTAN	PK:PBS
HUFFAZ SEAMLESS PIPE	PK:HUF	SITARA CHEMICAL	PK:SIT
ICI PAKISTAN	PK:ICI	SONERI BANK	PK:SON
INDUS MOTOR COMPANY	PK:IMO	SUI NORTHERN GAS	PK:SNG
INTERNATIONAL INDS.	PK:INI	SUI SOUTHERN GAS	PK:SUI
INVEST CAPITAL INV.BANK	PK:ASB	TRI-STAR POLYESTER	PK:TRP
JAVEDAN	PK:JAV		

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